COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100

HARRY W. STONE, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE
REFER TO FILE WM-9

January 31, 2001

Mr. Dennis A. Dickerson, Executive Officer
California Regional Water Quality
Control Board - Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, CA 90013-1105

Dear Mr. Dickerson:

REPORT OF WASTE DISCHARGE FOR MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES IN THE COUNTY OF LOS ANGELES (ORDER NO. 96-054, NPDES NO. CAS614001)

Enclosed is the Report of Waste Discharge for the Los Angeles River, San Gabriel River, Dominguez Channel, Ballona Creek, and Malibu Creek Watersheds in Los Angeles County.

The Report consists of the following components:

- Permit Application
- Performance Standards
- Watershed Management Area Plans

We look forward to working with your staff to expedite the approval process of the Report. I have directed my staff to work with the Regional Water Quality Control Board in making any necessary modifications.

If you have any additional questions, please contact Mr. Mustafa Ariki at (626) 458-5948, Monday through Thursday, 7:30 a.m. to 6 p.m.

Very truly yours,

HARRY W. STONE
Director of Public Works

BRIAN T. SASAKI
Deputy Director

GH:kk
A:\ROWD-TRANSMITTAL-LETTER.WPD

Enc.

cc: All Permittees

THE ORIGINAL DOCUMENT HAS A REFLECTIVE WATERMARK ON THE BACK. HOLD AT AN ANGLE TO VIEW WHEN CHECKING THE ENDORSEMENT.

COUNTY OF LOS ANGELES

G7831108

PAYABLE AT:
ONE PENN'S WAY, NEW CASTLE, DE 19720

THE TREASURER OF THE COUNTY OF LOS ANGELES
500 W. TEMPLE ST., LOS ANGELES, CA 90012
WILL PAY TO THE ORDER OF:

AUDITOR CONTROLLER'S GENERAL WARRANT
WARRANT CLEARANCE FUND • LOS ANGELES, CALIFORNIA

NOT PAYABLE AFTER TWO YEARS FROM DATE ISSUED

62-20
311

STATE WATER RESOURCES
CONTROL BOARD
C/O DEPT OF PUBLIC WORKS
ATTN: VICKY CACERES
626-458-6909 91803

ISSUE DATE	WARRANT NO
012401	7831108

DOLLARS	CENTS
$10,00000	

APPROVED

ALAN T. SASAKI AUDITOR-CONTROLLER
BY:

76G 250 9/98

⑈7831108⑈ ⑆031100209⑆ 38570535⑈

Rec'd 01/31/01

00251

R0000003

Pursuant to
NPDES PERMIT ORDER NO. 96-054
(CAS614001)

REPORT OF WASTE DISCHARGE (ROWD)

February 01, 2001

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT, LOS ANGELES COUNTY,
AND THE INCORPORATED CITIES

Prepared By

Los Angeles County Department of Public Works
Watershed Management Division, NPDES Section

APPENDIX TO THE WATERSHED MANAGEMENT AREA PLANS
(WMAPs)

STORMWATER QUALITY MANAGEMENT PLAN (SQMP)

February 01, 2001

- Public Information and Participation Program
- Development Construction Program
- Illicit Connection/Illicit Discharge Elimination Program
- Development Planning Program
- Public Agency Activities Program

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. xx-xxx
(NPDES NO. CASxxxxxx)

WASTE DISCHARGE REQUIREMENTS FOR MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES WITHIN THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT, COUNTY OF LOS ANGELES, AND THE CITIES OF LOS ANGELES COUNTY

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WASTE DISCHARGE REQUIREMENTS

FINDINGS

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter referred to as the Regional Board), finds:

Existing Permit and Report of Waste Discharge

1. The Los Angeles County Flood Control District, Los Angeles County, and 83 incorporated cities within the Los Angeles County Flood Control District (see Attachment A, List of Permittees), hereinafter referred to separately as Permittees and jointly as the Discharger, discharge or contribute to discharges of stormwater and urban runoff from municipal separate storm sewer systems (MS4s), also called storm drain systems, and water courses within the Los Angeles County Flood Control District into receiving waters of the Los Angeles Basin under countywide waste discharge requirements contained in Order No. 96-054 adopted by this Regional Board on July 15, 1996. That Order also serves as a National Pollutant Discharge Elimination System (NPDES) permit (CAS614001).

2. On February 1, 2001, the Discharger submitted a Report of Waste Discharge (ROWD) as an application for re-issuance of waste discharge requirements and an NPDES permit.

Nature of Discharges and Sources of Pollutants

3. Stormwater discharges consist of surface runoff generated from various land uses in all the hydrologic drainage basins that discharge into water bodies of the State. The quality of these discharges varies considerably and is affected by the hydrology, geology, land use, season, and sequence and duration of hydrologic events. The primary constituents of concern currently identified by the Los Angeles County Flood Control District 1994-2000 Integrated Receiving Water Impacts Report are cyanide, indicator bacteria, total dissolved solids, turbidity, total suspended solids, nutrients, total aluminum, dissolved cadmium, copper, lead, total mercury, nickel, zinc, bis(2-ethylhexyl)phthalate, polycyclic aromatic hydrocarbons (PAHs), Diazinon, and chlorpyrifos.

4. Certain pollutants present in stormwater and/or urban runoff may be contributed by activities which the Permittees cannot control. Examples of such pollutants and their respective sources are: PAHs which are products of internal combustion engine operation, nitrates from atmospheric deposition, heavy metals, lead from fuels, copper from brake pad wear, zinc from tire wear, dioxins as products of combustion, and bis (2-ethylhexyl) phthalate and mercury as resulting from atmospheric deposition, and natural-occurring minerals from local geology. However, Permittees can implement measures to attempt to reduce entry of these pollutants into stormwater.

5. These compounds can have damaging effects on both human health and aquatic ecosystems. In addition, the high volumes of stormwater discharged from MS4s in areas of urbanization can significantly impact aquatic ecosystems due to physical modifications

such as bank erosion and widening of channels. It is anticipated that, due to the nature of stormwater events (i.e., large volumes of water and high velocities) that there will be short-term, reversible impacts to beneficial uses that are not directly related to water quality.

6. Water quality assessments conducted by the Regional Board identified impairment, or threatened impairment, of beneficial uses of water bodies in the Los Angeles County Watersheds. These impairments include many of the pollutants of concern identified by the Los Angeles County Flood Control District 1994-2000 Integrated Receiving Water Impacts Report.

Permit Background

7. The Discharger has filed a Report of Waste Discharge (ROWD) and has applied for renewal of its waste discharge requirements and an NPDES permit to discharge wastes to surface waters. The ROWD includes the Watershed Management Area Plans (WMAPs), proposed permit and Performance Standards (PS).

8. The Stormwater Quality Management Plan (SQMP) refers to the five Model Programs collectively developed by the Permittees in accordance with provisions of the NPDES Permit Order Number 96-054. The SQMP will be included in the WMAPs. The Model Programs are the following:

Public Information and Participation
Development Construction
Illicit Connection/Illicit Discharge Elimination Program
Development Planning
Public Agency Activities

The monitoring program herein consists of land-use based monitoring combined with receiving water monitoring and modeling.

9. The Regional Board has reviewed the ROWD and has determined it to be complete under the reapplication policy of MS4s issued by the USEPA in July 1996. The Regional Board finds that the Permittee's proposed Storm Water Management Plan is acceptable and when fully implemented will be consistent with the statutory standard of Maximum Extent Practicable (MEP) and in compliance with the Federal Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act.

Coverage

10. The requirements in this Order cover all areas within the boundaries of the cities (see Attachment A) as well as unincorporated areas in Los Angeles County Flood Control District within the jurisdiction of the Regional Board. The Permittees serve a population of about 11.4 million [Reference: *2000 Census of Population and Housing,* Bureau of the Census, U.S.

Department of Commerce (1992)] in an area of approximately 3,100 square miles. Attachment B shows the map of the permitted area in Los Angeles County Flood Control District. The Regional Board will coordinate to implement programs that are consistent with the requirements of this Order.

11. Federal, state, regional or local entities within the Permittees' boundaries or in jurisdictions outside the Los Angeles County Flood Control District, and not currently named in this Order, may operate storm drain facilities and/or discharge stormwater to storm drains and watercourses covered by this Order. The Permittees may lack legal jurisdiction over these entities under state and federal constitutions. Consequently, the Regional Board recognizes that the Permittees will not be held responsible for such facilities and/or discharges. The Regional Board will coordinate with these facilities to implement programs that are consistent with the requirements of this Order.

12. Sources of discharges into receiving waters in the Los Angeles County Flood Control District but in jurisdictions outside its boundary include the following:

    a. About 34 square miles of unincorporated area in Ventura County drain into Malibu Creek, thence to Santa Monica Bay,

    b. About 9 square miles of the City of Thousand Oaks also drain into Malibu Creek, thence to Santa Monica Bay, and

    c. About 86 square miles of area in Orange County drain into Coyote Creek, thence into the San Gabriel River Watershed in the Los Angeles County Flood Control District.

    The Regional Board will ensure that stormwater management programs for the areas in Ventura County and the City of Thousand Oaks that drain into Santa Monica Bay are consistent with the requirements of this Order. The Regional Board will coordinate with the Santa Ana Regional Board so that stormwater management programs for the areas in Orange County that drain into Coyote Creek are consistent with the requirements of this Order.

13. This permit is intended to develop, achieve, and implement a timely, comprehensive, cost-effective stormwater pollution control program to minimize pollutants, to the maximum extent practicable, in stormwater discharges from the permitted areas in Los Angeles County Flood Control District to the waters of the United States.

Federal, State, and Regional Regulations

14. The Water Quality Act of 1987 added Section 402(p) to the Federal Clean Water Act (CWA). This section requires the U.S. Environmental Protection Agency (EPA) to establish regulations setting forth NPDES requirements for stormwater discharges. The first phase of these requirements was directed at municipal separate storm sewer systems (MS4)

serving a population of 100,000 or more and stormwater discharges associated with industrial activities, including construction activities. On November 16, 1990, EPA published these final regulations in the Federal Register under Part 122 Code of Federal Regulations. The second phase of these requirements covers other dischargers, including municipalities with a population of less than 100,000, for which the U.S. EPA Administrator or the State determines that the stormwater discharge contributes to a violation of a water quality standard, or is a significant contributor of pollutants to waters of the United States. U.S. EPA published the final regulations on the second phase on December 8, 1999 in the Federal Register.

15. The CWA allows the EPA to delegate its NPDES permitting authority to states with an approved environmental regulatory program. The State of California is a delegated State. The Porter-Cologne Water Quality Control Act (California Water Code) authorized the State Water Resources Control Board (State Board), through the Regional Boards, to regulate and control the discharge of pollutants into waters of the State and tributaries thereto.

16 Section 6217(g) of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) requires coastal states with approved coastal zone management programs to address non-point pollution impacting or threatening coastal water quality. CZARA addresses five sources of non-point pollution: agriculture, silviculture, urban, marinas, and hydromodification. This NPDES permit addresses the management measures required for the urban category, with the exception of septic systems. The Regional Board addresses septic systems through the administration of other programs.

17. The State Water Resources Control Board adopted a revised Water Quality Control Plan for Ocean Waters of California (Ocean Plan) on July 23, 1997. The Ocean Plan contains water quality objectives for the coastal waters of California.

18. The Regional Board adopted an updated Water Quality Control Plan (Basin Plan) for the Los Angeles Region on June 13, 1994, *'Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*, (1994).' The Basin Plan, which is incorporated in this Order by reference, specifies the beneficial uses of receiving waters and contains both narrative and numerical water quality objectives for the receiving waters in the Los Angeles County.

19. The Regional Board has implemented a Watershed Management Approach to address water quality protection in the region. The objective of the Watershed Management Approach is to provide a comprehensive and integrated strategy towards water resource protection, enhancement, and restoration while balancing economic and environmental impacts within a hydrologically defined drainage basin or watershed. It emphasizes cooperative relationships between regulatory agencies, the regulated community, environmental groups, and other stakeholders in the watershed to achieve the greatest environmental improvements with available resources.

20. To implement the Watershed Management Approach, as well as facilitate compliance with this Order, the Los Angeles County Flood Control District is divided into five Watershed Management Areas (WMAs) as follows:

a. Malibu Creek and Rural Santa Monica Bay WMA
b. Ballona Creek and Urban Santa Monica Bay WMA
c. Los Angeles River WMA
d. San Gabriel River WMA
e. Dominguez Channel/Los Angeles Harbor WMA

To further facilitate compliance with this Order, permittees may form sub-watershed groups within the WMA.

Attachment A, shows the list of Permittees under each WMA.

21. To facilitate compliance with federal regulation, the State Water Resources Control Board (State Board) has issued two statewide general NPDES permits: one for stormwater from industrial sites [NPDES No. CAS000001, General Industrial Activity Stormwater Permit (GIASP)] and the other for stormwater from construction sites [NPDES No. CAS000002, General Construction Activity Stormwater Permit (GCASP)]. The GCASP was reissued on August 19, 1999. The GIASP was reissued on April 17, 1997. Facilities discharging stormwater associated with industrial activities and construction projects with a disturbed area of five acres or more are required to obtain individual NPDES permits for stormwater discharges, or be covered by these statewide general permits by completing and filing a Notice of Intent (NOI) with the State Board. The USEPA guidance anticipates coordination of the state-administered programs for industrial and construction activities with the local agency program to reduce pollutants in stormwater discharges to the MS4.

22. The State Board, on October 28, 1968, adopted Resolution No. 68-16, "Maintaining High Quality Water" which established an anti-degradation policy for State and Regional Boards.

23. The State Board, on June 17, 1999, adopted Order No. WQ 99-05, which specifies standard receiving water limitations language to be included in all municipal stormwater permits issued by the State and Regional Boards.

24. California Water Code (CWC) Section 13263(a) requires that waste discharge requirements issued by the Regional Board shall implement any relevant water quality control plans that have been adopted; shall take into consideration the beneficial uses to be protected and the water quality objectives reasonably required for that purpose; other waste discharges; and, the need to prevent nuisance.

25. California Water Code Section 13370*et seq.* requires that waste discharge requirements issued by the Regional Boards comply with provisions of the Federal Clean Water Act and its amendments.

Other Findings

26. The Regional Board is the enforcing authority in the Los Angeles region for the two statewide general permits, described in Finding 21, which regulate discharges from industrial facilities and construction sites, and all NPDES storm water and non-storm water permits issued by the Regional Board. These industrial and construction sites are also regulated under local laws and regulations.

27. Studies indicate that facilities with paved surfaces subject to frequent motor vehicular traffic (such as parking lots and retail gasoline stations), or facilities which perform vehicle repair, maintenance, or fueling (such as retail gasoline outlets with service bays) are potential sources of pollutants of concern in storm water. [References: Pitt *et al.*,*Urban Storm Water Toxic Pollutants: Assessment, Sources, and Treatability*, Water Environment Res., 67, 260 (1995); *Results of Retail Gas Outlet and Commercial Parking Lot Storm Water Runoff Study*, Western States Petroleum Association and American Petroleum Institute, (1994); Action Plan Demonstration Project, Demonstration of Gasoline Fueling Station Best Management Practices, Final Report, County of Sacramento (1993).]

28. A review of industrial waste/pretreatment records in Los Angeles County Flood Control District on illicit discharges indicate that automotive service facilities and food service facilities sometimes discharge polluted washwaters to the MS4. The pollutants of concern in such washwaters include food waste, oil and grease, and toxic chemicals. Other storm water/industrial waste programs in California have reported similar observations.

29. The objective of this Order is to protect the beneficial uses of receiving waters in Los Angeles County Flood Control District. To meet this objective, this Order requires implementation of BMPs intended to reduce pollutants in storm water and urban runoff such that ultimately their discharge will neither cause violations of water quality objectives nor create conditions of nuisance in receiving waters.

30. The Regional Board recognizes the unique challenges to regulating storm water discharges through municipal storm sewer systems, including intermittent and variable nature of discharges, difficulties in monitoring, and limited physical control over the discharge, and that it will require adequate time to implement and evaluate the effectiveness of best management practices required in this Order and to determine whether they will adequately protect the receiving water.

31. The SQMP required in this Order builds upon the foundation established in Order No. 90-079, consists of the components recommended in the USEPA guidance manual, and was developed with the cooperation of representatives from the regulated community and environmental groups. The SQMP includes provisions that promote customized initiatives, both on a countywide and watershed basis, in developing and implementing cost-effective measures to minimize discharge of pollutants to the receiving water. The various

components of the SQMP, taken as a whole rather than individually, are expected to reduce pollutants in storm water and urban runoff to the maximum extent practicable.

32. The main focus of the SQMP is pollution prevention through education, public outreach, planning, and implementation of BMPs. Successful implementation of the provisions of the SQMP will require cooperation and coordination of all public agencies in each Permittee's organization, among Permittees, and the regulated community. To minimize cost, the Permittees are encouraged to utilize their existing organizational framework to implement the various activities required in this Order.

33. This Order provides the flexibility for the Permittees to petition the Regional Board Executive Officer to substitute a BMP or requirement under the SQMP with an alternative BMP, if they can provide information and documentation on the effectiveness of the alternative, equal to or greater than the prescribed BMP in meeting the objectives of this Order.

34. This order contemplates that the Permittees are responsible for considering potential stormwater impacts when making planning decisions. However, neither this order nor any of its requirements are intended to restrict or control local land use decision-making authority.

Public Process

35. The Regional Board has notified the Discharger and interested agencies and persons of its intent to issue waste discharge requirements for this discharge, and has provided them with an opportunity to submit their written view and recommendations.

36. The Regional Board, in a public hearing, heard and considered all comments pertaining to the discharge and to the tentative requirements.

37. This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) Permit, pursuant to Section 402 of the Federal Clean Water Act, or amendments thereto, and shall take effect 50 days from permit adoption provided the Regional Administrator of the EPA has no objections.

38. This Order may be modified or alternatively revoked or reissued prior to its expiration date, in accordance with the procedural requirements of the federal NPDES program, and the California Water Code for the issuance of waste discharge requirements.

IT IS HEREBY ORDERED that the Los Angeles County Flood Control District, Los Angeles County, and the Cities of Agoura Hills, Alhambra, Arcadia, Artesia, Azusa, Baldwin Park, Bell, Bellflower, Bell Gardens, Beverly Hills, Bradbury, Burbank, Calabasas, Carson, Cerritos, Claremont, Commerce, Compton, Covina, Cudahy, Culver City, Diamond Bar, Downey, Duarte, El Monte, El Segundo, Gardena, Glendale, Glendora, Hawaiian Gardens, Hawthorne, Hermosa Beach, Hidden Hills, Huntington Park, Industry, Inglewood, Irwindale, La Cañada Flintridge, La Habra Heights, Lakewood, La Mirada, La Puente, La Verne, Lawndale, Lomita,Los Angeles, Lynwood, Malibu, Manhattan Beach, Maywood, Monrovia, Montebello, Monterey Park, Norwalk, Palos Verdes Estates, Paramount, Pasadena, Pico Rivera, Pomona, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Rosemead, San Dimas, San Fernando, San Gabriel, San Marino, Santa Fe Springs, Santa Monica, Sierra Madre, Signal Hill, South El Monte, South Gate, South Pasadena, Temple City, Torrance, Vernon, Walnut, West Covina, West Hollywood, Westlake Village, and Whittier, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act, as amended, and regulations and guidelines adopted thereunder, shall comply with the following:

PART 1. DISCHARGE PROHIBITION

A. Each Permittee shall, within its jurisdiction, effectively prohibit non-stormwater discharges into the MS4 (storm drain systems) and watercourses, except where such discharges:

1. Are covered by a separate individual or general NPDES permit, or granted an exemption by the Regional Board, the Executive Officer, or the State Water Resources Control Board; or

2. Meet one of the conditions below:

   a. Not identified as a significant source of pollutants:

      1. Flows from riparian habitats or wetlands;
      2. Diverted stream flows;
      3. Natural springs;
      4. Rising ground waters;
      5. Uncontaminated ground water infiltration [as defined at 40 CFR 35.2005(20)];
      6. Discharges or flows from emergency fire fighting activities; or

   b. Not identified as a significant source of pollutants, subject to conditions:

      7. Landscape irrigation;
      8. Drinking water line flushing;

9. Discharges from potable water sources;
10. Foundation drains;
11. Grading drains;
12. Footing drains;
13. Emergency floor drain;
14. Non-profit car washing;
15. Street washing;
16. Wash water runoff from the cleaning of fire fighting vehicles;
17. Air conditioning condensate;
18. Water from crawl space pumps;
19. Reclaimed and potable irrigation water;
20. Dechlorinated swimming pool discharges;
21. Individual residential car washing;
22. Sidewalk washing;
23. Lake dewatering;
24. Wash water runoff of blood and other human tissues from the cleaning of accident sites or accidental spills.

If any of the above categories of non-stormwater discharges (Part I, A.2.b) are determined to be a significant source of pollutants by the Regional Board Executive Officer, the discharge need not be prohibited if the Permittee implements appropriate BMPs to ensure that the discharge will not be a significant source of pollutants.

The Permittee(s) may, for any of the above non-stormwater categories, require BMPs deemed necessary to ensure that the discharge will not be a significant source of pollutants.

c. The Regional Board Executive Officer may authorize the discharge of additional categories of non-stormwater upon presentation of evidence in accordance with Part 1.A.4., and may include other categories of non-stormwater discharges under this subsection.

3. Discharges originating from federal, state, or other facilities which the Discharger is pre-empted by law from regulating, or for which the Discharger has no authority to enforce the requirements of this Order.

4. A Permittee may identify and describe additional categories of non-storm water discharges to be considered by the Executive Officer for exemption from the Discharge Prohibitions. The criteria to be considered for a request for exemption include one or more of the following:

a. Documentation that the discharge is not a significant source

of pollutants to receiving waters or does not cause impairment of beneficial uses of receiving waters;

b. Special circumstances that have been defined in which the discharge has been found not to be a significant sources of pollutants to, or does not cause impairment of beneficial uses of receiving waters;

c. Specific BMPs, where determined feasible, that have been identified to reduce pollutants in the discharge to the maximum extent practicable and minimize adverse impacts of such source, with an implementation schedule; or

d. Established procedures to ensure BMP implementation, including an implementation schedule, performance standards, monitoring and record keeping.

The exemption request for additional non-storm water discharges may be submitted to the Executive Officer, beginning with the first Annual Report. The exemption becomes effective upon approval by the Executive Officer.

If a presentation is made in writing with supporting documentation by a Permittee to the Executive Officer, and if the Executive Officer does not respond in writing within 60 days, then addition to the categorical exempt discharge may be considered approved.

Compliance with this Order through timely development and implementation of programs described herein shall constitute compliance with this prohibition.

PART 2. RECEIVING WATER LIMITATIONS

A. Discharges from the MS4 that scientific studies have demonstrated will cause or contribute to the exceedance of water quality objectives are prohibited.

B. Discharges from the MS4 of stormwater, or non-stormwater, for which a Discharger is responsible, shall not cause nuisance, continuing or recurring impairment of beneficial uses, or exceedances of water quality objectives in the receiving waters.

C. The Discharger shall comply with Parts A and B of this section through timely implementation of control measures and other actions to reduce pollutants to the maximum extent possible in the discharges in accordance with the SQMP and other requirements of this permit, including any modifications. The SQMP shall be designed to achieve compliance with receiving water limitations. If exceedance(s)

of applicable water quality objectives persist, notwithstanding implementation of the SQMP and other requirements of this permit, the Permittee(s) shall assure compliance with discharge prohibitions and receiving water limitations by complying with the following procedure:

1. Upon a determination by either the Permittee(s) or the Regional Board, that discharges are causing or contributing to an exceedance of an applicable water quality objectives, the Permittee(s) shall promptly notify and thereafter submit a report to the Regional Board that describes BMPs that are currently being implemented, and additional BMPs that will be implemented, to prevent or reduce any pollutants that are causing or contributing to the exceedances of water quality objectives. This report may be included with the Annual Stormwater Report and Assessment, unless the Regional Board directs an earlier submittal. The report shall include a reasonable implementation schedule of necessary additional BMPs. The Regional Board may require modifications to the report within 30 days, in consultation with the Discharger.

2. Submit any modifications to the report required by the Regional Board within 90 days of notification.

3. Within 90 days following the approval of the report, the Permittee(s) shall revise the SQMP and monitoring program to incorporate the approved, modified suite of BMPs, implementation schedule, and any additional monitoring required.

4. Implement the revised SQMP and monitoring program according to the approved schedule.

D. So long as the Permittee(s) complies with the procedures set forth in Part C above and is implementing the revised SQMP, the Permittee(s) does not have to repeat the procedure for continuing or recurring exceedances of the same water quality standard(s) unless directed by the Regional Board to develop additional BMPs.

E. Timely and complete implementation by a Permittee(s) of the stormwater management programs prescribed in this Order shall satisfy the requirements of this section and constitute compliance with receiving water limitations.

PART 3. STORMWATER QUALITY MANAGEMENT PLAN IMPLEMENTATION, MONITORING, AND REPORTING

A. Responsibilities of the Principal Permittee

The Principal Permittee will coordinate and facilitate activities necessary to comply with the requirements of this Order, but is not responsible for ensuring compliance

of any individual Permittee. The Los Angeles County Flood Control District is hereby designated as the Principal Permittee, and as such shall:

1. Coordinate permit activities among Permittees and negotiate NPDES requirements with the Regional Board.

   All Permittees will be given the opportunity to have an active role in and provide input for the negotiation of permit requirements. However, formal negotiation with the Regional Board will be conducted by the Principal Permittee and the watershed Executive Advisory Committee (EAC) representative(s).

2. Provide personnel and fiscal resources for the necessary update of the WMAPs and their components;

3. Convene the Watershed Management Committees (WMCs) constituted pursuant to Part C, below, upon designation of representatives;

4. Provide technical and administrative support for committees that will be organized to implement the SQMP and WMAPs;

5. Implement the Countywide Monitoring Program required in this Order;

6. Provide personnel and fiscal resources for the preparation and submittal to the Regional Board of annual reports and summaries of other reports required under the SQMP; and

7. Comply with the "Responsibilities of the Permittees" in Part B, below;

B. Responsibilities of the Permittees

Each Permittee is only responsible for the implementation of the appropriate stormwater management program developed pursuant to the requirements of this Order, and not for the implementation of the provisions applicable to the Principal Permittee or other Permittees. A Permittee is required to comply only with the requirements of this Order applicable to discharges which originate from places within its boundaries over which it has authority to enforce the requirements of this Order. Each Permittee shall, within its geographic jurisdiction:

1. Comply with the requirements of the SQMP and its amendments;

2. Coordinate among its internal departments and agencies as appropriate, to facilitate the implementation of the requirements of the SQMP applicable to such Permittee in an efficient and cost-effective manner;

3. Participate in the update, if necessary, of the WMAPs;

4. Appoint a technically knowledgeable representative to the appropriate WMC;

5. Implement the SQMP upon approval by the Executive Officer; and,

6. Work with other agencies, to the extent necessary, and submit a report to the Executive Officer on recommendations to resolve any conflicts identified between the provisions of the SQMP and WMAPs and the requirements of other regulatory agencies, if the Permitee considers it necessary.

C. Watershed Management Committees (WMCs)

1. Each WMC shall be comprised of a voting representative from each Permittee in the Watershed Management Area (WMA).

2. The WMC's chair and secretary shall be chosen by the WMC upon permit adoption and on an annual basis, thereafter. In the absence of volunteer Permittee(s) for the positions, the Principal Permittee shall assume those roles until the WMC chooses members of the committee for the positions.

3. Each WMC shall:

a. Facilitate cooperation and exchange of information among Permittees;

b. Establish goals and objectives for the WMA;

c. Prioritize pollution control efforts based on beneficial use impairment;

d. Develop and/or update, on an annual basis, priority project list for the WMA;

e. Assess the effectiveness of, prepare revisions for, and recommend appropriate changes to the WMAP including the SQMP;

f. Conduct joint WMC meetings at least four times per year and, as necessary.

g. Identify, if needed, as part of the Industrial/Commercial Source Identification program, additional SIC industrial/commercial groups selected as priority to be included in the database described in the SQMP. The following criteria shall be considered in the identification

process:

i. Extent of exposure of the industrial/commerical activity to stormwater;

ii. Types and quality of non-stormwater discharges;

iii. Similarity of industrial/commercial activity to industrial activity regulated under the USEPA Phase I facilities;

iv. Types of chemicals and wastes generated that can contaminate stormwater;

v. Existence of duplicate regulatory programs with other agencies that emphasize waste management and minimize exposure of the industrial/commercial activity to stormwater;

vi. Number of facilities in the WMA;

vii. Professional understanding of the industrial/commercial sector's waste management practices;

viii. Experience of local agency industrial waste inspection programs; and

ix. Any other information that indicates a significant potential for contamination of stormwater.

D. Executive Advisory Committee (EAC)

1. The EAC shall be attended by one representative from Malibu Creek and by two representatives from each of the other watersheds, along with representatives from the City of Los Angeles, and the Los Angeles County Flood Control District.

2. The Committee shall facilitate program compliance in each watershed and enhance consistency among permittees.

E. General Requirements

1. The Permittees shall, at a minimum implement the elements of the SQMP that are consistent with the terms of this permit.

Additionally, modifications to the SQMP made during the term of the permit including those made in accordance with Part 3.B. of this permit shall be implemented.

2. The SQMP shall, at a minimum, comply with applicable requirements of 40 CFR 122.26(d)(2). The SQMP shall be implemented so as to reduce the discharges of pollutants in stormwater to the maximum extent practicable.

3. Each Permittee shall be responsible for implementation of the relevant portions of the SQMP within its jurisdiction. The Principal Permittee shall be responsible for program coordination as described in Part 3.A,as well as, compliance with the relevant portions of the permit within its jurisdiction.

F. WMAP Modifications

The initial SQMP, as delineated in the WMAPs may need to be modified, revised, or amended periodically to respond to changed conditions and to incorporate more effective approaches to pollutant controls. Minor changes may be made at the direction of the Executive Officer. Minor changes requested by the Permittees shall become effective upon written approval of the Executive Officer. If proposed changes involve a major revision in the overall scope of the program, such changes must be approved by the Regional Board as amendments to this Order.

Modifications to the WMAP may be made in the following manners:

1. The Regional Board Executive Officer may approve changes to the WMAPs:

   a. Upon petition by the Permittee(s) or interested parties, and after providing for, and considering public comments;

   b. Upon a Permittee petition to the Executive Officer to:

      i. Substitute any Best Management Practice (BMP) or Program identified in the SQMP, if the Permittee can document that:

         (a) The proposed alternative BMP or program will meet or exceed the objective of the original BMP or program in the reduction of stormwater pollutants; or

         (b) The fiscal burden of the original BMP or program is substantially greater than the proposed alternative and does not achieve a substantially greater improvement in stormwater quality; and,

(c) The proposed alternative BMP or program will be implemented within a similar period of time.

ii. Eliminate any BMP or program identified in the SQMP, if the Permittee can document that:

(a) The BMP or program is not technically feasible and no substitute is available; or

(b) The cost of implementation outweighs the pollution control benefits; or

(c) The BMP or program is not applicable in the Permittee's jurisdiction.

The Executive Officer may approve or disapprove the petition in accordance with Part 6 D; or,

2. The Permittee(s) shall modify the WMAPs at the direction of the Regional Board Executive Officer, to incorporate applicable regional provisions approved by the Regional Board Executive Officer in plans for watersheds shared by the Permittee(s) with other MS4 programs.

G. Upon Administrative Review

The administrative review process formalizes the procedure for review and acceptance of reports and documents submitted to the Regional Board under this Order. In addition, it provides a method to resolve any differences in compliance expectations between the Regional Board and Permittees, prior to initiating enforcement action.

1. Stormwater program documents, including progress reports, guidelines, checklists, BMPs, databases, program summaries, and implementation and compliance schedules, developed by the Principal Permittee or a Permittee under the provisions of this Order, shall be submitted to the Executive Officer of the Regional Board, where required for approval. The process is as follows:

a. For documents that require Executive Officer's approval, the Executive Officer will notify the Principal Permittee and/or Permittee of the results of the review and approval or disapproval within 120 days. If the Executive Officer has not responded within 120 days following submittal, the Permittee shall notify the Regional Board of

its intent to implement the program components as submitted. If after 10 days the Executive Officer has not responded, the Permittee will implement the submitted program and the Executive Officer may not make modifications; and,

b. Documents that require formal Regional Board approval will undergo public review and comment before Board consideration at a public meeting.

2. If the Executive Officer determines that a Permittee's stormwater program is insufficient to meet the provisions of this Order, the Executive Officer shall send a "Notice of Intent to Meet and Confer (NIMC)" to the Permittee, with specific information in support of the determination. The NIMC shall include a timeframe by which the Permittee must meet with Regional Board staff. The processes are as follows:

a. The Permittee, upon receipt of an NIMC, shall meet and confer with Regional Board staff to demonstrate that the Permittee's program is sufficient to meet the requirements of this Order; and, if not, seek clarification on the steps to be taken to completely meet the provisions of this Order. The meet and confer period will conclude with either a written notice of program sufficiency from the Excutive Officer to the Permittee, or the submittal to and acceptance by the Executive Officer of a written "Stormwater Program Compliance Amendment (SPCA)", prepared by the Permittee, which shall include implementation deadlines. The Executive Officer may terminate the meet and confer period after a reasonable period due to a lack of progress on issues and may order submittal of the SPCA by a specified date. Failure to submit an acceptable SPCA by the specified date shall constitute a violation of this Order;

b. The Executive Officer will approve or reject the submitted SPCA or an amended SPCA within 120 days. Rejection of an SPCA by the Executive Officer shall state the reasons for the failure to approve the SPCA. A Permittee that receives a rejection of an SPCA shall have 120 days to remedy the specified deficiency and resubmit the SPCA. If the Executive Officer has not responded within 120 days following submittal of an SPCA, the Permittee shall notify the Executive Officer in writing following the notification of its intent to implement the SPCA as submitted. If after 10 days the Executive Officer has not responded, the Permittee will implement the submitted SPCA and the Executive Officer may not make modifications;

c. The Permittee shall comply with the terms of the SPCA. The

Permittee shall submit reports to the Executive Officer on the progress made under the SPCA. The frequency of the progress report submittal shall be quarterly unless otherwise prescribed by the Executive Officer. Failure to comply with the terms and conditions of the SPCA shall constitute a violation of this Order and shall be a cause for enforcement action by the Regional Board; and,

d. The Executive Officer shall not take enforcement action against a Permittee until the Executive Officer has notified the Permittee in writing that the Administrative Review Process has been exhausted and that the Executive Officer has determined that a violation exists and it warrants enforcement.

H. Legal Authority

1. Permittees shall possess the necessary legal authority to prohibit non-stormwater discharges, to the maximum extent practicable, to the storm drain system, including, but not limited to:

a. A prohibition on illicit discharges and illicit connections and a requirement for removal of illicit connections;

i. Prohibit the discharge of wash waters to the MS4 from the cleaning of gas stations, auto repair garages, or other types of automotive service facilities;

ii. Prohibit the discharge of runoff to the MS4 from mobile auto washing, steam cleaning, mobile carpet cleaning, and other such mobile commercial and industrial operations;

iii. Prohibit the discharge of runoff to the MS4 from areas where repair of machinery and equipment which are visibly leaking oil, fluid or antifreeze, is undertaken;

iv. Prohibit the discharge of runoff to the MS4 from storage areas of materials containing grease, oil, or other hazardous substances, and uncovered receptacles containing hazardous materials, unless such containers are new and unopened with a visibly clean exterior;

v. Prohibit the discharge of chlorinated swimming pool water and filter backwash to the MS4;

vi. Prohibit the discharge of runoff from the washing of toxic

materials to the MS4;

vii. Prohibit washing impervious surfaces in industrial/commercial areas that results in a discharge of runoff to the MS4; and

viii. Prohibit the discharge from washing out concrete trucks, pumps, tools, and equipment to the MS4.

b. Control spills, dumping, or disposal of materials into the MS4, such as;

i. Litter, landscape debris and construction debris;

ii. Any state or federally banned pesticide, fungicide or herbicide;

iii. Food wastes; and

iv. Fuel and chemical wastes, animal wastes, garbage, batteries, and other materials that have potential adverse impacts on water quality.

c. A requirement for compliance with conditions in ordinances, permits, contracts, or orders; and,

d. The ability to carry out all inspection, surveillance and monitoring procedures, within the Permitttee's legal jurisdiction, necessary to determine compliance and non-compliance with permit conditions, including the prohibition of illicit discharges to the MS4.

I. Annual Stormwater Program Report, Assessment, and Budget Summary

1. The Discharger shall submit, by October 15 of each year beginning the Year 2002, an Annual Stormwater Program Report, Assessment, and Budget Summary documenting the status of the general program and individual tasks contained in the WMAPs, in accordance with the requirements identified in the Monitoring and Reporting Program Part I.A of this order. The Annual Stormwater Program Report, Assessment, and Budget Summary shall cover the previous fiscal year from July 1 through June 30, and shall include the information necessary to assess the Discharger's compliance status relative to this Order, and the effectiveness of implementation of permit requirements on stormwater quality. The Annual Stormwater Program Report, Assessment, and Budget Summary shall include any proposed changes to the WMAPs.

2. Stormwater Management Program Budget

a. The Discharger shall prepare annually a budget summary on resources applied to the stormwater management program using the form attached (Attachment C). This budget summary shall include an annual summary identifying the stormwater budget for the following year, using estimated percentages and written explanations where necessary, for the specific categories noted below:

i. Program management
ii. Illicit connection/illicit discharge
iii. Development planning/development construction
iv. Public Agency Activities
v. Public Information and Participation
vi. Monitoring Program
vii. Other

Permittees, in addition to the budget summary, may report supplemental dedicated budgets, if any, for the same categories.

J. Stormwater Quality Monitoring Report

1. The Principal Permittee shall submit a Stormwater Quality Monitoring Report on October 15, 2002 and annually on October 15 thereafter, in accordance with the requirements identified in the Monitoring and Reporting Program Part I.B of this order. The report shall include:

a. Status of implementation of the stormwater quality monitoring program as described in the attached Monitoring and Reporting Program;

b. Results of the stormwater quality monitoring program: and

c. A general interpretation of the significance of the results, to the extent that data allows.

K. Stormwater Quality Monitoring Program Modifications

1. The Regional Board Executive Officer or the Regional Board consistent with 40 CFR 122.41 may approve changes to the Los Angeles County Flood Control District Stormwater Quality Monitoring Program, after providing the opportunity for public comment, either:

a. By petition of the Permittee or by petition of interested parties, after the submittal of the Annual Stormwater Quality Monitoring Program Report. Such petition shall be filed not later than 60 days after the Annual Monitoring Program Report submittal date; or

b. As deemed necessary by the Regional Board Executive Officer following notice to the Permittee.

PART 4. SPECIAL PROVISIONS

Requirements of the permit shall take effect 60 days from permit adoption provided the US EPA Regional Administrator has no objections unless new permit requirements require additional resources and budgeting, wherein effective date will be 90 days after the next budget cycle.

Implementation Plans for any future watershed based requirement modifications, will be formulated and added to the SQMP at that time.

All requirements listed in the SQMP are to be applied. The following special provisions were either extracted from the SQMP or are additional requirements and are only presented hereafter for emphasis because of their importance.

A. Public Information and Participation

1. Programs for the General Public

a. The 888-CLEAN-LA hotline will serve as the general public reporting contact for reporting clogged catch basin inlets and illicit discharges/dumping, and general stormwater management information. Each Permittee may establish its own hotline if preferred. Permittees shall include this information, updated when necessary, in public information, and the government pages of the telephone book as they are developed/published.

b. Permittees shall mark storm drain inlets with a legible "no dumping" message. In addition, signs with language prohibiting illegal dumping must be posted at designated public access points to creeks, other relevant water bodies, and channels under Permittee's jurisdiction.

c. Each Permittee shall conduct educational activities within its jurisdiction and participate in countywide events to the extent possible.

d. Each Permittee shall distribute outreach materials to the general public and school children at appropriate public counters and events. Outreach material shall include information such as proper disposal of litter, green waste, and pet waste, proper vehicle maintenance techniques, proper lawn care, and water conservation practices.

2 Programs for Industrial/Commercial Businesses

a. Permittees shall implement an industrial/commercial educational site

visit program.

b. Permittees shall visit automotive service and food service facilities as outlined in the SQMP in its jurisdiction once every two years. During site visits, Permittees shall:

i. Consult with a representative of the facility to explain applicable stormwater regulations;

ii. Distribute and discuss applicable BMP and educational materials; and,

iii. Conduct a site walk-through to verify for, at a minimum, evidence of BMP implementation.

c. Permittees shall revisit automotive and food service facilities where evidence of illicit discharge is found within six months of the date of the initial visit. If necessary, Permittees will begin enforcement action to remove sources of illicit discharges.

d. Based on Pollutants of Concern source identification, additional target businesses may be identified to be included in the site visit program. Each Permittee shall visit a maximum of 125 such businesses twice during the term of this permit. Permittees shall report on the types and proposed actions to be taken in regard to the additional target businesses in annual reports.

e. Permittees shall provide an annual update of the visited automotive service, food service, and other targeted facilities to the Regional Board in the annual report. The database shall include at a minimum: facility name, site address, applicable SIC code(s), and NPDES stormwater permit coverage.

f. Permittees shall train their employees in targeted positions (whose jobs or activities directly affect stormwater quality, or those who respond to questions from the public), including inspection staff, on the requirements of the SQMP within one year from the date of the permit adoption, and annually thereafter, as necessary.

B. Programs for Development Planning

1. The Discharger shall implement the approved Standard Urban Stormwater Mitigation Plan (SUSMP) (See SQMP, Development Planning). The SUSMP addresses conditions and requirements for discretionary development and

redevelopment projects. Appropriate elements of the SUSMP will be included as project requirements.

2. Permittees shall make appropriate modifications to their internal planning procedures for preparing/reviewing CEQA documents, and for linking stormwater quality mitigation conditions to legal discretionary project approvals.

3. Permittees shall train their employees in targeted positions (whose jobs or activities are engaged in development planning) on the requirements of the SUSMP within one year from the date of the permit adoption, and annually thereafter, as necessary.

4. The Permittee shall include watershed and stormwater management considerations in the appropriate elements of the Permittee's General Plan whenever these elements are significantly rewritten. Appropriate elements include, but are not limited to, water quality protection, development goals and policies, open space goals and policies, preservation of and integration with natural features, and water conservation policies.

C. Programs for Development Construction

1. Permittees shall require the preparation, submittal, and implementation of a Local Stormwater Pollution Prevention Plan (Local SWPPP) prior to issuance of a grading permit for priority construction projects unless the project falls under the requirements of the State's General Construction Activities Permit.

2. Permittees shall prepare and implement a Local SWPPP on Permittee's construction projects, as required in Part 4.C.1.

3. The Local SWPPP shall include appropriate construction site BMPs selected from documents such as the California Stormwater BMP Handbook, the Caltrans Stormwater Quality Handbook, EPA database and American Society of Civil Engineers (ASCE) database. In addition, Permittees shall ensure the following minimum requirements are met, to the maximum extent practicable, at construction sites regardless of size:

   a. Sediments generated on the project site shall be retained using structural drainage controls;

   b. Construction-related materials, wastes, spills, or residues shall be retained on project sites:

   c. Non-stormwater runoff from equipment and vehicle washing and any

other activity shall be contained at project sites;

d. Erosion from slopes and channels will be minimized, by implementing BMPs, including, but not limited to, limiting grading scheduled during the wet season, inspecting graded areas during rain events, planting and maintaining of vegetation on slopes, and covering slopes susceptible to erosion.

4. Local SWPPPs must include the rationale used for selecting or rejecting BMPs. The project architect, engineer of record, or authorized qualified designee, must sign a statement on the submitted Local SWPPP to the effect:

"As the architect/engineer of record, I have selected appropriate BMPs to effectively minimize the negative impacts of this project's construction activities on stormwater quality. The project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activities."

The landowner shall sign a statement to the effect:

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/or inaccurate information, failing to update the Local SWPPP to reflect correct conditions, or failing to properly and/or adequately implement the Local SWPPP may result in revocation of grading and/or other permits or other sanctions provided by law."

The Local SWPPP certification shall be signed by the landowner as follows:

i. For a corporation: by a responsible corporate officer which means (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of the construction activity if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

ii. For a partnership or sole proprietorship: by a general partner or the proprietor; or

iii. For a municipality or other public agency: by an elected official, a ranking management official (e.g., County Administrative Officer, City Manager, Director of Public Works, District Engineer, City Engineer, District Manager), or the manager of the construction activity if authority to sign stormwater quality plans has been assigned or delegated to the manager in accordance with established agency policy.

5. Permittees shall require proof of filing a Notice of Intent for coverage under the State General Construction Activity Stormwater Permit and a State SWPPP prior to issuing a grading permit for all projects requiring coverage under the state general permit.

6. Permittees shall inspect sites with Local SWPPP and Wet Weather Erosion Control Plan (WWECP) for stormwater quality requirements during routine inspection a minimum of once during the wet season. For inspected sites that have not adequately implemented their local SWPPP, a follow-up inspection to ensure compliance will take place within 2 weeks.

7. Permittees shall discuss stormwater controls and provide stormwater control educational materials targeted to the construction community when requested by the public and/or inspectors.

8. Permittees shall train employees in targeted positions (whose jobs or activities are engaged in construction activities including construction inspection staff) on the requirements of the SQMP within one year from the date of adoption of the permit, and annually thereafter, as necessary.

D. Public Agency Activities

Corporation Yards

1. Permittees shall prohibit the discharge of untreated stormwater runoff to the storm drain system from toxic or hazardous material storage areas no later than one year from the adoption of the permit, where practicable.

2. Permittees shall prohibit the discharge of untreated stormwater runoff to the storm drain system from new fueling areas and new repair/maintenance areas for vehicle maintenance and repair facilities no later than one year from the adoption of the permit.

A public vehicle maintenance or material storage facility is a Permittee-owned or operated facility or a portion thereof that:

a. Conducts industrial activity, operates equipment, handles materials, and provides services similar to Federal Phase 1 facilities;

b. Performs fleet vehicle maintenance on ten or more vehicles per day including repair, maintenance, washing, and fueling;

c. Performs maintenance and/or repair of heavy industrial machinery/equipment; and

d. Stores chemicals, raw materials, or waste materials in quantities that require a hazardous materials business plan or a Spill Prevention, Control, and Counter-measures (SPCC) plan.

3. Permittees shall require that all vehicle/equipment wash areas must be self-contained; or equipped with a clarifier, or other pretreatment facility properly connected to a sanitary sewer. The provision does not apply to fire fighting vehicles.

Other Facilities

4. The Permittees shall perform maintenance on the MS4 as outlined in the SQMP.

5. Permittees shall conduct street sweeping on curbed public streets in their permitted area according to the following schedule:

   a. Average once every 4 weeks with a minimum of 12 times per year; and

   b. Where feasible, more frequently in areas generating significant refuse.

6. Permittees shall avoid street saw cutting and paving during storm events or if the runoff is sufficient to carry the saw cutting or paving debris (except during emergency conditions).

7. Permittees shall prohibit discharge of polluted stormwater runoff from temporary or permanent street maintenance stockpiled material and waste storage areas.

8. There shall be no application of pesticides or fertilizers during a rain event that results in runoff.

   Permittees shall ensure that staff applying pesticides are either certified by the California Department of Food and Agriculture, or are under the direct supervision of a certified pesticide applicator.

9. Permittees shall train their employees in targeted positions (whose jobs and activities affect stormwater quality) regarding the requirements of the SQMP within one year from the adoption of the permit, and annually thereafter, as necessary.

10. Permittees shall conduct trash collection along, or in improved open channels within their jurisdiction.

11. The Discharger shall encourage the establishment of voluntary programs for the collection of trash in natural stream channels.

E. Programs for Illicit Connections and Illicit Discharges

1. Refer to Part 1.A.2. for conditions of illicit discharges.

2. Permittees shall investigate the cause, determine the nature and estimated amount of reported illicit discharge/dumping incidents, and refer documented non-stormwater discharges/connections or dumping to an appropriate agency for investigation, containment and cleanup. If the source of the illicit discharge has been identified, appropriate action including issuance of an enforcement order that will result in cessation of the illicit discharge, and/or elimination of the illicit connection, shall take place after the Permittee gains knowledge of the discharge/connection.

3. Each Permitee shall train its employees in targeted positions, as defined by the SQMP, on how to identify and report illicit discharges within one year from the date of the permit adoption, and annually thereafter, as necessary.

4. Automotive, food facility, construction and Permittee facility site visits shall include distribution of educational material that describes illicit discharges and provides a contact number for reporting illicit discharges.

5. New information developed for Phase I industrial facility educational material shall include information describing illicit discharges. The information shall include: types of discharges prohibited, how to prevent illicit discharges, what to do in the event of an illicit discharge, and the array of enforcement action the facility may be subjected to, including penalties that can be assessed.

PART 5. DEFINITIONS

40 CFR: Title 40 of the Code of Federal Regulations, which is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government.

Adverse Impact: A detrimental effect upon water quality or beneficial uses caused by a discharge or loading of a pollutant or pollutants. See also "Impact".

Authorized Discharge: Any discharge that is authorized pursuant to an NPDES permit or meets the conditions set forth in this Order.

BMP: See Best Management Practice

Basin Plan: Refers to the Water Quality Control Plan, Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, adopted by the Regional Board on June 13, 1994 and subsequent amendments.

Beneficial Uses: Existing or potential uses of receiving waters in the permit area as designated by the Regional Board in the Basin Plan.

BAT/BCT Criteria: Treatment-based standards for reducing the discharge of pollutants, as defined in 40 CFR subchapter N, for specific categories of industrial facilities subject to stormwater effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards. Effluent limitations have been defined in 40 CFR for the reduction of toxic pollutants using Best Available Technology Economically Achievable (BAT) and for the reduction of conventional pollutants using Best Conventional Pollutant Control Technology (BCT).

Best Management Practice (BMP): Activities, practices, facilities, and/or procedures that when implemented to their maximum efficiency will prevent or reduce pollutants in discharges. Examples of BMPs may include public education and outreach, proper planning of development projects, proper clean out of catch basin inlets, and proper sludge or waste handling and disposal, among others.

Bioaccumulate: The build up of a substance in the tissues of an organism to a higher concentration than in the surrounding environment, generally as a result of the organism's ingestion and internal storage of the substance over time.

Biostimulatory: An agent, action, or condition that arouses, elicits or accelerates physiological or organic activity. For example, the introduction of excessive nutrients to an aquatic system has a biostimulatory effect which manifests itself as excessive growth of algae in the aquatic systems. As the algae decomposes, dissolved oxygen in the water column is depleted, potentially leading to excessively low dissolved oxygen levels which can lead to suffocation of aquatic life, i.e., fish kills.

CFR: See Code of Federal Regulations.

CRWQCB: The California Regional Water Quality Control Board, Los Angeles Region. See also Regional Board.

California Storm Water Best Management Practice Handbooks: The technical manuals prepared under direction of the Storm Water Quality Task Force, representing California members of the American Public Works Association (APWA). Comprising three volumes—Municipal, Industrial, and Construction—they provide guidance for selecting BMPs to reduce pollutants in storm water discharges. These manuals are currently available from Blue Print Service, 1700 Jefferson Street, Oakland, CA 94612, (510) 444-6771 or Fax (510) 444-1262.

Clean Water Act (CWA): The Federal Water Pollution Control Act enacted in 1972 by Public Law 92-500 and amended by the Water Quality Act of 1987. The Clean Water Act prohibits the discharge of pollutants to Waters of the United States unless said discharge is in accordance with an NPDES permit. The 1987 amendments include guidelines for regulating municipal, industrial, and construction stormwater discharges under the NPDES program.

Code of Federal Regulations: A codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government.

Construction Activity: Clearing, grading, or excavation that results in soil disturbance. Construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility, nor does it include emergency construction activities required to immediately protect public health and safety.

Control: To minimize, reduce or eliminate by technological, legal, contractual or other means, the discharge of pollutants from an activity or activities.

Corporation Yards: Any Permittee-owned and/or operated facility that is: used for vehicle or equipment maintenance, repair, washing, or fueling; and/or is required to prepare a hazardous materials business plan.

Dechlorinated Swimming Pool Discharges: Swimming pool discharges which have no measurable chlorine and do not contain any detergents, wastes, or additional chemicals not typically found in swimming pool water. The term swimming pool discharges does not include swimming pool filter backwash.

Discharge: Any release, spill, leak, pump, flow, escape, dumping, or disposal of any liquid, semi-solid or solid substance.

Discharger: A joint reference to the Los Angeles County Flood Control District and 83 incorporated cities within the County covered by this permit.

Disposal: Affirmative act in the placement of wastes or other materials to be thrown out or thrown away.

Disturbed Area: Area altered as a result of clearing, grading, and/or excavation of earth.

Do-it-yourselfers: Any person or persons who repair or maintain their own vehicle(s) and/or home(s).

Effectiveness: A direct or indirect measure or indicator of how well a program, plan, or best management practice achieves its intended purpose. Measures or indicators of effectiveness include, but are not limited to, detailed accounting of program accomplishments, funds expended, staff hours utilized, field surveys, amount of pollutants reduced, biosurveys, and quantitative data from water quality and sediment sampling.

Erosion: The wearing away of land surface primarily by wind or water. Erosion occurs naturally as a result

of weather or runoff but can be intensified by clearing, grading, or excavation of the land surface.

Exceedance: Concentrations found above the standard in comparison.

Executive Advisory Committee (EAC): A committee composed of representatives of the Los Angeles County Flood Control District, the City of Los Angeles, and the five Watershed Management Areas.

Executive Officer: The Executive Officer of the California Regional Water Quality Control Board, Los Angeles Region, or an authorized representative.

Food Distribution Industry: Establishments primarily engaged in the warehousing and storage of perishable goods under refrigeration described by SIC 4222, and establishments primarily engaged in retail selling of food for home preparation and consumption described by SIC Major Group 54.

Food Service Industry: Establishments primarily engaged in the retail sale of prepared food and drinks for on-premise consumption or immediate consumption described by SIC 5812

GCASP: See General Construction Activity Storm Water Discharge Permit.

GIASP: See General Industrial Activity Storm Water Discharge Permit.

General Construction Activity Storm Water Discharge Permit (GCASP). The NPDES permit adopted by the State Water Resources Control Board which authorizes the discharge of stormwater under certain conditions.

General Industrial Activity Storm Water Discharge Permit (GIASP). The NPDES permit adopted by the State Water Resources Control Board which authorizes the discharge of stormwater under certain conditions.

Good Housekeeping Practice: A common practice related to the storage, use, or cleanup of materials, performed in a manner that minimizes the discharge of pollutants. Examples include purchasing only the quantity of materials to be used at a given time, use of alternative and less harmful products, cleaning up spills and leaks, and storing materials in a manner that will contain any leaks or spills.

Hazardous Material: Any material defined as hazardous by Chapter 6.95 of the California Health and Safety Code.

Hazardous Substance: Any substance designated pursuant to 40 CFR 302. This also includes unlisted hazardous substances which is a solid waste, as defined in 40 CFR 261.2, which is not excluded from regulation as a hazardous waste under 40 CFR 261 4(b), is a hazardous substance under section 101(14) of the CWA if it exhibits any of the characteristics identified in 40 CFR 261.20 through 261.24.
Examples of hazardous substances include any substance or chemical product for which one or more of the following applies:

- A material safety data sheet (MSDS) is required
- The substance is listed as radioactive by the Nuclear Regulatory Commission
- The substance is listed as hazardous by the U.S. Department of Transportation
- The material is listed in Labor Code §6382(b).

Hazardous Waste: A 'Hazardous Substance' or 'Hazardous Material' which is to be discharged, discarded,

recycled, or processed.

IPM: See Integrated Pest Management.

Illicit Connection: Any human-made conveyance that is connected to the storm drain system without a permit, excluding roof-drains and other similar type connections. Examples include channels, pipelines, conduits, inlets, or outlets that are connected directly to the storm drain system.

Illicit Discharge: Any discharge to the storm drain system that is prohibited under local, state or federal statutes, ordinances, codes or regulations. This includes all non-stormwater discharges except discharges pursuant to an NPDES permit and discharges that are exempted or conditionally exempted in accordance with Section II of this Order.

Illicit Disposal: Any disposal, either intentionally or unintentionally, of material(s) or waste(s) that can pollute stormwater or urban runoff.

Impact: Any actual or potential effect caused either directly or indirectly by the discharge of pollutants.

Impervious Surface: Surface that prevents or significantly reduces the entry of water into the underlying soil, resulting in runoff from the surface in greater quantities and/or at an increased rate when compared to natural conditions prior to development. Examples of places that commonly exhibit impervious surfaces include parking lots, driveways, roadways, storage areas, and rooftops. The imperviousness of these areas commonly results from paving, compacted gravel, compacted earth, and oiled earth.

In Consultation With: The Principal Permittee and Permittees work cooperatively towards the development of programs.

Industrial Activity: The term "industrial activity" is defined in 40 CFR 122.26(b)(14) and refers to 11 categories of activities required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges associated with "industrial activity" as required by 40 CFR 122.26(c). See Phase I Facilities.

Industrial/Commercial Facility: Any facility involved and/or used in either the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services. This category of facility includes, but is not limited to, any facility defined by the Standard Industrial Classifications (SIC). Facility ownership (federal, state, municipal, private) and profit motive of the facility are not factors in this definition.

Integrated Pest Management (IPM): Pest management practice that considers the whole ecosystem when determining potential pest control strategies. IPM emphasizes use of a hierarchy of controls, with a preference for mechanical controls (e.g., mowing) and biological controls (e.g., beneficial insects, pheromones) before chemical controls (e.g., pesticides).

Jurisdiction: The geographic area within the Permittee's boundaries that are required under this Order to be under the Permittee's regulatory control. The term is not intended to include facilities which the Permittee is preempted or otherwise precluded from regulating, such as federal and state facilities, school districts, and similar governmental (non-municipally owned or operated) entities.

Legal Authority: The ability of a Permittee to impose and enforce statutes, ordinances, and regulations to

require control of pollutant sources and regulate the discharge of pollutants to the storm drain system, and to enter into interagency agreements, contracts, and memorandums of understanding. These powers are granted to the Permittees by the Constitution of the State of California and the General Laws of the State (for General Law Cities/Counties) or individual constitutions (for Charter Cities/Counties). These powers are promulgated by the Permittee through their municipal codes, ordinances, and statutes duly adopted by their governing body.

Local Stormwater Pollution Prevention Plan (Local SWPPP): A SWPPP if the project is not subject to the General Construction Permit, otherwise, a state SWPPP is required.

MS4: See Municipal Separate Storm Sewer System

Maximum Extent Practicable (MEP): The standard for implementation of stormwater management programs to reduce pollutants in stormwater. MEP refers to stormwater management programs taken as a whole. It is the maximum extent possible taking into account equitable consideration and competing facts, including, but not limited to: the gravity of the problem, public health risk, societal concern, environmental benefits, pollutant removal effectiveness, regulatory compliance, public acceptance, implementability, cost and technical feasibility. Section 402(p)(3)(B)(iii) of the Clean Water Act requires that municipal permits "...shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

Municipal Activities: all activities performed by the Permittee or performed by a contractor hired by the Permittee.

Municipal Separate Storm Sewer System (MS4): See Storm Drain System.

NPDES: See National Pollutant Discharge Elimination System

National Pollutant Discharge Elimination System (NPDES): A permit issued by the USEPA, SWRCB, or CRWQCB pursuant to the Clean Water Act that authorizes discharges to waters of the United States and requires the reduction of pollutants in the discharge.

Non-Stormwater Discharge: Any discharge to a municipal storm drain system that is not composed entirely of stormwater.

Notice of Intent to Meet and Confer (NIMC): A letter sent to a Permittee or Permittees by the Regional Board Executive Officer as an invitation to discuss the implementation of requirements under this Order and is made when it is suspected that a Permittee or Permittees has/have an insufficient program based upon performance and submittals made under this Order. The NIMC is a part of the Administrative Review section of this Order and provides an opportunity for the Permittee(s) to meet with Regional Board staff to clarify any potential misunderstandings prior to, or in lieu of the Regional Board taking enforcement action for "non-compliance".

Nuisance: Anything which meets all of the following requirements: (1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; (2) affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; (3) occurs during, or as a result of, the treatment or disposal of wastes.

Permittee(s): Any agency named in the NPDES stormwater permit as being responsible for permit conditions within its jurisdiction. Permittees to the NPDES stormwater permit presently include the Los Angeles County Flood Control District, Los Angeles County, and the cities of Agoura Hills, Alhambra, Arcadia, Artesia, Azusa, Baldwin Park, Bell, Bellflower, Bell Gardens, Beverly Hills, Bradbury, Burbank, Calabasas, Carson, Cerritos, Claremont, Commerce, Compton, Covina, Cudahy, Culver City, Diamond Bar, Downey, Duarte, El Monte, El Segundo, Gardena, Glendale, Glendora, Hawaiian Gardens, Hawthorne, Hermosa Beach, Hidden Hills, Huntington Park, Industry, Inglewood, Irwindale, La Canada Flintridge, La Habra Heights, Lakewood, La Mirada, La Puente, La Verne, Lawndale, Lomita, Los Angeles, Lynwood, Malibu, Manhattan Beach, Maywood, Monrovia, Montebello, Monterey Park, Norwalk, Palos Verdes Estates, Paramount, Pasadena, Pico Rivera, Pomona, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Rosemead, San Dimas, San Fernando, San Gabriel, San Marino, Santa Fe Springs, Santa Monica, Sierra Madre, Signal Hill, South El Monte, South Gate, South Pasadena, Temple City, Torrance, Vernon, Walnut, West Covina, West Hollywood, Westlake Village, and Whittier.

Pervious: Natural or man-made surfaces that allow the entry of water into the underlying soil, resulting in less runoff from the surface when compared to impervious surfaces. Examples of pervious surfaces include vegetated areas, most undeveloped areas, uncompacted earth surfaces, and lattice type modular pavements.

Phase I Facilities: This term refers to categories of facilities which are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges associated with "industrial activity" as required by 40 CFR 122.26(c). The term "industrial activity" is defined in 40 CFR 122.26(b)(14) and in general refers to 11 categories of activities. These categories include:

i FACILITIES SUBJECT TO STORM WATER EFFLUENT LIMITATIONS GUIDELINES, NEW SOURCE PERFORMANCE STANDARDS, OR TOXIC POLLUTANT EFFLUENT STANDARDS (40 CFR SUBCHAPTER N). Currently, categories of facilities subject to storm water effluent limitations guideline are Cement Manufacturing (40 CFR Part 411), Feedlots (40 CFR Part 412), Fertilizer Manufacturing (40 CFR Part 418), Petroleum Refining (40 CFR Part 419), Phosphate Manufacturing (40 CFR Part 422), Steam Electric (40 CFR Part 423), Coal Mining (40 CFR Part 434), Mineral Mining and Processing (40 CFR Part 436), Ore Mining and Dressing (40 CFR Part 440), and Asphalt Emulsion (40 CFR Part 442). The fact sheet accompanying this general permit contains additional information pertaining to facilities subject to new source performance standards or toxic pollutant effluent standards.

ii MANUFACTURING FACILITIES: Standard Industrial Classifications (SICs) 24 (except 2411 and 2434), 26 (except 265 and 267), 28 (except 283 and 285) 29, 311, 32 (except 323), 33, 3441, and 373.

iii OIL AND GAS/MINING FACILITIES: SICs 10 through 14 including active or inactive mining operations (except for areas of coal mining operations meeting the definition of a reclamation area under 40 CFR 434.11(1) because of performance bond issued to the facility by the appropriate Surface Mining Control and Reclamation Act (SMCRA) authority has been released, or except for areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge stormwater contaminated by contact with or that has come into contact with any overburden, raw material, intermediate products, finished products, by products, or waste products located on the site of such operations. Inactive mining operations are mined sites that are not being actively mined, but which have an identifiable owner/operator. Inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined material, or sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim.

iv HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL FACILITIES: Includes those operating under interim status or a general permit under Subtitle C of the Federal Resource Conservation and Recovery Act (RCRA).

v. LANDFILLS, LAND APPLICATION SITES, AND OPEN DUMPS: Sites that receive or have received industrial waste from any of the facilities covered by this general permit, sites subject to regulation under Subtitle D of RCRA, and sites that have accepted waste from construction activities (construction activities include any clearing, grading, or excavation that results in disturbance of five acres or more).

vi. RECYCLING FACILITIES: SICs 5015 and 5093. These codes include metal scrap yards, battery reclaimers, salvage yards, motor vehicle dismantlers and wreckers, and recycling facilities that are engaged in assembling, breaking up, sorting, and wholesale distribution of scrap and waste material such as bottles, wastepaper, textile wastes, oil waste, etc.

vii. STEAM ELECTRIC POWER GENERATING FACILITIES: Includes any facility that generates steam for electric power through the combustion of coal, oil, wood, etc.

viii. TRANSPORTATION FACILITIES: SICs 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication) or other operations identified herein that are associated with industrial activity.

ix. SEWAGE OR WASTEWATER TREATMENT WORKS: Facilities used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including lands dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of one million gallons per day or more, or required to have an approved pretreatment program under 40 CFR Part 403. Not included are farm lands, domestic gardens, or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the CWA.

xi. MANUFACTURING FACILITIES WHERE MATERIALS ARE EXPOSED TO STORM WATER: SICs 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 3441), 35, 36, 37 (except 373), 38, 39, and 4221-4225.

Note: Category x, Construction activity, is covered by a separate general permit.

Pollutant: Those "pollutants" defined in Section 502(6) of the federal Clean Water Act (33 U.S.C.§1362(6)), or incorporated into California Water Code §13373. Examples of pollutants include, but are not limited to the following:

- Commercial and industrial waste (such as fuels, solvents, detergents, plastic pellets, hazardous substances, fertilizers, pesticides, slag, ash, and sludge);

- Metals such as cadmium, lead, zinc, copper, silver, nickel, chromium, and non-metals such as phosphorus and arsenic;

- Petroleum hydrocarbons (such as fuels, lubricants, surfactants, waste oils, solvents, coolants, and grease);

- Excessive eroded soils, sediment, and particulate materials in amounts which may adversely affect the beneficial use of the receiving waters, flora or fauna of the State;

- Animal wastes (such as discharge from confinement facilities, kennels, pens, recreational facilities, stables, and show facilities);

- Substances having characteristics such as pH less than 6 or greater than 9, or unusual coloration or turbidity, or excessive levels of fecal coliform, or fecal streptococcus, or enterococcus;

The term "Pollutant" shall not include uncontaminated stormwater, potable water or reclaimed water generated by a lawfully permitted water or wastewater treatment facility.

The term "Pollutant" also shall not include any substance identified in this definition, if through compliance with the best management practices available, the discharge of such substance has been eliminated to the maximum extent practicable. In an enforcement action, the burden shall be on the person who is the subject of such action to establish the elimination of the discharge to the maximum extent practicable through compliance with the best management practices available.

Pollutant Loading: The quantity of a pollutant found in stormwater and/or non-stormwater often expressed in mass per unit of time. Pollutant loadings are commonly expressed in units of tons/year or pounds/year.

Pollutants of Concern: Constituents identified in the annual monitoring report as being "Constituents of Concern" or "Pollutants of Concern".

Pollution Prevention: Includes any planning, schedules of activities, prohibitions of practices, implementation of maintenance procedures, public education, and other management practices, to prevent or reduce pollutants in stormwater / urban runoff discharges.

Polluted Stormwater Runoff: Stormwater runoff that contains any pollutants that could impair the beneficial use of a receiving water body.

Potable Water Sources: Flows from drinking water storage, supply and distribution systems including flows from system failures, pressure releases, system maintenance, well development, pump testing, fire hydrant flow testing; and flushing and dewatering of pipes, reservoirs, vaults, and wells.

Principal Permittee: The agency named in the NPDES stormwater permit to serve as permit coordinator, responsible for general administration of the permit, and coordinating cooperation by other Permittees, including but not limited to the implementation of local self-monitoring programs and BMPs, and preparation and submittal of reports required by the permit. The Principal Permittee under this Order is the Los Angeles County Flood Control District.

Priority Catch Basins: Catch basins that appear on the list of Priority Catch Basins generated through the Public Agency Model Program.

Proper Disposal: The act of disposing of material(s) in a lawful manner and which ensures the protection of water quality and beneficial uses of receiving waters.

Public Agency Vehicle Maintenance/Material Storage Facility: Any Permittee-owned and/or operated facility that is: used for vehicle or equipment maintenance, repair, washing, or fueling; and/or is required to prepare a hazardous materials business plan. (See Corporation Yard)

Receiving Water Objectives: Objectives of the California Ocean Plan, the Los Angeles Basin Plan, and the California Toxics Rule.

Receiving Waters: All surface water bodies within the permit area that are identified in the Basin Plan.

Redevelopment: Projects creating or adding 5,000 square feet or more of impervious surface on an already developed site.

Regional Board: The Governing Board of the California Regional Water Quality Control Board State agency with primary responsibility for the coordination and control of water quality. This means the California Regional Water Quality Control Board, Los Angeles Region. The Los Angeles Region is comprised of all basins draining into the Pacific Ocean between the southeasterly boundary, located in the westerly part of Ventura County, of the watershed of Rincon Creek and a line which coincides with the southeasterly boundary of Los Angeles County Flood Control District from the ocean to San Antonio Peak and follows thence the divide between San Gabriel River and Lytle Creek drainage to the divide between Sheep Creek

and San Gabriel River drainage.

Reportable Quantity: Quantity of a hazardous substance, as set forth in 40 CFR 302, which requires notification pursuant to 40 CFR 302 in the event of that quantity release.

Runoff: Means any runoff including stormwater and dry-weather flows from a drainage area that reaches a receiving water body or sub-surface. During dry weather it is typically comprised of many base flow components either contaminated with pollutants or uncontaminated.

SIC: See Standard Industrial Classification.

SPCA: See Storm Water Program Compliance Amendment

SQMP: See Stormwater Quality Management Plan.

SWRCB: State Water Resources Control Board

Secondary Containment: Structures, usually dikes or berms, surrounding tanks or other storage containers to catch spilled or leaked materials to prevent their discharge to the MS4.

Sediment: Organic or inorganic material that is carried by or suspended in water and settles to form deposits in the storm drain system or receiving waters.

Source Minimization: Planning or operational practices that reduce the amount of materials stored at a site.

Standard Industrial Classification (SIC): The statistical classification standard, organized by industry, underlying all establishment-based federal economic statistics. The SIC of a particular industry is determined using the latest Standard Industrial Classification Manual as prepared by the Executive Office of the President, Office of Management and Budget.

State Storm Water Pollution Prevention Plan (SWPPP): A plan required by and for which contents are specified in the State of California General Permit for Storm Water Discharges Associated with Industrial Activities, and the General Permit for Storm Water Discharges Associated with Construction Activities. The purpose of the plan is to help identify the sources of pollution that affect the quality of stormwater discharges from a site and to describe and ensure the implementation of practices to reduce pollutants in stormwater discharges.

Storm Drain System: Streets, gutters, conduits, natural or artificial drains, channels and watercourses, or other facilities that are owned, operated, maintained or controlled by any Permittee and used for the purpose of collecting, storing, transporting, or disposing of stormwater.

Stormwater: Water which originates from atmospheric moisture (rainfall or snowmelt) and that falls onto land, water, or other surfaces.

Stormwater Management Plan: This is the sum of all requirements of this Order. This in not to be confused with the SQMP.

Stormwater Pollution Prevention Plan (SWPPP): A plan describing proposed design, placement, and implementation of BMPs.

Stormwater Program Compliance Amendment (SPCA): The SPCA is a report prepared by a Permittee if directed to by the Regional Board Executive Officer for insufficient submittals made under this Order. The SPCA is a part of the Administrative Review section of this Order and will include additions and enhancements to the jurisdiction's stormwater program with enforceable implementation deadlines.

Stormwater Quality Management Plan (SQMP): The five Model Programs collectively developed by the Permittees in accordance with provisions of the NPDES Permit Order Number 96-054, to comply with applicable federal and state laws.

Stormwater Runoff: That part of precipitation (rainfall or snowmelt) which travels via flow across a surface to the storm drain system or receiving waters. Examples of this phenomenon include: the water that flows from a building's roof when it rains (runoff from an impervious surface); the water that flows into streams when snow on the ground begins to melt (runoff from a semi-pervious surface); and the water that flows from a vegetated surface when rainfall is in excess of the rate at which it can infiltrate into the underlying soil (runoff from a pervious surface). When all other factors are equal, runoff increases as the perviousness of a surface decreases.

Standard Urban Stormwater Mitigation Plan: A plan, to be submitted prior to the submittal of an application for the first planning or building approval for a new development project, that sets forth stormwater pollution controls to be incorporated into development projects. The plan shall:

- be designed to reduce the runoff volume from the site and the pollutant load contributed by the site through incorporation of design elements and practices that address each of the following goals:

- maximize, to the extent practicable, the percentage of permeable surfaces in order to allow more percolation,

- minimize, to the extent practicable, the amount of runoff directed to impermeable areas to the storm drain system,

- maximize, to the extent practicable, stormwater filtration and storage for reuse through the use of sediment traps, cisterns or other means,

- minimize, to the extent practicable, parking lot pollution through the use of porous materials to allow percolation of stormwater, through the installation of appropriate treatment controls, or through other means.

Street Washing: The practice of washing of streets and sidewalks using water or other cleaning fluids.

Toxic Materials: For the purposes of this Order, toxic materials means any material(s) or combination of materials which directly or indirectly cause(s) either acute or chronic toxicity in the water column.

Toxic Pollutant: Those pollutants, or combinations of pollutants, defined in Section 502(13) or 307(a)(1) of the federal Clean Water Act (33 U.S.C.§1362(13)).

Undesirable Coloration: See "Color" in the Water Quality Control Plan, Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (page 3-9) June 13, 1994.

USEPA: United States Environmental Protection Agency

Waste Minimization: Operational practices that reduce the amount of waste materials generated. Practices may include recycling and reuse.

Watershed Management Area (WMA): Any one of the general watershed areas covered by this NPDES stormwater permit consisting of: Malibu Creek and other rural areas discharging to Santa Monica Bay, Dominguez Channel/Los Angeles Harbor, San Gabriel River, Los Angeles River, and Ballona Creek and other urban areas discharging to the Santa Monica Bay watersheds.

Watershed Management Area Plan (WMAP): A plan for implementation of permit requirements that is based on the Stormwater Quality Management Plan (SQMP) but further addresses specific issues, pollutants of concern, and BMPs that are unique to the specific Watershed Management Area.

Watershed Management Committee (WMC): A committee composed of representatives from each Permittee in a Watershed Management Area. Duties include establishing goals and objectives for the Watershed; prioritizing pollution control efforts; developing a specific Watershed Management Plan; coordinating and facilitating annual reports for the watershed; and facilitating compliance by Permittees in the watershed.

PART 6. STANDARD PROVISIONS

A. Should the Discharger discover that it failed to submit any relevant facts or that it submitted incorrect information in a report, it shall promptly submit the missing or correct information.

B. The Discharger shall report all instances of non-compliance not otherwise reported at the time monitoring reports are submitted.

C. This Order includes the attached Monitoring and Reporting Program, and Standard Urban Stormwater Mitigation Plan, which are a part of the permit and must be complied with in the same manner as with the rest of the requirements in the permit.

D. Public Review

1. All documents submitted to the Regional Board in compliance with the terms and conditions of this Permit shall be made available to members of the public pursuant to the Freedom of Information Act (5 U.S.C. Section 552 (as amended) and the Public Records Act (California Government Code Section 6250 *et seq.*)).

2. All documents submitted to the Executive Officer for approval shall be made available to the public for a 30-day period to allow for public comment.

E. Duty to Comply [40 CFR 122.41(a)]

1. The Discharger must comply with all the terms, requirements, and conditions of this Order. Any violation of this Order constitutes a violation of the Clean Water Act, its regulations and the California Water Code, and is grounds for enforcement action, Order termination, Order revocation and reissuance, denial of an application for reissuance; or a combination thereof.

2. A copy of these waste discharge specifications shall be maintained by the Discharger so as to be available during normal business hours to Discharger employees and members of the public.

3. Any discharge of wastes at any point(s) other than specifically described in this Order is prohibited, and constitutes a violation of the Order.

F. Duty to Mitigate [40 CFR 122.41(d)]

The Discharger shall take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.

G. Inspection and Entry [40 CFR 122.41(i)]

The Regional Board, USEPA, and other authorized representatives shall be allowed:

1. Entry upon premises where a regulated facility is located or conducted, or where records are kept under conditions of this Order;

2. Access to copy any records that are kept under the conditions of this Order;

3. To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and,

4. To photograph, sample, and monitor for the purpose of assuring compliance with this Order, or as otherwise authorized by the Clean Water Act and the California Water Code.

H. Proper Operation and Maintenance [40 CFR 122.41(e)]

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment (and related appurtenances) that are installed or used by the Discharger to achieve compliance with this Order. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar system that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order.

I. Signatory Requirements [40 CFR 122.41(k)]

Except as otherwise provided in this Order, all applications, reports, or information submitted to the Regional Board shall be signed by the Director of Public Works, City Engineer, or authorized designee under penalty of perjury.

J. Permit Action [40 CFR 122.41(f)]

1. This Order may only be modified, revoked, or reissued, prior to the expiration date, by the Regional Board, in accordance with the procedural requirements of the Water Code and Title 23 of the California Code of Regulations for the issuance of waste discharge requirements, and upon prior notice and hearing, to:

   a. Address changed conditions identified in the required reports or other sources deemed significant by the Regional Board;

b. Incorporate applicable requirements or statewide water quality control plans adopted by the State Board or amendments to the Basin Plan;

c. Comply with any applicable requirements, guidelines, and/or regulations issued or approved pursuant to CWA Section 402(p);

d. Consider any other federal or state laws or regulations that became effective after adoption of this Order ; and/or,

e. Address any amendments under the Clean Water Act.

2. After notice and opportunity for a hearing, this Order may be terminated, revoked and reissued, or modified for cause, including, but not limited to:

a. Violation of any term or condition contained in this Order;

b. Obtaining this Order by misrepresentation, or failure to disclose all relevant facts; or,

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

3. The filing of a request by the Discharger for a modification, revocation and re-issuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

4. This Order may be modified to make corrections or allowances for changes in the permitted activity listed in this section, following the procedures at 40 CFR Part 122.63, if processed as a minor modification.

K. Severability

The provisions of this permit are severable; and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected.

L. Duty to Provide Information [40 CFR 122.41(h)]

The Discharger shall furnish, within a reasonable time, any information the Regional Board or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Discharger shall also furnish to the Regional Board, upon request, copies of records required to be kept by this Order.

M. Ninety-Six Hour Reporting[1]

1. The Discharger shall report any noncompliance than may endanger health or the environment. Any information shall be provided orally within 96 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within 10 working days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

2. The Executive Officer may waive the required written report on a permittee-by-permittee basis.

N. Bypass [40 CFR 122.41(m)][2]

Bypass (the intentional diversion of waste streams from any portion of a treatment facility) is prohibited unless it is to facilitate maintenance of stormwater BMPs. The Regional Board may take enforcement action against the Discharger for bypass unless:

1. Bypass was unavoidable to prevent loss of life, personal injury or severe property damage. (Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production);

2. There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated waste, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that could occur during normal periods of equipment downtime or preventive maintenance;

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[1]This provision applies to incidents where effluent limitations (numerical or narrative) as provided in this Order or in the SQMP are exceeded, and which endanger public health or the environment.

[2]This provision applies to the operation and maintenance of stormwater controls and BMPs as provided in this Order or in the SQMP.

3. The Discharger submitted a notice at least ten days in advance of the need for a bypass to the Regional Board; or,

4. The Discharger may allow a bypass to occur that does not cause effluent limitations to be exceeded, but only if it is for essential maintenance to assure efficient operation. In such a case, the above bypass conditions are not applicable.

O. Upset [40 CFR 122.41(n)][3]

1. A Discharger that wishes to establish the affirmative defense of an upset in an action brought for noncompliance shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset;

   b. The permitted facility was being properly operated by the time of the upset;

   c. The Discharger submitted notice of the upset as required; and,

   d. The Discharger complied with any remedial measures required.

2. No determination made before an action for noncompliance, such as during administrative review of claims that noncompliance was caused by an upset, is final administrative action subject to judicial review.

3. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof.

P. Property Rights [40 CFR 122.41(g)]

This Order does not convey any property rights of any sort, or any exclusive privilege.

Q. Enforcement

1. Violation of any of the provisions of the NPDES permit or any of the provisions of this Order may subject the violator to any of the penalties described herein, or any combination thereof, at the discretion of the prosecuting authority; except that only one kind of penalty may be applied for

[3] *Supra.* See footnote number 2.

each kind of violation. The Clean Water Act provides the following:

Criminal Penalties

a. *Negligent Violations*
The CWA provides that any person who negligently violates permit conditions implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both.

b. *Knowing Violations*
The CWA provides that any person who knowingly violates permit conditions implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

c. *Knowing Endangerment*
The CWA provides that any person who knowingly violates permit conditions implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act and who knows at that time he is placing another person in imminent danger of death or serious bodily injury is subject to a fine of not more than $250,000, or by imprisonment for not more than 15 years, or both.

d. *False Statement*
The CWA provides that any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under the Act or who knowingly falsifies, tampers with, or renders inaccurate, any monitoring device or method required to be maintained under the Act, shall upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years, or by both. If a conviction is for a violation committed after a first conviction of such a person under this paragraph, punishment shall be by a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or by both. (See section 309(c)(4) of the Clean Water Act.)

Civil Penalties

e. The CWA provides that any person who violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the

Act is subject to a civil penalty not to exceed $27,500 per day for each violation.

2. The California Water Code provides that any person who violates a waste discharge requirement provision of the ~~California Water~~ Code is subject to civil penalties of up to $5,000 per day, $10,000 per day, or $25,000 per day of violation; or when the violation involves the discharge of pollutants, is subject to civil penalties of up to $10 per gallon per day or $25 per gallon per day of violation; or some combination thereof, depending on the violation or combination of violations.

R. Need to Halt or Reduce Activity not a Defense [40 CFR 122.41(c)]

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order.

S. Regional Board Order No. 96-054 is hereby rescinded.

T. This Order expires five years from permit adoption. The Discharger must submit a Report of Waste Discharge (ROWD) in accordance with Title 23, California Code of Regulation, not later than 180 days in advance of such date as application for reissuance of waste discharge requirements.

I, Dennis A. Dickerson, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on date of permit adoption.

_____

Dennis A. Dickerson
Executive Officer

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. CIXXX

FOR

STORMWATER MANAGEMENT/URBAN RUNOFF DISCHARGES
FOR
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT,
COUNTY OF LOS ANGELES, AND THE CITIES OF LOS ANGELES COUNTY

NPDES PERMIT NO. CASXXXXXX

I. Program Reporting Requirements

A. The Permittees shall submit, by October 15 of each year beginning the year 2002, an Annual Stormwater Program Report, Assessment, and Budget Summary documenting the status of the general program and individual tasks contained in the WMAPs.

The Permittees shall submit standard annual reporting forms to the Principal Permittee or Regional Board including information on items 1-6 below.

The Annual Stormwater Program Report, Assessment, and Budget Summary shall include any proposed changes to the WMAPs. The Annual Stormwater Program Report, Assessment, and Budget Summary shall cover the previous fiscal year from July 1 through June 30. At a minimum, the annual report will include the following:

1. Program Management

   a. Status of compliance with permit requirements including implementation dates for all time-specific deadlines. If permit deadlines are not met, the Discharger shall report the reasons why the requirement was not met and how the requirements will be met in the future, including projected implementation date.

2. Public Information and Participation

a. Programs for Residents

i. Description of activities on distributing brochures, community outreach efforts, public communication efforts and educational programs in schools including an estimate of the number of impressions per year made on the general public about stormwater quality via print, local TV access, local radio presentations, meetings or other appropriate media.

3. Programs for Development Planning

a. The status of significant rewrite of the Permittees' General Plan;

b. A summary of the accomplishments of the program.

4. Programs for Development Construction

a. Number of exempt construction projects, non-priority projects, and priority projects requiring coverage under the General Construction Activity Permit;

b. Number and type of enforcement actions, applicable to stormwater enforcement, taken at construction sites during the past year.

5. Programs for Illicit Connection and Illicit Discharge Control

a. Number of reports of illicit discharges that Permittees responded to, percentage that were identified as actual illicit discharges, and percentage of the actual illicit discharges where the incident was either cleaned up, referred to another responsible agency and/or follow up/education with the discharger was conducted;

b. Number of illicit connections investigated in the past year

c. Number of illicit connections eliminated in the past year;

d. Number and type of enforcement actions for stormwater illicit connections taken in the past year;

e. A summary from records on illicit discharges and connections which includes type of material, type of source, date of initial inspection, enforcement action taken, date of follow-up inspection, date of conclusion/cleanup/removal/ follow-up/education.

6. Programs for Public Agency Activities

   a. The discharger shall provide a summary, which at a minimum, includes an estimate of the quantity of trash removed from catch basin inlets;

   b. A summary of the total tonnage of debris that were removed annually by street sweeping and the total miles of curbed streets within the permittee's juridiction;

   c. Evaluate the training provided to field road maintenance personnel.

B. The discharger shall submit a Stormwater Monitoring Report on October 15, 2002, and annually on October 15, thereafter. The report shall include:

1. Status of implementation of the monitoring program;
2. Results of the monitoring program;
3. A general interpretation of the results; and,
4 Both tabular and graphical summaries of the monitoring data obtained during the previous year.

C. All applications, reports, or information submitted to the Regional Board shall be signed and certified pursuant to EPA regulations 40 CFR 122.22 (b). Each report shall contain the following completed declaration:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
>
> Executed on the _____day of _____, 20___,
>
> at _____
>
> (Signature)_____(Title)_____";

Permittee submittals to the Principal Permittee shall also be signed and certified pursuant to EPA regulations 40 CFR 122.22 (b).

D. The Discharger shall mail the original of each annual report to:

CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD - LOS ANGELES REGION
320 W. 4TH STREET, SUITE 200
LOS ANGELES, CA 90013

II. Monitoring Requirements

A. The Discharger shall implement the Countywide Monitoring Plan as follows.

Land Use

1. The Principal Permittee shall monitor a total of 200 station events per storm season at land use stations, provided there are sufficient storm events during the season. A station event is defined as one sampling event per station.

2. All samples for land use station monitoring may be taken at the same locations and with the same type of automatic sampler used under Order 96-054. The samplers shall be set to monitor storms totaling 0.25 inches or greater of rainfall.

3. The land use stations shall be monitored during the term of this Order or until such time that event mean concentrations (EMC) are derived, at the 25% error rate, for the following constituents at their respective sites:

Table 1
Land Use Constituents

LAND USE TYPE	LOCATION	CONSTITUENTS
Retail/Commercial	Santa Monica Pier Drain	Ammonia, total and dissolved copper, nitrate, total lead, total suspended solids (TSS), PAH, diazinon, chlorpyrifos
Vacant	Sawpit Wash	Total kjeldahl nitrogen (TKN), TSS, PAH, diazinon, chlorpyrifos
High Density Single Family Residential	Bond Issue Project 620	Total lead, PAH, diazinon, chlorpyrifos
Transportation	Dominguez Channel	PAH, diazinon, chlorpyrifos

Light Industrial	Bond Issue Project 1202	Total copper, PAH, diazinon, chlorpyrifos
Education	Bond Issue Project 474	Total copper, total zinc, TSS, PAH, diazinon, chlorpyrifos
Multifamily Residential	Bond Issue Project 404	Ammonia, ammonia nitrogen, nitrite nitrogen, TSS, PAH, diazinon, chlorpyrifos
Mixed Residential	Bond Issue Project 156	Ammonia, nitrate, total zinc, PAH, diazinon, chlorpyrifos

Mass Emissions

4. The Principal Permittee shall monitor a total of four mass emission stations. Monitoring shall not exceed five storm events per station for each storm season. Composite samples may also be taken at Coyote Creek.

5. Samples for mass emission station monitoring may be taken at the same locations and with the same type of automatic sampler used under Order 96-054, as well as through grab sampling. The samplers shall be set to monitor storms totaling 0.25 inches or greater of rainfall. The minimum required constituents to be analyzed for samples taken at mass emission stations are listed in Table 2 below.

Table 2
Mass Emissions Constituents

CONSTITUENT	EPA TEST METHOD	BALLONA CREEK	MALIBU CREEK	LOS ANGELES RIVER	SAN GABRIEL RIVER
Cyanide	A335.2	X	X	X	X
TPH	A418.1			X	
Oil and Grease	A413.1			X	
Indicator Bacteria	Varies	X	X	X	X
Ammonia	A350.3	X		X	
Calcium	A215.2	X	X	X	X
Magnesium	C3500MgD	X	X	X	X
Potassium	A258.1	X	X	X	X
Sodium	A273.1	X	X	X	X

CONSTITUENT	EPA TEST METHOD	BALLONA CREEK	MALIBU CREEK	LOS ANGELES RIVER	SAN GABRIEL RIVER
Bicarbonate	A310.1	X	X	X	X
Chloride	B429	X	X	X	X
Flouride	B429	X	X	X	X
Nitrate	B429	X	X	X	X
Sulfate	B429	X	X	X	X
Alkalinity	A310.1	X	X	X	X
Hardness	A130.2	X	X	X	X
COD	A410.4	X	X	X	X
pH	A150.1	X	X	X	X
Specific Conductance	A120.1	X	X	X	X
Total Dissolved Solids	A160.1	X	X	X	X
Turbidity	A180.1	X	X	X	X
Total Suspended Solids	A160.2	X	X	X	X
Volatile Suspended Solids	160.4	X	X	X	X
MBAS	A425.1	X			
Total Organic Carbon	A415.1	X	X	X	X
BOD	A405.1	X	X	X	X
Dissolved Phosphorus	A365.2	X	X	X	X
Total Phosphorus	A365.2	X	X	X	X
NH3-N	A350.3	X			
Nitrate-N	C4110B	X	X	X	X
Nitrite-N	C4110B	X		X	X
TKN	A351.4	X	X	X	X
Dissolved Aluminum	A202.2			X	
Total Aluminum	A202.2	X	X	X	X
Dissolved Barium	A208.2	X	X	X	X

CONSTITUENT	EPA TEST METHOD	BALLONA CREEK	MALIBU CREEK	LOS ANGELES RIVER	SAN GABRIEL RIVER
Total Barium	A208.2	X	X	X	X
Dissolved Boron	A212.3	X	X	X	X
Total Boron	A212.3	X	X	X	X
Dissolved Cadmium	A213.2	X	X	X	X
Dissolved Copper	A220.1	X		X	
Total Copper	A220.1	X	X	X	X
Dissolved Iron	A236.1			X	
Total Iron	A236.1	X	X	X	X
Dissolved Lead	A239.2	X	X	X	X
Total Lead	A239.2			X	
Total Mercury	A245.1	X	X	X	X
Dissolved Nickel	A249.2			X	
Total Nickel	A249.2	X	X	X	
Dissolved Zinc	A289.1	X	X	X	X
Total Zinc	A289.1	X		X	
Bis(2-ethylhexyl)phthalate	625M	X	X	X	X
PAHs	625M	X	X	X	X
Diazinon	507	X	X	X	X
Chlorpyrifos	507	X	X	X	X

X = Requires analysis

6. If a constituent is not detected at the method detection limit for its respective test method listed in Table 2 above in more than 25 percent of the first ten sampling events or on a rolling basis using ten consecutive sampling events, it will not be further analyzed unless the observed occurrences show concentrations greater than ten times the detection limit and are cause for concern.

7. Receiving Waters Studies

a. San Pedro Bay

The Principal Permittee, in conjunction with other Permittee(s), could partially fund a study of receiving waters impacted by stormwater, subject to revisions as set forth below in II.A.7.c. The purpose of the study will be to study the impacts, if any, of stormwater/non-stormwater discharges on the beneficial uses of San Pedro Bay and to assist the Permittees in developing stormwater management programs. The obligation of the Principal Permittee with respect to the receiving waters study could consist of the following:

i. Plume Study: The Principal Permittee would support a plume study to evaluate the dispersion, fate, and transport of stormwater pollutants in Dominguez Channel, Los Angeles River, and San Gabriel River.

ii. Benthic Study: The Principal Permittee would support a study to assess impacts of stormwater on the marine benthic community near the mouths of Dominguez Channel, Los Angeles River, and San Gabriel River. If it is the consensus of project scientists that a third year of benthic study is advisable to meet the goals of the receiving waters study, the Principal Permittee would consider further contribution.

iii. Toxicity Study: The Principal Permittee would support a study to evaluate sediment and water column toxicity on appropriate marine species in Dominguez Channel, Los Angeles River, and San Gabriel River. If it is the consensus of the project scientists that a third year of toxicity studies is advisable to meet the goals of the receiving waters study, the Principal Permittee would consider further contribution.

b. Santa Monica Bay

i. Plume Study: To study the persistence of stormwater plumes;

ii. Toxicity: Toxicity Identification Evaluations (TIEs) on species to find the impacts of constituents other than metals; and,

iii. Sediments: Fate of sediments in the Bay.

c. Project Design: The receiving waters studies shall initially contain the elements established in II.A.7.a and b. However, the scientists conducting the receiving waters studies may alter the parameters of the second and (if necessary) the third year of the receiving waters

studies so as to meet the objectives of each study. Such alterations may include changing of sampling locations, use of different sampling techniques, or other pertinent redirection of resources. The Principal Permittee shall notify the Executive Officer of any revisions to the second and (if necessary) third years of the receiving waters studies for review and approval.

d. Study Reports: The Principal Permittee shall require the project scientists conducting the study to prepare an annual report covering study activities of the previous year, and any interim/final assessments. Such reports shall be submitted by the Principal Permittee to the Executive Officer with the Annual Monitoring Report.

e. Principal Permittee Responsibilities: The commitments of the Principal Permittee toward performance of a receiving waters studies could be: providing funding, and submittal of progress and final reports.

8. River Toxicity Studies: The Principal Permittee would take two storm weather and two dry weather water samples in the Los Angeles River, Coyote Creek, and Dominguez Channel. Toxicity Identification Evaluations shall be conducted for a full range of constituents on appropriate freshwater species.

   Wet weather Toxicity Identification Evaluations shall be conducted for a full range of constituents on appropriate freshwater species on the San Gabriel River.

9. Bacteria: The Principal Permittee shall participate in the Southern California Coastal Waters Research Project's development and calibration of water quality models in an effort to characterize the presence and persistence of indicator bacteria in dry and wet weather.

   The Principal Permittee could participate in similar studies initiated for other parts of the County where indicator bacteria impair beneficial uses.

10. Contaminated Sediments: The Principal Permittee could participate in the Corps of Engineers' Sediment Control Management Plan and the Coastal Commission Sediment Task Force.

11. Aerial deposition: The Principal Permittee could fund, in whole or in part, a study of the receiving water impacts due to aerial deposition on inland watersheds.

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. xx-xxx
(NPDES NO. CASxxxxxx)

ATTACHMENTS
TO
WASTE DISCHARGE REQUIREMENTS
FOR
MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES
WITHIN THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT,
COUNTY OF LOS ANGELES, AND THE CITIES OF LOS ANGELES COUNTY

ATTACHMENT A
LIST OF PERMITTEES
BY
WATERSHED MANAGEMENT AREAS

Santa Monica Bay

Malibu Creek and Other Rural

Agoura Hills
*Calabasas
Los Angeles County
Malibu
Westlake Village

Ballona Creek and Other Urban

Beverly Hills
Culver City
El Segundo
Hermosa Beach
Los Angeles
Los Angeles County
Manhattan Beach
Palos Verdes Estates
Rancho Palos Verdes
Redondo Beach
Rolling Hills
Rolling Hills Estates
*Santa Monica
West Hollywood

Dominguez Channel/ Los Angeles Harbor Drainage

Carson
Gardena
Hawthorne
Inglewood
Lawndale
Lomita
Los Angeles
Los Angeles County
*Torrance

Los Angeles River

Alhambra
Arcadia
Bell
Bell Gardens
Burbank
Commerce
Compton
Cudahy
El Monte
Glendale
Hidden Hills
Huntington Park
La Canada Flintridge
****Long Beach***
Los Angeles
Los Angeles County
Lynwood
Maywood
Monrovia
Montebello
Monterey Park
Paramount
Pasadena
Rosemead
San Fernando
San Gabriel
San Marino
Sierra Madre
Signal Hill
South El Monte
South Gate
South Pasadena
Temple City
Vernon

San Gabriel River

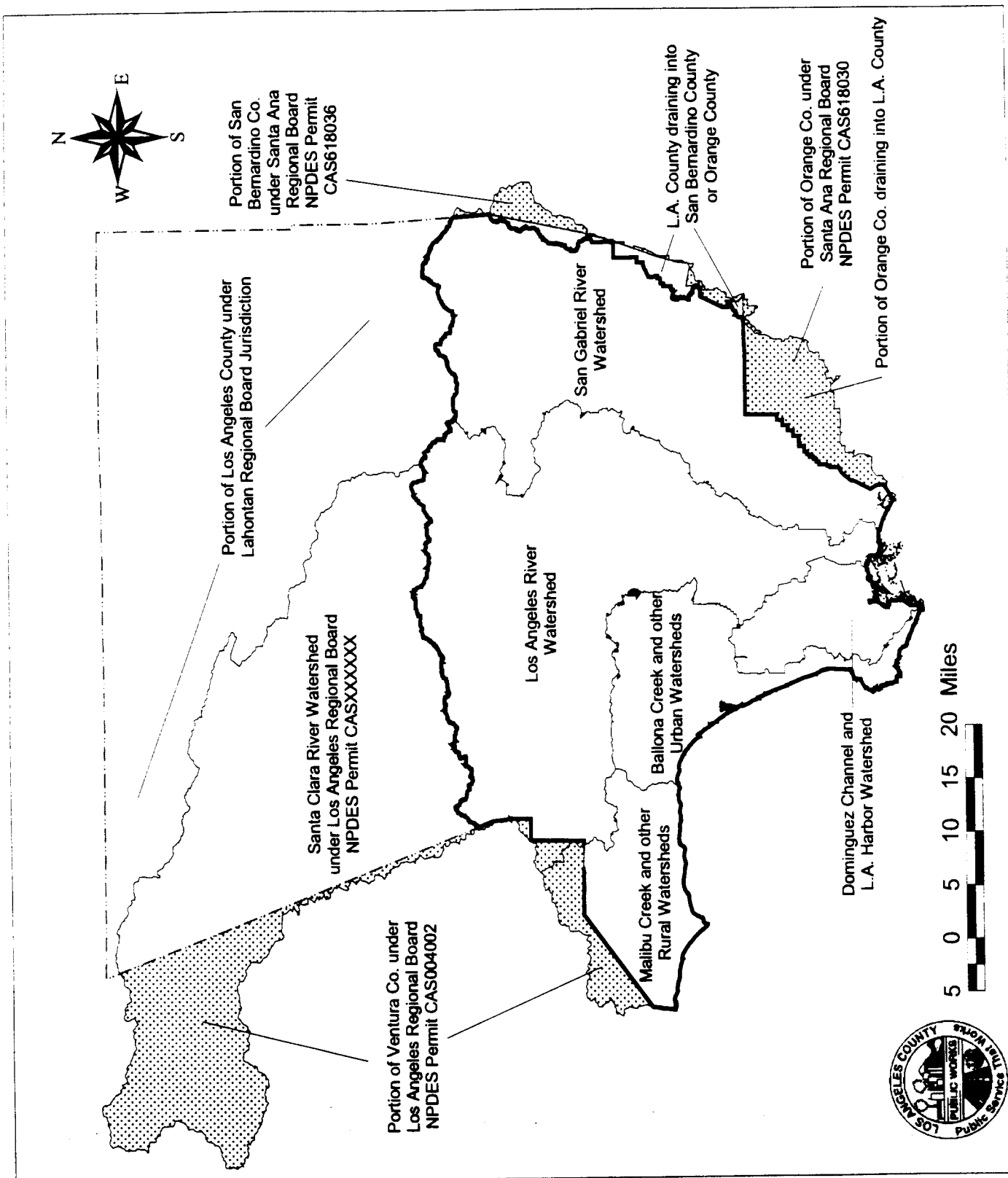
Artesia
Azusa
Baldwin Park
Bellflower
Bradbury
Cerritos
Claremont
Covina
Diamond Bar
Downey
Duarte
Glendora
Hawaiian Gardens
Industry
Irwindale
La Habra Heights
La Mirada
La Puente
La Verne
Lakewood
****Long Beach***
Los Angeles County
Norwalk
Pomona
Pico Rivera
San Dimas
Santa Fe Springs
Walnut
West Covina
Whittier

*Italicized agencies are present in more than one Watershed Management Area. *Indicates City with the largest watershed population other than the County of Los Angeles and the City of Los Angeles.*

The City of Long Beach is covered under Order No. 99-060.

ATTACHMENT B

MAP OF LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PERMITTED AREA



PREPARED BY: Los Angeles County Department of Public Works Watershed Management Division NPDES Section

p:\eppub\water\gis\projects\rowd\permit area.apr Jan 29, 2001

ATTACHMENT C
NPDES STORMWATER BUDGET SUMMARY

Permittee: _____

Submitted by: _____

Date Submitted: _____

For Fiscal Year: _____

PROGRAM ELEMENT	BUDGET *
Program Management	
+Administration, Review, and Reporting	$0
+Enforcement	$0
TOTAL PROGRAM MANAGEMENT	$0
Illicit Connections/Illicit Discharges Elimination	
+Operations and Maintenance	$0
+Capital Costs	$0
TOTAL ILLICIT CONNECTIONS/ILLICIT DISCHARGES ELIMINATION	$0
Development Planning & Construction	
+Construction Inspection Activities	$0
+Operations and Maintenance (excluding construction inspection)	$0
+Capital Costs	$0
TOTAL DEVELOPMENT PLANNING & CONSTRUCTION	$0
Public Agency Activities	
+Implementing BMPs for Municipal Street Sweeping	$0
+Implementing BMPs for Fleet and Public Agency Facilities	$0
+Implementing BMPs for Landscape and Recreational Facilities	$0
+Other Operations and Maintenance	$0
+Capital Costs	$0
TOTAL PUBLIC AGENCY ACTIVITIES	$0
Public Information and Participation	
+Public Outreach/Education	$0
+Employee Training	$0
+Conducting Industrial/Commercial Educational Site Visits	$0
TOTAL PUBLIC INFORMATION AND PARTICIPATION	$0
Monitoring Program	
+Operations and Maintenance	$0
+Capital Costs	$0
TOTAL MONITORING PROGRAM	$0
Other	
+Operations and Maintenance	$0
+Capital Costs	$0
TOTAL OTHER	$0
NPDES STORMWATER BUDGET GRAND TOTAL	$0

* If costs for a program element can be attributed to a program other than Board Order No. 96-054, please note the percentage which is attributed to NPDES in parentheses.

Pursuant to
NPDES PERMIT ORDER NO. 96-054
(CAS614001)

PERFORMANCE STANDARDS (PS)

February 01, 2001

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT, LOS ANGELES COUNTY,
AND THE INCORPORATED CITIES

Prepared By

Los Angeles County Department of Public Works
Watershed Management Division, NPDES Section

PERFORMANCE STANDARDS

Permittees shall meet the following minimum requirements and strive to achieve the goals. Precise data regarding annual status of the tasks shall be submitted to the Principal Permittee or Regional Board in the form of annual reports.

Public Agency

Street Sweeping for curbed public streets

Minimum: Average once every 4 weeks with a minimum of 12 times per year

Catch Basin Clean-Out (applies to all catch basins)

Minimum: One time per year between April 16 and October 14

Priority Catch Basin Clean-Out

Minimum: If 50% full between Oct 15 and April 15

Open Channel Clean-Out

Goal: One time per year

Illicit Connection/Illicit Discharge

Number of Investigated Reported Illicit Discharges

Goal: 100%

Number of Corrected Illicit Connections Identified by Field Crews while Investigating Reported Illicit Discharges

Goal: 100%

Open Channel Walkthrough Visits

Minimum: One time per year

Public Information and Participation

Total number of flyers, pamphlets, radio ads, and other messages made to the public

Minimum: 2.1 Million impressions per year

Percent of catch basins marked "no dumping"

Goal: 100%

Number of Site Inspections conducted

Minimum: Each site visited two times during permit term. Site visits should be equally spaced.

Development Planning

Applicable projects implementing SUSMP requirements

Goal: 100%

Development Construction

Construction projects applying for grading and/or building permits will be required to submit applicable water quality protection plans and certifications; local SWPPPs, Wet Weather Erosion Control Plans, and certifications; and state NOI and state SWPPP.

Goal: 100%

PERFORMANCE STANDARDS

Permittees shall meet the following minimum requirements and strive to achieve the goals. Precise data regarding annual status of the tasks shall be submitted to the Principal Permittee or Regional Board in the form of annual reports.

Public Agency

Street Sweeping for curbed public streets

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Illicit Connection/Illicit Discharge

Number of Investigated Reported Illicit Discharges

Goal: 100%

Number of Corrected Illicit Connections Identified by Field Crews while Investigating Reported Illicit Discharges

Goal: 100%

Open Channel Walkthrough Visits

Minimum: One time per year

Public Information and Participation

Total number of flyers, pamphlets, radio ads, and other messages made to the public

Minimum: 50 Million impressions per year

Percent of catch basins marked "no dumping"

Goal: 100%

Number of Site Inspections conducted

Minimum: Each site visited two times during permit term. Site visits should be equally spaced.

Development Planning

Applicable projects implementing SUSMP requirements

Goal: 100%

Development Construction

Construction projects applying for grading and/or building permits will be required to submit applicable water quality protection plans and certifications; local SWPPPs, Wet Weather Erosion Control Plans, and certifications; and state NOI and state SWPPP.

Goal: 100%

Pursuant to
NPDES PERMIT ORDER NO. 96-054
(CAS614001)

WATERSHED MANAGEMENT AREA PLANS (WMAP)

February 01, 2001

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT, LOS ANGELES COUNTY, AND THE INCORPORATED CITIES

Prepared By

Los Angeles County Department of Public Works
Watershed Management Division, NPDES Section

BALLONA CREEK
WATERSHED MANAGEMENT AREA PLAN

FEBRUARY 01, 2001

LOS ANGELES REGION

WASTE DISCHARGE REQUIREMENTS
FOR
MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES
WITHIN THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

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1.0 Watershed Management Area Plan Objective

In compliance with the 1996 municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit (Order No. 96-054), Los Angeles County (Principal Permittee) is required to develop a Watershed Management Area Plan (WMAP) for each Watershed Management Area (WMA) in coordination with the cities (Permittees) in each WMA. The WMAP consists of the following: a description of each watershed's characteristics; the Stormwater Quality Management Plan (SQMP), formally known as the five Model Programs (see Appendix); quality of stormwater runoff analyses; identified projects to improve quality of stormwater and urban runoff; and available funding resources.

2.0 Watershed Characteristics

2.1 Watershed Area

The Ballona Creek Watershed is located in the southwestern portion of Los Angeles County. It is bound by the Pacific Ocean to the west and the Santa Monica Mountains to the north. The watershed is composed of approximately 212 square miles with approximately 83% of its total area developed. Ballona Creek discharges to the Santa Monica Bay through Marina del Rey while some cities drain directly into the Santa Monica Bay (Figure 1). The major tributaries to the Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous storm drains.

In accordance with the 1996 NPDES Permit, the County of Los Angeles is divided into six WMAs. The Permittees within the Ballona Creek WMA, as listed in the Permit, are as follows:

Beverly Hills
Culver City
El Segundo
Hermosa Beach
City of Los Angeles
Los Angeles County
Manhattan Beach
Palos Verdes Estates
Rancho Palos Verdes
Redondo Beach
Rolling Hills
Rolling Hills Estates
Santa Monica
West Hollywood

There are other Permittees that may drain to this watershed, but are not formally listed as Permittees in this WMA.

2.2 Natural Characteristics

2.2.1 Topography

The watershed terrain consists of mountains and coastal plain. The northerly portion of the watershed has the highest elevation in the Santa Monica Mountains. Figure 3 shows the watershed's contour lines at 50-foot increments.

2.2.2 Climate

The mean annual precipitation in the watershed is about 14.88 inches. Although large year-to-year variations are common, most rainfall events are associated with winter cold fronts. These cold fronts typically occur during the wet season (October 15 to April 15). The remainder of the year from April 16 to October 14, the dry season, has significantly lower precipitation.

2.2.3 Hydrology

A comprehensive network of flood control facilities exist in the watershed to sustain the development in the region. A portion of the annual rainfall in the watershed escapes to the Pacific Ocean via the concrete-lined Ballona Creek. The remaining amount discharges directly into the Pacific Ocean.

2.2.4 Flow Characteristics

2.2.4.1 Flow Direction

Runoff in the watershed flows in a generally southwesterly direction in flood control channels or overland eventually draining into the Pacific Ocean (Figure 2).

2.2.4.2 Sub-Basins

The sub-basins delineated in Figure 2 show hydrological areas and where they drain. They are based on the contour lines in Figure 3.

2.2.5 Land Use

As shown in Table 1, the land use in the watershed is "High-Density Single-Family Residential" covering about 36% of area (Figure 6).

Table 1. Land Use Distribution

Land Use Category	Percent by Area
Vacant	21.86
Transportation	2.97
High-Density Single-Family Residential (HDSFR)	35.71
Light Industrial	2.65
Multiple-Family Residential	9.92
Retail/Commercial	6.42
Education	2.76
Mixed Residential	3.69
All Other	14.02

The Los Angeles County land use monitoring program under the 1996 NPDES permit is a result of a site selection study entitled *Evaluation of Land Use Monitoring Stations* (Woodward-Clyde and Psomas and Associates, 1996). This study identified the most significant land use categories within the permit area regarding stormwater quality. The selection study yielded eight land use monitoring stations. These eight land use monitoring stations represent over 86% of all the land uses within the permit area. These stations monitor flow and have automated samplers to collect flow-weighted composite stormwater samples during storm events. The 34 categories shown in Table 2 cover 100% of the land uses in the County.

Figure 6 depicts the eight land use categories currently monitored with their respective percent by area within the watershed. The remaining land use categories are summarized as "All Other" in Table 1.

Table 2. Land Use Categories

Land Use Category	**Inclusive SCAG Land Use Codes** [1]
High Density Single Family Residential [2]	1111
Light Industrial [2]	1311 through 1315, 1340
Vacant [2]	3100, 3200, 3300, 3400
Retail/Commercial [2]	1221 through 1224
Multiple Family Residential [2]	1121 through 1125
Transportation [2]	1411 through 1416, 1418
Education [2]	1261 through 1266
Low Density Single-Family Residential	1112
Mixed Residential [2]	1140
General Office	1211 through 1213
Natural Resources Extraction	1331, 1332
Institutional	1241 through 1247, 1251 through 1253
Heavy Industrial	1321 through 1325
Other Commercial	1231 through 1234
Open Space/Recreation	1820, 1830, 1840, 1850, 1860, 1870, 1880
Utility Facilities	1431, 1432, 1433, 1435, 1436, 1438
Mobile Homes and Trailer Parks	1131, 1132
Mixed Transportation and Utility	1450, 1460
Floodways and Structures	1434, 1437
Rural Residential	1151, 1152, 1439
Under Construction	1700
Golf Courses	1810
Nurseries and Vineyards	2200, 2300
Maintenance Yards	1440
Urban Vacant	1900

Military Installations	1271 through 1273
Agriculture	2100, 2110, 2120, 2600
Harbor Facilities	1417, 4401
Animal Husbandry	2400, 2500, 2700
Mixed Commercial and Industrial	1500
Communication Facilities	1420, 1421
Mixed Urban	1600
Marina Facilities	4300
Receiving Waters	4100, 4200, 4400, 4500

(1) Based on Anderson Land Use Level III/IV Classification.
(2) Land use monitored

2.2.6 Geology/Soil

The Santa Monica Mountains are in the northwest portion of the watershed. Soil types for the remaining portions of the watershed are the following: Altamont Clay Loam, Yolo clay loam, Chino Silt Loam, Diablo Clay Loam, Hanford Fine Sandy Loam, Hanford Gravelly sandy Loam, Hanford Silt Loam, Montezuma Clay Adobe, Oakley fine Sand, Ramona Clay Loam, Ramona Loam, Ramona Sandy Loam, Santa Monica Mountains, Upper Los Angeles River, Yolo Loam, and Yolo Sandy Loam (Figure 7).

2.2.7 Significant Ecological Areas

Significant Ecological Areas (SEAs) are defined and delineated in conjunction with the Land Use and Open Space Elements of the Los Angeles County General Plan.

An area qualifies for recognition as an SEA if it possesses one or more of the following features, or classes:

i. Is the habitat of rare, endangered, or threatened plant or animal species.
ii Represents biotic communities, vegetative associations, or habitat of plant or animal species that are either one-of-a-kind, or are restricted in distribution on a regional basis.
iii. Represents biotic communities, vegetative associations, or

habitat of plant or animal species that are either one-of-a-kind, or are restricted in distribution in Los Angeles County.

iv Is habitat that at some point in the life cycle of a species or group of species, serves as a concentrated breeding, feeding, resting, or migrating grounds, and is limited in availability

v. Represents biotic resources that are of scientific interest because they are either extreme in physical/geographical limitations, or they represent an unusual variation in a population or community.

vi. Is an area important as game species habitat or as fisheries.

vii. Is an area that would provide for the preservaion of relatively undisturbed examples of the natural biotic communities in Los Angeles County.

viii. Is a special area, worthy of inclusion, but one which does not fit any of the other seven criteria.

Los Angeles County Department of Regional Planning (Regional Planning) is in the process of updating the SEAs coverage. The final SEAs information will be included in this plan when Regional Planning has finalized the SEAs coverage.

2.2.8 Threatened and Endangered Species

The watershed supports a variety of threatened and endangered species according to the California Department of Fish and Game's November 2000 California Natural Diversity Database (CNDDB). The CNDDB provides both state and federally listed threatened and endangered species of plants and animals (Figures 8b and 8a respectively).

The watershed hosts the following threatened or endangered plants:

- Beach Spectaclepod,
- Braunton's Milk-Vetch,
- Coastal Dunes Milk-Vetch,
- Lyon's Pentachaeta,
- Mexican Flannelbush,
- Salt Marsh Bird's-Beak, and
- Ventura Marsh Milk-Vetch.

These plants are scattered throughout the watershed with the Coastal Dunes Milk-Vetch spread over the largest area in the central portion of the watershed and the City of Santa Monica. Several parks host the plant species, Braunton's Milk-Vetch. Mexican Flannelbush may be found in the Palos Verdes Golf Club and surrounding area. Salt Marsh Bird's-Beak may be found across most of the city of Santa Monica.

Beach Spectaclepod may be found along the coastline of Manhattan Beach, Hermosa Beach, El Segundo, Marina Del Rey, and Santa Monica. Ventura Marsh Milk-Vetch may be found in portions of Marina Del Rey and the City of Los Angeles.

The watershed hosts the following threatened or endangered animals:

- Belding's Savannah Sparrow,
- California Black Rail,
- California Least Tern,
- Coastal California Gnatcatcher,
- El Segundo Blue Butterfly,
- Palos Verdes Blue Butterfly,
- Steelhead-Southern California ESU,
- Western Snowy Plover

These animals are predominantly found along the watershed's coastline. The Belding's Savannah Sparrow, California Black Rail, California Least Tern, Coastal California Gnatcatcher and the Western Snowy Plover are the five endangered or threatened birds that inhabit the watershed. Belding's Savannah Sparrow may be found in the City of Santa Monica as well as the central portion of the watershed. The California Black Rail and the Western Snowy Plover may be found along part of Dockweiler State Beach. The California Least Tern may be found occupying a small area just south of Marina Del Rey's channel entrance. The Coastal California Gnatcatcher species may be found in the central portion of the watershed as well as scattered throughout the southern portion of the watershed.

Three other animal species inhabit the watershed. El Segundo Blue Butterfly may be found in the vicinity of the Los Angeles airport and the Palos Verdes Blue Butterfly may be found scattered throughout the southern portion of the watershed. The Pacific Pocket Mouse, may be found in the coastal region from Marina Del Rey to Manhattan Beach as well as the coastal region in Redondo Beach. The Steelhead Southern-California ESU may be found near the southern tip of the watershed.

2.2.9 Sub-Drainage Areas

The watershed has five dominant drainage areas, which have been previously identified in the Santa Monica Bay Restoration Plan.

1) Pico Kenter Drainage Area (including the area known as Pacific Palisades)

   This drainage area encompasses approximately 42 square miles

and extends from the border with Castellammare, Pacific Palisades and the Santa Monica Canyon drainage areas in the north to the Ballona Creek drainage area in the south. The Pico Kenter Drain services the central and southern portions of the city of Santa Monica, extending northward into Brentwood. Two smaller drains service the northern portion of the city (along Montana Avenue and Wilshire Boulevard). The extreme southern portion of the city and the Venice area of Los Angeles are also serviced by two smaller drains (along Rose Avenue and Abbot Kinney Boulevard). Other small, local drains may be present.

2) Ballona Creek Drainage Area

Ballona Creek has the largest drainage area of approximately 130 square miles and effectively bisects the watershed, with the Pico-Kenter drainage area to the north and the remaining areas to the south.

3) South Bay/El Segundo Drainage Area

This 12 square mile area begins to the south of Ballona Creek, and extends southward to the city border of El Segundo and Manhattan Beach. Inland, this drainage area generally ends at Sepulveda Boulevard, areas to the east drain to the Dominguez Channel. There are four major outfalls in this area, serving Playa Del Rey, LA International Airport, a portion of Westchester and the western portion of El Segundo.

4) Manhattan/Hermosa/Redondo Beach drainage area

This drainage area covers approximately 12 square miles and generally follows the political boundaries of the cities of Manhattan Beach, Hermosa Beach and Redondo Beach, and includes small portions of Torrance and possibly the southern portion of Lawndale. The main outfall in this area is the Herondo Drain, but the area is served by numerous smaller drains that discharge directly to the beach.

5) Palos Verdes Peninsula Drainage Area

The Palos Verdes peninsula forms the southern end of the watershed. This area is unique as it is essentially a hilly area with short segments of storm drains flowing to the ocean. This drainage area is approximately 16 square miles.

2.3 Quality of Stormwater Runoff

2.3.1 Monitoring Activities

To characterize the quality of stormwater runoff in Los Angeles County, sampling of large area mass emissions sites has been performed under the 1990 and 1996 NPDES permits.

2.3.1.1 Monitoring Station Location

Los Angeles County Department of Public Works (LACDPW) has been monitoring four major drainage areas near their outfalls to the ocean. The following mass emission monitoring stations installed under the original 1990 Permit were retained under the 1996 Permit: the Los Angeles River Monitoring Station, the San Gabriel River Monitoring Station, the Ballona Creek Monitoring Station, and the Malibu Creek Monitoring Station.

The Ballona Creek Monitoring Station is located at the existing stream gage station (Stream Gage No. F38C-R) between Sawtelle Boulevard and Sepulveda Boulevard in the City of Los Angeles. At this location, which was chosen to avoid tidal influences, the upstream tributary watershed of Ballona Creek is 88.8 square miles. The entire watershed is 127.1 square miles. At the gauging station, Ballona Creek is a concrete lined trapezoidal channel.

2.3.1.2 Stormwater Sample Collection Methods

Grab and composite sample collection methods, defined below, are used to collect samples.

- Grab Sample - a discrete, individual sample taken within a short period of time. This method is used to collect samples for constituents that have very short holding times and specific collection or preservation needs. For example, samples for coliforms are taken directly into a sterile container to avoid non-resident bacterial contamination.
- Composite Sample - a mixed or combined sample created by combining a series of discrete samples (aliquots) of specific volume. Composite sampling is ideally conducted over the duration of the storm event.

Flow composite storm samples are obtained using an

automated sampler to collect samples at flow-paced intervals. Samples collected at each station are combined in the laboratory to create a single flow-weighted sample for analysis.

2.3.2 Comparison of Mass Emissions Concentrations to the Ocean Plan, Basin Plan, and California Toxics Rule

It should be noted that except for bacteria indicators, there are no numerical water quality standards that apply to stormwater or nonpoint source pollution. Current federal and state numerical standards apply only to point source pollution, such as sanitary sewage, industrial and point source discharges to the ocean and other water bodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff. An exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, the sampling results used to produce Tables 4 and 5 (see Appendix) are detected values before dilution, a factor allowed by the Ocean Plan.

Both the annual mean and median of the analyses of some 209 constituents sampled were compared to the water quality objectives outlined in the California Ocean Plan, the Los Angeles Basin Plan, and the California Toxics Rule. For stormwater bacteria indicators, the log mean of the Most Probable Number per 100 ml was compared to the objectives of AB411.

Table 4 shows constituents whose annual mean or median virtually exceeded the water quality objectives described above. Eleven chemical constituents were identified as constituents of concern from the comparison. For bacteria indicators, the log mean of the Most Probable Number per 100 ml was compared to the objectives of AB411. Total coliform and fecal coliform, and enterococcus are included due to their exceedance of AB411.

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2.3.3 Long-term Trend Analysis

A long-term trend analysis was performed for the fourteen water quality constituents selected through the screening procedure over the period from 1994 to 2000. The constituents analyzed include: total coliform, fecal coliform, fecal enterococcus, turbidity, total aluminum, dissolved copper, total copper, dissolved lead, total lead, total mercury, dissolved nickel, dissolved zinc, total zinc and bis(2-ethylhexyl)phthalate. Table 5 shows a summary of statistical analysis results of water quality data collected from the Ballona Creek Monitoring Station.

Tables 4 and 5 show that the bacteria indicator standards for total and fecal coliform were exceeded for every year. The tables also show that 1997-1998, the El Niño season, contributed the most virtual

exceedances (Twelve constituents exceeded the water quality objectives). It should be noted that there were no virtual exceedances by nutrients (compounds of nitrogen and phosphorus) of the three water quality objectives. The following represents a summary of water quality trends:

Total Coliform
High fluctuation of total coliform counts is noted over the monitoring period. All data during the entire monitoring period has exceeded the Basin Plan, Ocean Plan and AB 411 objective limits.

Fecal Coliform
Counts of fecal coliform fluctuate in a horizontal pattern, exceeding the Basin Plan, Ocean Plan and AB 411 objective limits throughout the entire monitoring period.

Fecal Enterococcus
The data exhibit an increasing trend for the first two storm seasons and a decreasing trend thereafter. It should be noted that not enough data was available for the statistical analysis between the 1996-1997 and 1997-1998 storm seasons.

Turbidity
The highest median concentration occurred in the 1997-1998 storm season which exceeded the Ocean Plan water quality objective; however, this appeared to be only temporary and median concentrations again plunged below the objective limit for the remaining monitoring period.

Total Aluminum
The highest median concentration occurred in the 1997-1998 storm season which exceeded the Basin Plan water quality objective; however, median concentrations dropped below the objective limit for the remaining monitoring period.

Dissolved Copper
Both mean and median concentrations exceeded the California Toxics Rule objective limit for the last three storm seasons. These concentrations have sharply decreased during this time period.

Total Copper
A peak median concentration was observed in the 1997-1998 storm season. Significant reduction in total copper concentrations is noted between the 1998-1999 and 1999-2000 storm seasons; however, both mean and median concentrations still exceed the Ocean Plan objective limit.

Dissolved Lead
Both mean and median concentrations exceeded the California Toxics Rule objective limits in the 1997-1998 storm season. Not enough data was available for the analysis during the rest of the monitoring period.

Total Lead
The data shows that median concentrations generally complied with the Ocean Plan objective limit, except for the 1997-1998 storm season's median concentration which exceeded the objective limit.

Total Mercury
Both mean and median concentrations exceeded the Ocean Plan and Basin Plan objective limits in the 1996-1997 storm season. Not enough data was available over the rest of the monitoring period for statistical analysis.

Dissolved Nickel
The median concentrations stayed constant below the California Toxics Rule objective limits between the 1996-1997 and 1997-1998 storm seasons. Not enough data was available over the rest of the monitoring period for the statistical analysis.

Dissolved Zinc
Dissolved zinc concentrations generally complied with the California Toxics Rule objective limits, except the mean concentration that was observed in the 1997-1998 storm season.

Total Zinc
Both mean and median concentrations of total zinc exceeded the Ocean Plan objective limit from the 1996-1997 storm season to the 1998-1999 storm season. No trend was observed during the monitoring period.

Bis(2-ethylhexyl)phthalate
Both mean and median concentrations exceeded the Ocean Plan objective limit from the 1996-1997 storm season to the 1998-1999 storm season. Not enough data was available for the analysis during the rest of the monitoring period.

2.3.4 Santa Monica Bay Receiving Water Impact Study

The Santa Monica Bay Receiving Waters Impact Study concludes that zinc was the most important toxic constituent identified in Santa Monica Bay stormwater, even though zinc concentrations in the toxic portion of the discharge plume were typically below laboratory toxicity levels. Copper and other unidentified constituents may also be responsible for some of the toxicity measured in Santa Monica Bay. The measured concentrations of zinc and copper in Ballona Creek stormwater were estimated to account for 5% - 44% of the observed toxicity. Sediments

offshore of Ballona Creek generally had higher concentrations of urban contaminants, including common stormwater constituents, such as lead and zinc. Virtually every stormwater sample tested in the study was toxic to sea urchin fertilization.

2.4 Significant Stormwater Issues Within the WMA

A modified list of significant stormwater issues within the WMA identified in the Los Angeles Regional Water Quality Control Board's (Regional Board) Watershed Management Initiative Chapter is as follows:

- Trash loading from creek (Trash Total Maximum Daily Load, TMDL),
- Sediment contamination by heavy metals from creek to Marina del Rey Harbor and offshore,
- Toxicity of both dry weather and storm runoff in creek,
- High bacterial indicators at mouth of creek (TMDL), and
- Currently scheduled TMDLs for the next 6-years are: trash, Nutrients, Coliform, Metals, and Chlorpyrifos.

3.0 Watershed Management Plan

3.1 Source Control Strategies

3.1.1 Non-structural Controls - regulatory policies/programs to minimize threats to stormwater and urban runoff quality.

Permittees within this WMA have adopted the SQMP, jointly developed under the 1996 NPDES Permit, in its entirety as effective and comprehensive procedures for controlling pollution runoff. The Permittees within this WMA are implementing all applicable requirements of the SQMP. Through the extensive effort to meet all the Permit requirements, the Permittees within this WMA have made significant progress in reducing urban runoff pollution. The Permittees within this WMA anticipate further success as SQMP requirements are carried forward and reinforced in future years. The SQMP serves as guidance and requirements under this WMAP.

LACDPW has updated the Development Planning and Public Agency Activities Model Program of the SQMP to reflect the recent approval of a Standard Urban Stormwater Mitigation Plan (SUSMP) requirements. An executive summary of the SQMP has also been added to the beginning of each individual model program of the SQMP. Additional revisions to all model programs will be made following the adoption of the 2001 NPDES Permit.

Under the 2001 NPDES permit, the Permittees within this WMA anticipate that additional efforts will be focused on controlling trash, nutrients, coliform, metals, and Chlorpyrifos. The Permittees within this WMA anticipate working with the Regional Board staff to develop and implement a plan for the TMDLs to monitor and control these pollutants to the maximum extent practicable.

3.1.2 Structural Controls - any existing and proposed potential projects to reduce/minimize pollutants of stormwater and urban runoff.

Table 3. Improvement Projects for Stormwater and Urban Runoff

Permittee	Projects:
Beverly Hills	Current projects: ▸ Installed a filter in one of their catch basins on the southeast corner of Palm Avenue in December of 1999 ▸ Installed inserts in 3 catch basin which separately located on Palm Drive, Gale Drive, and Schuyler Road ▸ Continue testing new BMPs as they are developed.
Caltrans	Future/Proposed Projects: ▸ Designed a Mulit-Chambered Treatment Train at their Metro Maintenance Station.

LACDPW	Current projects: ▸ Installed a debris net in the Ballona Creek in 1993. The net is located downstream of Lincoln Avenue in the Playa Del Rey area. The amount of debris it captures is dependant on the size of the first flush. From 1997-1998 the net captured 180 cubic yards and from 1998-1999 it captured 25 cubic yards. The county has recently purchased a conveyer that will collect and lift the debris into a truck. ▸ Installed four low flow diversions in the Watershed in the year 2000. They are located at Ashland Avenue in City of Santa Monica, Herondo Street in City of Redondo Beach, Brooks Avenue and Pershing Drive in City of Los Angeles. Residual flows of 25 gallons/minute. ▸ Installed a Stormceptor in a County Road Maintenance Field Facility located in Westchester, but no measurements have been taken to determine the amount of debris it has collected. Future/Proposed Projects: ▸ Received funds for the construction of a Continuous Deflection Separator (CDS). ▸ Received funds from an MTA grant to install 200 catch basin screens. ▸ Los Angeles County Beaches and Harbors plans to install a trash separator (CDS unit) in Marina Del Rey on Fiji Way. ▸ Plan on installing catch basin inserts in all maintenance yards' catch basins, catch basin debris excluders in selected catch basins, and in-line storm water clean-up devices in selected storm drains. ▸ Investigate the construction of permanent roof cover for existing and new material storage areas and fuel dispensing islands in some of their field facilities.
Hermosa Beach	Current projects: ▸ Received Prop. A fund to install a CDS and 40 catch basin inserts.

City of L.A.	Current projects: ▸ Grated Drop Catch Basin inlet with filter, NW corner of Union Ave. and 11th St., installed in June 99 and 8461 Vermont Ave., May 96. ▸ Catch Basin inlet with filter, SE corner of 6th and Bixel St., installed in August 99. ▸ Catch Basin inlet with filter, NE corner of 20th St. and Maple Ave., June 99. ▸ Catch Basin Inlet with liner Grated, 1700 Wilshire Blvd. across Little St., June 99. ▸ Infiltration Basin, 8461 Vermont Ave., May 96 and 800 N. Venice Blvd., May 99. ▸ San Filter, SE corner of Pico Blvd. & Midvale, June 93. ▸ Oil and water separators, 300 N. Venice Blvd., May 99. ▸ Low Flow Diversion, Thornton Ave., October 99. ▸ BMP house, 1828 50th St., August 98. ▸ Catch basin screens, Convention Center & Vermont Ave., July 00. Future/Proposed Projects: ▸ Trash separators - 3 locations ▸ Oil & water separators - 3 locations ▸ Catch basin inlets - 6 locations ▸ Low-flow diversion - 4 locations ▸ Urban runoff reclamation facility - 1 location ▸ Catch basin filters - along the Venice canals
Manhattan Beach	Current projects: ▸ Installed two CDS units, one at City Yard on Bell Avenue and one at the El Porto Parking Lot. ▸ Received funding from Proposition 13 to install another CDS unit in Polliwog Park. Within the next month the city plans to install ten catch basin inserts in their coastal area.
Rancho Palos Verdes	Current projects: ▸ Received Prop. A fund to install 24 catch basin inserts.
Santa Monica	Current projects: ▸ Installed 485 catch basin inlet screens and filters and 5 storm treatment systems at Bergamot Station and Beach facility. ▸ Installed 3 CDS units - City yards, Pier & Pico Kenter Storm Drains. ▸ Constructed the first urban runoff recycling facility in the Country.

3.2 Recommended Studies

Over the next five years, the Permittees within this WMA anticipate providing guidance on the scope of work for any studies related to receiving water impacts. In particular, the Permittees within this WMA anticipate that future studies may address the following issues:

i. The removal efficiency vs. cost comparison for all adopted Performance Standards to assist in effectively focusing resources.

ii The pollutant removal efficiencies of all structural devices required for new development to assist in properly sizing devices and in excluding ineffective ones.

iii. An evaluation of the current vs. "natural state" of the Ballona Creek's sediment loading, sediment discharge periods, sediment gradation, and environmental impact taking into account factors such as paved areas and riparian corridor restriction.

iv. Investigate regional solutions to address stormwater quality (i.e. use of Spreading Grounds, Retention Basins, and other similar activities).

v. Studies that evaluate the actual impact of pollutants, and pollutant levels, on the beneficial uses of receiving waters.

3.3 Funding Resources

A variety of different grant funding sources are available to assist in implementing the NPDES permit requirements. They can generally be categorized into specific grant programs and on-going grant programs, or legislative appropriations.

3.3.1 Specific Grant Programs

These are usually bond issues or legislative funded programs administered by state, local agencies or conservancies. The most recent of these is Proposition 13. The majority of funds not specifically identified and budgeted by the state are being administered through competitive grant programs by the following state agencies:

i State Water Resources Control Board. The State Board is in turn delegating certain responsibilities to the Regional Boards. For more information, please see their website, http://www.swrcb.ca.gov/prop13/ index.html

ii Resources Agency. This large "umbrella" state agency has either assigned or had appropriated/designated certain funding to the various departments, boards and commissions, conservancies,

and special programs. This agency has just recently been legislatively charged with the responsibility to develop a comprehensive listing of the available funding sources, including federal, state, local, and private, for water quality improvements. It is to be posted on the internet by November 1, 2002. For more information, see their website, http://ceres.ca.gov/cra

iii Department of Water Resources. This Department within the Resources Agency has funding available for water replenishment projects. For more information, please see their website. http://wwwdwr.water.ca.gov/WaterBond2000

3.3.2 On-Going Grant Programs

i The state agencies noted above also have on-going grant programs. Their websites are excellent information sources.

ii Federal Government. There are many funding sources for water quality improvements. The sources are too numerous to list, however there is an excellent website at the Federal EPA that lists the federal and other sources. The site is: http://www.epa.gov/OWOW/watershed/wacademy/fund.html

3.3.3 Legislative Appropriations.

Local jurisdictions can also work with stakeholders (Table 6) and elected representatives to pass legislation that funds water quality improvements. This can be done at both the local and national levels. Bond issues are another local and state method to fund improvements.

4.0 References

Los Angeles County Department of Public Works, *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report*, J19uly 31, 2000

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Woodward-Clyde and Psomas and Associates, *Evaluation of Land Use Monitoring Stations*, 1996

Michelle Miller, *A Watershed Management Plan: Steps to Protect Your Water Supply*, http://www.epa.gov/OWOW/watershed/Proceed/miller.html

Regional Board, *Watershed Management Initiative Chapter, Executive Summary*, January 2000

Significant Ecological Areas in the Santa Clarita Valley, http://www.scope.org/scope/sea/index.html

CWIS, *Ballona Wetlands*, http://ceres.ca.gov/

Heal the Bay, *Ballona Creek*

5.0 Appendix

Table 4. Comparison of Annual Mean and Median Concentrations to Objectives

Class Constituent	DL	Units	Guidelines and Standards					Ballona Creek						
			Ocean Plan[g]	Basin Plan[g]	AB 411	California Toxics Rule (freshwater)[d]	California Toxics Rule (saltwater)[d]	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	Total
Total Rainfall (in.)								14.76	^	11.18	28.28	9.48	10.59	
Total Coliform	20	MPN/100ml	1000[b]	70	10,000 (instantaneous)		-	X	X	X	X	X	X	6
Fecal Coliform	20	MPN/100ml	200[b]	200	400 (instantaneous)			X	X	X	X	X	X	6
Fecal Enterococcus	20	MPN/100ml	24[b]		104			X	X	-	-	X	X	4
Turbidity	0.1	NTU	75[b]					-	-		X	X		2
Total Aluminum	100	mg/l		1000				-	-	-	X			1
Dissolved Copper	5	mg/l				9	3.1	-	-		X	X	X	3
Total Copper	5	mg/l	12[e]					-	-		X	X	X	3
Dissolved Lead	5	mg/l				2.5	8.1	-	-	-	X	-	-	1
Total Lead	5	mg/l	8[e]					-	-	X	X			2
Total Mercury	1	mg/l	0.16[e]	2				-	-	X	-	-	-	1
Dissolved Nickel	5	mg/l				52	8.2	-	-		X	-	-	1
Dissolved Zinc	50	mg/l				120	81	-	-		X		-	1
Total Zinc	50	mg/l	80[e]					-	-	X	X	X		3
Bis(2-ethylhexyl)phthalate	1	mg/l	3.5[b]					-	-	X	X	X	-	3
Total								3	3	6	12	8	5	37

X = Greater than objective. Except for indicator bactena, there are no numerical water quality standards that apply to stormwater or "non-point source" pollution.

Current federal and state numerical standards apply only to "point source pollution," such as sanitary sewage, industrial and commercial discharges to the ocean,

and other waterbodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff, and any exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, a direct comparison of the sampling results with the Ocean Plan standards cannot be made since the results presented in the table are detected values before dilution, a factor allowed by the Ocean Plan.

^ = Rain gage not active

- = Statistically invalid data, not enough samples or data above detection limit collected

NS = Not Sampled

Blank = No Exceedance

DL = Detection Limit

a) Criteria based on daily maximum

b) Criteria based on 30-day average

c) Criteria for the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, 1,12-benzoperylene, benzo(a)pyrene, chrysene, dibenzo(ah)anthracene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene.

d) Criteria continuous concentration which equals the highest concentration of pollutant to which aquatic life can be exposed for an extended period time (4 days) without deleterious effects.

e) Criterion expressed in the total recoverable form.

f) Criteria maximum concentration which equals the highest concentration of pollutant to which aquatic life can be exposed for a short period time without deleterious effects.

g) Except for indicator bactena, there are no numerical water quality standards that apply to stormwater or "non-point source" pollution. Current federal and state numerical standards apply only to "point source pollution," such as sanitary sewage, industrial and commercial discharges to the ocean, and other waterbodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff, and any exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, a direct comparison of the sampling results with the Ocean Plan standards cannot be made since the results presented in the table are detected values before dilution, a factor allowed by the Ocean Plan.

n) Detection limits have changed throughout the monitoring process. Only data matching the current detection limit is displayed in this table. The Data Included Since field indicates the first year of the storm season with the current detection limit.

Table 5. Summary of Statistical Analysis Results of Water Quality Data

Ballona Creek

Constituent	DL	Units	1994-95 No. of Samples	1994-95 No. of Non detects	1994-95 Percent Detects	1994-95 Mean	1994-95 Median	1994-95 CV	1995-96 No. of Samples	1995-96 No. of Non detects	1995-96 Percent Detects	1995-96 Mean	1995-96 Median	1995-96 CV
Total Coliform	20	MPN/100ml	6	0	100	[illegible]	[illegible]	1.01	6	0	100	[illegible]	[illegible]	1.26
Fecal Coliform	20	MPN/100ml	6	0	100	[illegible]	[illegible]	0.84	6	0	100	8,301,667	[illegible]	1.60
Fecal Enterococcus	20	MPN/100ml	6	0	100	[illegible]	[illegible]	1.74	6	0	100	1,208,333	1,380,000	0.48
Turbidity	0.1	NTU	0	0	S I D	S I D	S I D	S I D	1	0	100	S I D	S I D	S I D
Total Aluminum	100	µg/l	0	0	S I D	S I D	S I D	S I D	0	0	S I D	S I D	S I D	S I D
Dissolved Copper	5	µg/l	0	0	S I D	S I D	S I D	S I D	1	1	0	S I D	S I D	S I D
Total Copper	5	µg/l	0	0	S I D	S I D	S I D	S I D	1	0	100	S I D	S I D	S I D
Dissolved Lead	5	µg/l	0	0	S I D	S I D	S I D	S I D	1	1	0	S I D	S I D	S I D
Total Lead	5	µg/l	0	0	S I D	S I D	S I D	S I D	1	1	0	S I D	S I D	S I D
Total Mercury	1	µg/l	0	0	S I D	S I D	S I D	S I D	1	0	100	S I D	S I D	S I D
Dissolved Nickel	5	µg/l	0	0	S I D	S I D	S I D	S I D	1	1	0	S I D	S I D	S I D
Dissolved Zinc	50	µg/l	0	0	S I D	S I D	S I D	S I D	1	1	0	S I D	S I D	S I D
Total Zinc	50	µg/l	0	0	S I D	S I D	S I D	S I D	1	1	0	S I D	S I D	S I D
Bis(2-ethylhexyl)phthalate	1	µg/l	0	0	S I D	S I D	S I D	S I D	1	1	0	S I D	S I D	S I D

Constituent	1996-97 No. of Samples	1996-97 No. of Non detects	1996-97 Percent Detects	1996-97 Mean	1996-97 Median	1996-97 CV	1997-98 No. of Samples	1997-98 No. of Non detects	1997-98 Percent Detects	1997-98 Mean	1997-98 Median	1997-98 CV
Total Coliform	6	0	100	[illegible]	[illegible]	2.22	6	0	100	[illegible]	1,100,000	1.77
Fecal Coliform	6	0	100	73,000	67,800	0.64	6	0	100	[illegible]	700,000	2.04
Fecal Enterococcus	1	0	100	S I D	S I D	S I D	0	0	S I D	S I D	S I D	S I D
Turbidity	4	0	100	30	[illegible]	0.52	6	0	100	81	[illegible]	0.40
Total Aluminum	4	4	0	S I D	S I D	S I D	7	0	100	[illegible]	[illegible]	[illegible]
Dissolved Copper	4	0	100	2.3	2.0	[illegible]	7	0	100	30	[illegible]	0.80
Total Copper	4	0	100	12	10	0.47	7	0	100	[illegible]	40	[illegible]
Dissolved Lead	4	4	0	S I D	S I D	S I D	7	4	43	10	2.8	1.47
Total Lead	4	0	100	[illegible]	[illegible]	[illegible]	7	2	71	[illegible]	8.0	1.10
Total Mercury	4	3	25	[illegible]	0.60	[illegible]	6	6	0	S I D	S I D	S I D
Dissolved Nickel	4	3	25	2.8	2.6	[illegible]	7	4	43	11.3	2.6	1.72
Dissolved Zinc	4	2	50	40	[illegible]	0.61	7	4	43	[illegible]	25	1.08
Total Zinc	4	0	100	[illegible]	81	0.21	7	0	100	[illegible]	847	0.81
Bis(2-ethylhexyl)phthalate	4	1	75	7	6.0	1.00	6	1	83	12	12	[illegible]

Constituent	1998-99 No. of Samples	1998-99 No. of Non detects	1998-99 Percent Detects	1998-99 Mean	1998-99 Median	1998-99 CV	1999-2000 No. of Samples	1999-2000 No. of Non detects	1999-2000 Percent Detects	1999-2000 Mean	1999-2000 Median	1999-2000 CV
Total Coliform	13	1	92	[illegible]	240,000	[illegible]	6	0	100	[illegible]	[illegible]	0.67
Fecal Coliform	13	1	92	[illegible]	[illegible]	[illegible]	6	0	100	[illegible]	[illegible]	[illegible]
Fecal Enterococcus	6	0	100	[illegible]	140,000	0.67	6	0	100	[illegible]	[illegible]	1.70
Turbidity	16	0	100	91	[illegible]	[illegible]	12	0	100	[illegible]	[illegible]	0.61
Total Aluminum	16	1	94	[illegible]	162	[illegible]	12	0	100	341	270	[illegible]
Dissolved Copper	16	0	100	8.3	[illegible]	[illegible]	12	3	75	[illegible]	[illegible]	0.80
Total Copper	16	0	100	18	18	0.44	12	0	100	[illegible]	12	0.71
Dissolved Lead	16	16	0	S I D	S I D	S I D	12	12	0	S I D	S I D	S I D
Total Lead	16	11	31	6.5	2.5	1.60	12	6	50	4.0	2.5	[illegible]
Total Mercury	16	16	0	S I D	S I D	S I D	12	12	0	S I D	S I D	S I D
Dissolved Nickel	16	14	13	S I D	S I D	S I D	12	11	8	S I D	S I D	S I D
Dissolved Zinc	16	9	44	60	25	[illegible]	12	11	8	S I D	S I D	S I D
Total Zinc	16	2	88	[illegible]	83	0.62	12	4	67	73	64	1.10
Bis(2-ethylhexyl)phthalate	4	1	75	11	7.2	1.58	1	1	0	S I D	S I D	S I D

CV = Coefficient of variation
DL = Detection Limit
S I D = Statistically Invalid Data, not enough data above detection limit collected

Table 6 WATERSHED MANAGEMENT
STAKEHOLDER LIST

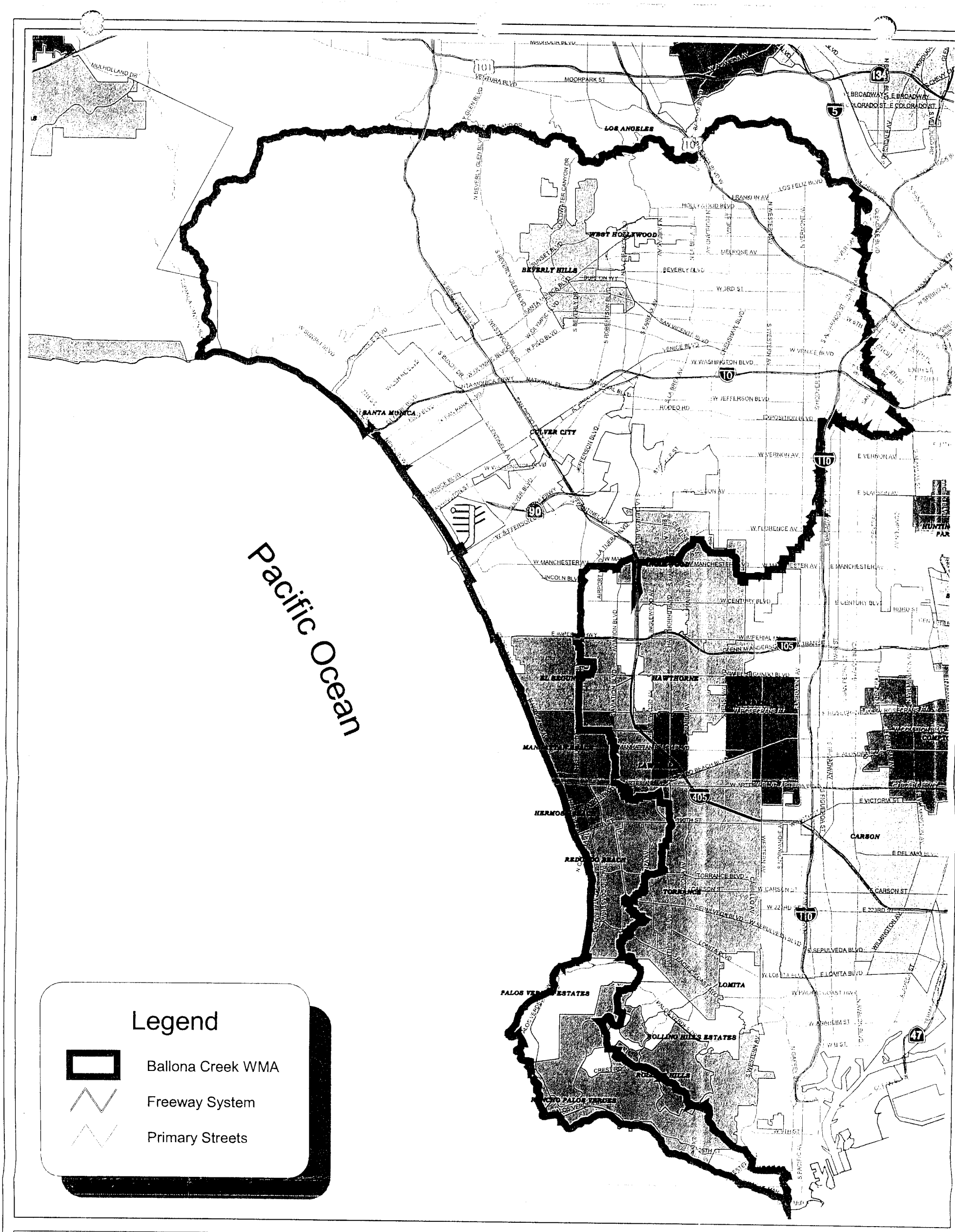
Stakeholders	Jurisdiction	WATERSHED INTERESTS						
		ANT	BAL	DOM	LAR	MAL	SC	SQR
Beverly Hills	Chamber of Commerce		X					
Culver City	Chamber of Commerce		X					
El Segundo	Chamber of Commerce		X					
Hermosa Beach	Chamber of Commerce		X					
Los Angeles	Chamber of Commerce		X					
Manhattan Beach	Chamber of Commerce		X					
Palos Verdes Estates	Chamber of Commerce		X					
Redondo Beach	Chamber of Commerce		X					
Santa Monica	Chamber of Commerce		X					
West Hollywood	Chamber of Commerce		X					
Beverly Hills	City		X					
Culver City	City		X					
El Segundo	City		X					
Hermosa Beach	City		X					
Los Angeles	City		X	X	X			
Manhattan Beach	City		X					
Palos Verdes Estates	City		X					
Rancho Palos Verdes	City		X					
Redondo Beach	City		X					
Rolling Hills	City		X					
Rolling Hills Estates	City		X					
Santa Monica	City		X					
West Hollywood	City		X					
Southern California Edison	Commercial		X	X	X	X		X
American Land Conservancy	Conservancy		X	X		X		
Ballona Watershed Council and Conservancy	Conservancy		X					
California Coastal Conservancy	Conservancy		X	X		X		
Community Conservancy International	Conservancy		X					
Foothills Wildlife Conservancy	Conservancy		X	X		X		
Mountains Recreation and Conservation Authority	Conservancy		X	X		X		
Santa Monica Mountains Conservancy	Conservancy		X	X		X		
State of California Coastal Conservancy	Conservancy		X	X		X		
Gateway Cities	Council of Government		X	X	X	X		X
Southern California Association of Governments	Council of Government		X	X	X			X
County of Los Angeles Department of Parks and Recreation	County	X	X	X	X	X	X	X
County of Los Angeles Department of Public Works	County	X	X	X	X	X	X	X
County of Los Angeles Department of Regional Planning	County	X	X	X	X	X	X	X
County of Los Angeles Department of Water and Power	County	X	X	X	X	X	X	X
County of Los Angeles Fire Department	County	X	X	X	X	X	X	X
County of Los Angeles Open Space District	County	X	X	X	X	X	X	
County of Los Angeles Sanitation Districts	County	X	X	X	X	X	X	X
Metropolitan Transportation Authority	County	X	X	X	X	X	X	X
Supervisor Don Knabe, District 4	County Supervisor		X	X	X			
Supervisor Yvonne Brathwaite Burke, District 2	County Supervisor		X	X	X			
Supervisor Zev Yaroslavsky, District 3	County Supervisor		X		X	X		
Ballona Wetlands Foundation	Environmental		X					
California Exotic Pest	Environmental		X	X		X		X
California Native Plant Society	Environmental	X	X	X	X	X	X	X
Environment Now	Environmental		X	X		X		
Equestrian Trails Incorporated	Environmental		X	X		X		X
Friends of the Ballona Wetlands	Environmental		X					
Heal the Bay	Environmental		X	X	X	X		X
LA Bicycle Advisory Comm	Environmental		X	X	X	X		X
LA City Bicycle Coalition	Environmental		X	X	X	X		X
LA County Bicycle Coalition	Environmental		X	X	X	X		X
LA Wheelmen Club	Environmental		X	X		X		
North East Trees	Environmental	X	X	X	X	X	X	X
Plant Council (look up)	Environmental		X	X		X		X
Preservation Authority (look up)	Environmental		X	X		X		X
Sierra Club- LA Chapter	Environmental		X	X	X	X		X
Surfrider Foundation	Environmental		X	X	X	X		X
TreePeople	Environmental	X	X	X	X	X	X	X
Environmental Protection Agency	Federal	X	X	X	X	X	X	X
National Environmental Policy Act	Federal		X	X	X	X		X
National Marine & Fisheries Service	Federal	X	X	X	X	X	X	X
National Parks Service	Federal	X	X	X	X	X	X	X
National Resource Conservation	Federal	X	X	X	X	X	X	X
United States Army Corp of Engineers	Federal	X	X	X	X	X	X	X
United States Department of the Interior National Park Service	Federal	X	X	X	X	X	X	X
United States Fish and Wildlife Service	Federal	X	X	X	X	X	X	X
United States Forest Service - Angeles National Forest	Federal	X	X	X	X	X	X	X
Water Quality Authority Board	Federal		X	X		X		X
Air Quality Management District	Local		X	X	X	X		X
City Police	Local		X	X	X	X		X
Police Departments	Local		X	X		X		X
Sheriffs Departments	Local		X	X		X		X
American Institute of Architects	Organization		X	X	X	X		X
Ballona Creek Renaissance	Organization		X					
Los Angeles County Coalition	Organization		X	X		X		
Mountains Restoration Trust	Organization		X	X		X		
National Audubon Society	Organization		X	X	X	X		X
National Resources Defense Council	Organization		X	X		X		
Santa Monica Bay Restoration Project	Organization		X	X		X		
Santa Monica Baykeeper	Organization		X	X		X		
Southeast Water Coalition	Organization		X	X		X		
Trust for Public Land	Organization		X	X	X	X		X
Duvivier Architects	Private Firm		X					
Genesis LA Economic Growth Corporation	Private Firm		X					
Landscape Architects	Private Firm		X					
Playa Vista	Private Firm		X					
Robert Harris Architecture and Urban Design	Private Firm		X					
Camelot Condominium Owners' Assoc	Residential		X					
Mar Vista Gardens	Residential		X					
Raintree Condominiums & Townhouse Assoc	Residential		X					
Assemblymember Alan Lowenthal, 54	State Assembly District		X	X				X
Assemblymember Edward Vincent, 51	State Assembly District		X	X				
Assemblymember George Nakano, 53	State Assembly District		X	X				
Assemblymember Gil Cedillo, 46	State Assembly District		X		X			
Assemblymember Herb Wesson, 47	State Assembly District		X					
Assemblymember Roderick Wright, 48	State Assembly District		X					
Assemblymember Sheila James Kuehl, 41	State Assembly District		X	X				
Assemblymember Wally Knox, 42	State Assembly District		X		X			
Congressmember Henry A. Waxman, 29	State Congressional District		X		X			
Congressmember Lucille Roybal-Allard, 33	State Congressional District		X		X			
Congressmember Maxine Waters, 35	State Congressional District		X	X	X			
Congressmember Steven T Kuykendall, 36	State Congressional District		X	X				
Congressmember Vacant, 32	State Congressional District		X					
Congressmember Xavier Becerra, 30	State Congressional District		X		X			
California Conservation Corp	State Departments		X	X	X	X		X
California Department of Fish and Game	State Departments	X	X	X	X	X	X	X
California Department of Parks and Recreation	State Departments	X	X	X	X	X	X	X
California Department of Toxic Substance Control	State Departments		X	X		X		
California Department of Transportation	State Departments	X	X	X	X	X	X	X

Table 6 WATERSHED MANAGEMENT
STAKEHOLDER LIST

Stakeholders	Jurisdiction	WATERSHED INTERESTS						
		ANT	BAL	DOM	LAR	MAL	SC	SGR
California Department of Water Resources	State Departments	X	X	X	X	X	X	X
California Environmental Protection Agency	State Departments	X	X	X	X	X	X	X
California Environmental Quality Act	State Departments	X	X	X	X	X	X	X
Southern California Association of Governments	State Departments	X	X	X	X	X	X	X
State Department of Parks & Recreation	State Departments	X	X	X	X	X	X	X
State Department of Water Resources	State Departments	X	X	X	X	X	X	X
State Soils Conservation	State Departments	X	X	X	X	X	X	X
SWRCB Regional Water Quality Control Board, LA Region	State Departments	X	X	X	X	X	X	X
Senator Betty Karnette, 27	State Senate District		X	X	X			X
Senator Debra Bowden, 28	State Senate District		X	X	X			
Senator Kevin Murray, 26	State Senate District		X					
Senator Richard G. Polanco, 22	State Senate District		X		X			
Senator Teresa Hughes, 25	State Senate District		X	X	X			X
Senator Tom Hayden, 23	State Senate District		X					
California-American Water Company	Water Purveyor		X	X		X		X
Central & West Basin MWD	Water Purveyor		X	X		X		X
Metropolitan Water Districts	Water Purveyor		X	X	X	X		X
United Water Conservation District	Water Purveyor		X	X		X	X	X
Water Replenishment District	Water Purveyor		X	X		X		X

ANT: Antelop Valley
BAL: Ballona Creek
DOM: Dominguez Channel/L.A. Harbor
LAR: Los Angeles River
MAL: Malibu Creek
SC: Santa Clara River
SGR: San Gabriel River

R0000101



Legend

- Ballona Creek WMA
- Freeway System
- Primary Streets

LOS ANGELES COUNTY PUBLIC WORKS — Public Service That Works

Ballona Creek Watershed Management Area Plan

Figure 1. Watershed Boundary

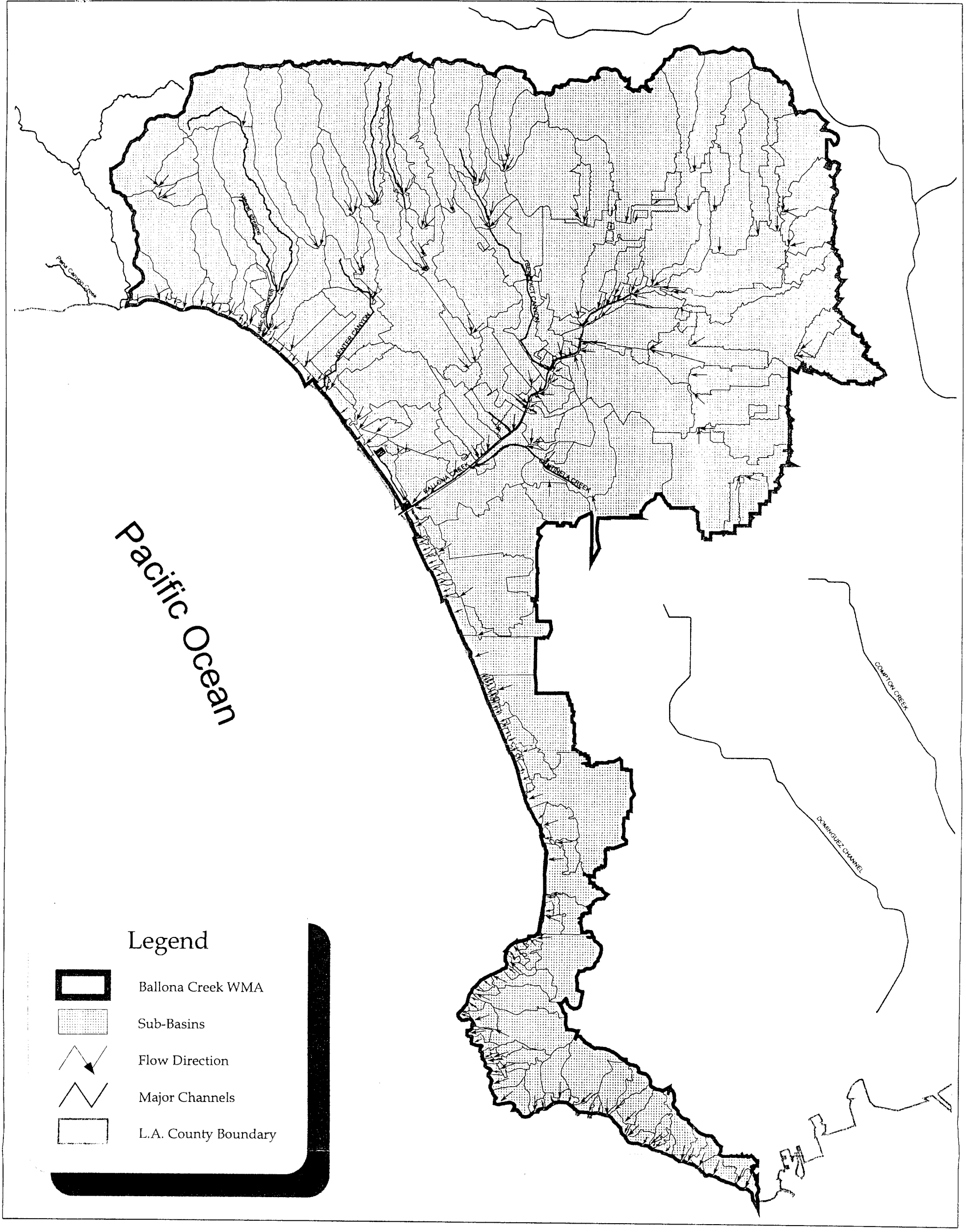
R0000102

N W E S

1 0 1 2 3 Miles

P:\eppub\water\gis\projects\wmaps\BallonaWMA.apr

August 30, 2000



LOS ANGELES COUNTY PUBLIC WORKS
Public Service That Works

Ballona Creek Watershed Management Area Plan

Figure 2. Sub-basins and Flow Directions

R0000103

N
W E
S

1 0 1 2 3 Miles

P:\epdub\water\gis\projects\wmaps\BallonaWMA.apr

August 30, 2000

Pacific Ocean

Legend

- L.A. County Boundary
- Ballona Creek WMA
- Freeway System
- Contour Lines

Ballona Creek
Watershed Management Area Plan

Figure 3. Contours

R0000104

N W E S

1 0 1 2 3 Miles

Pacific Ocean

Legend

- L.A. County Boundary
- Ballona Creek WMA
- Freeway System
- L.A. County Flood Control Drains
- Reservoirs, Debris, and Retention Basins
- Spreading Grounds

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

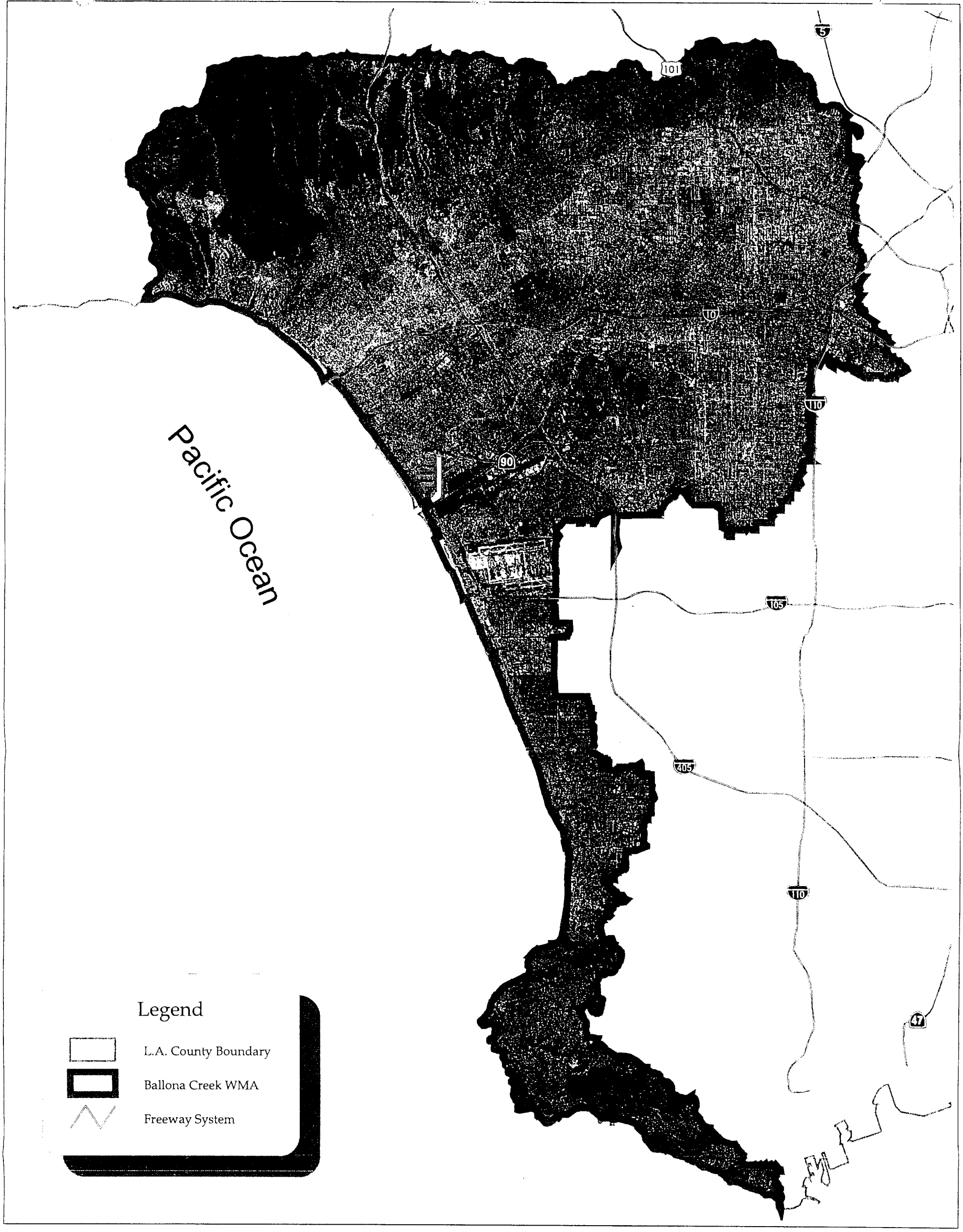
R0000105

Ballona Creek Watershed Management Area Plan

Figure 4. Drainage Facilities

N W E S

1 0 1 2 3 Miles



LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

R0000106

Ballona Creek Watershed Management Area Plan

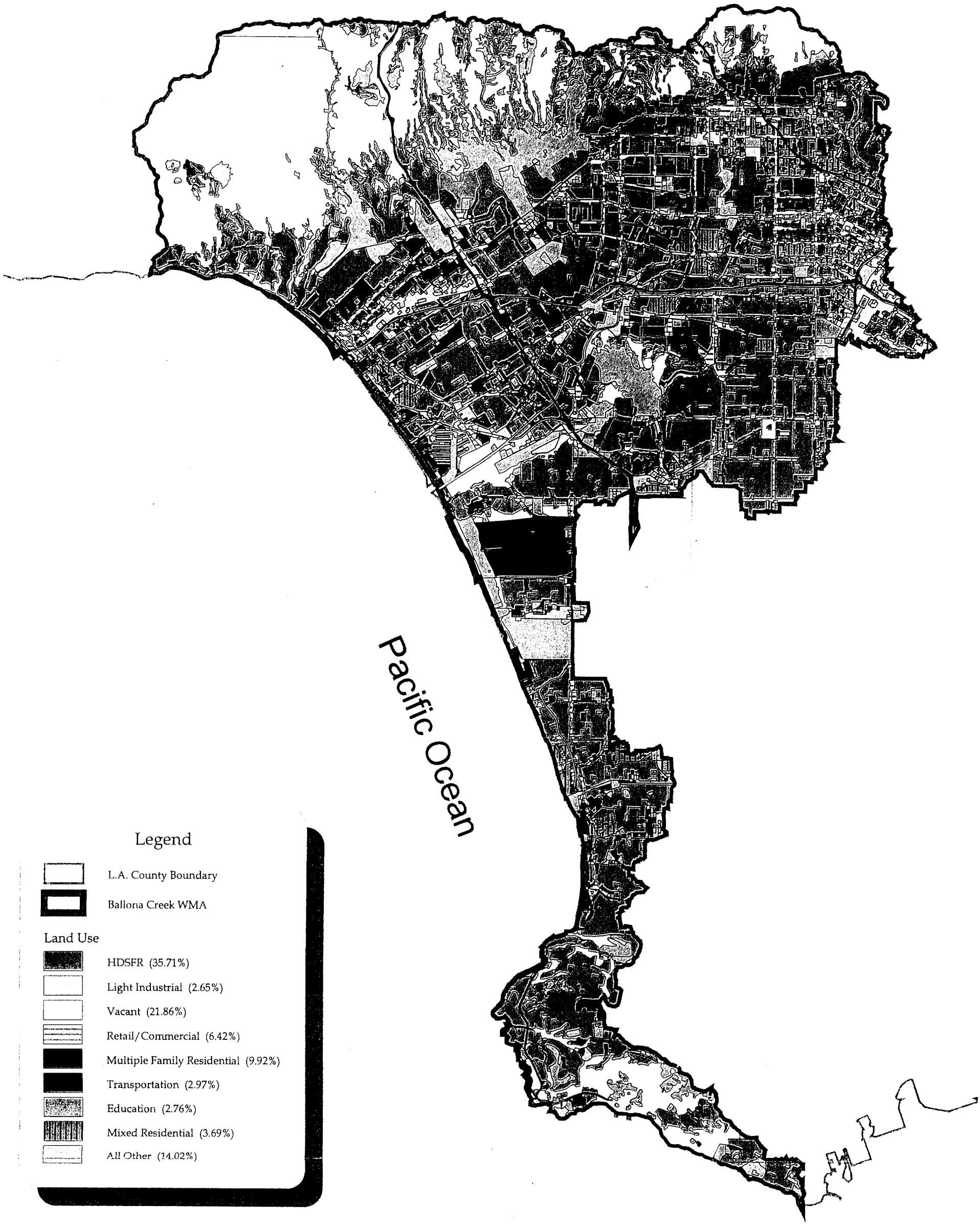
Figure 5. Aerial Photographs

N W E S

1 0 1 2 3 Miles

P:\eppub\water\gis\projects\wmaps\BallonaWMA.apr

August 30, 2000



LOS ANGELES COUNTY PUBLIC WORKS
Public Service That Works

R0000107

Ballona Creek Watershed Management Area Plan

Figure 6. Land Use

N
W E
S

1 0 1 2 3 Miles

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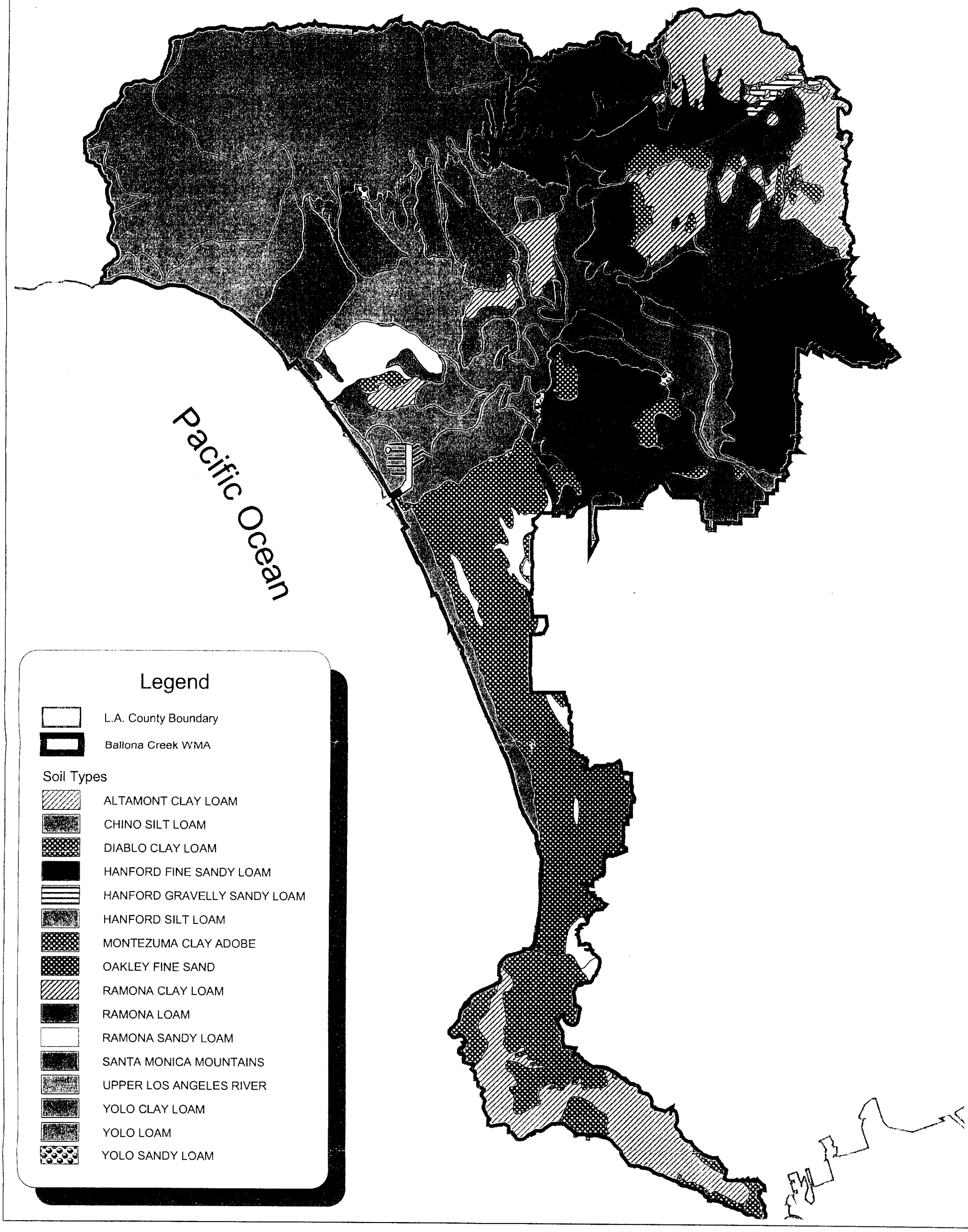
August 30, 2000



LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

R0000108

Ballona Creek Watershed Management Area Plan

Figure 7. Soil

N W E S

1 0 1 2 3 Miles

P:\epdub\water\gis\projects\wmaps\BallonaWMA.apr

August 30, 2000

Pacific Ocean

Legend

- Freeway System
- Primary Streets

Federally Listed As Threatened and Endangered Species

- BRAUNTON'S MILK-VETCH
- CALIFORNIA LEAST TERN
- COASTAL CALIFORNIA GNATCATCHER
- COASTAL DUNES MILK-VETCH
- EL SEGUNDO BLUE BUTTERFLY
- LYON'S PENTACHAETA
- MEXICAN FLANNELBUSH
- PACIFIC POCKET MOUSE
- PALOS VERDES BLUE BUTTERFLY
- SALT MARSH BIRD'S-BEAK
- SOUTHERN STEELHEAD - SOUTHERN CALIFORNIA ESU
- WESTERN SNOWY PLOVER

Data Source: California Natural Diversify Database Wildlife and Habitat Data Analysis Branch, Department of Fish and Game, November 2000

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

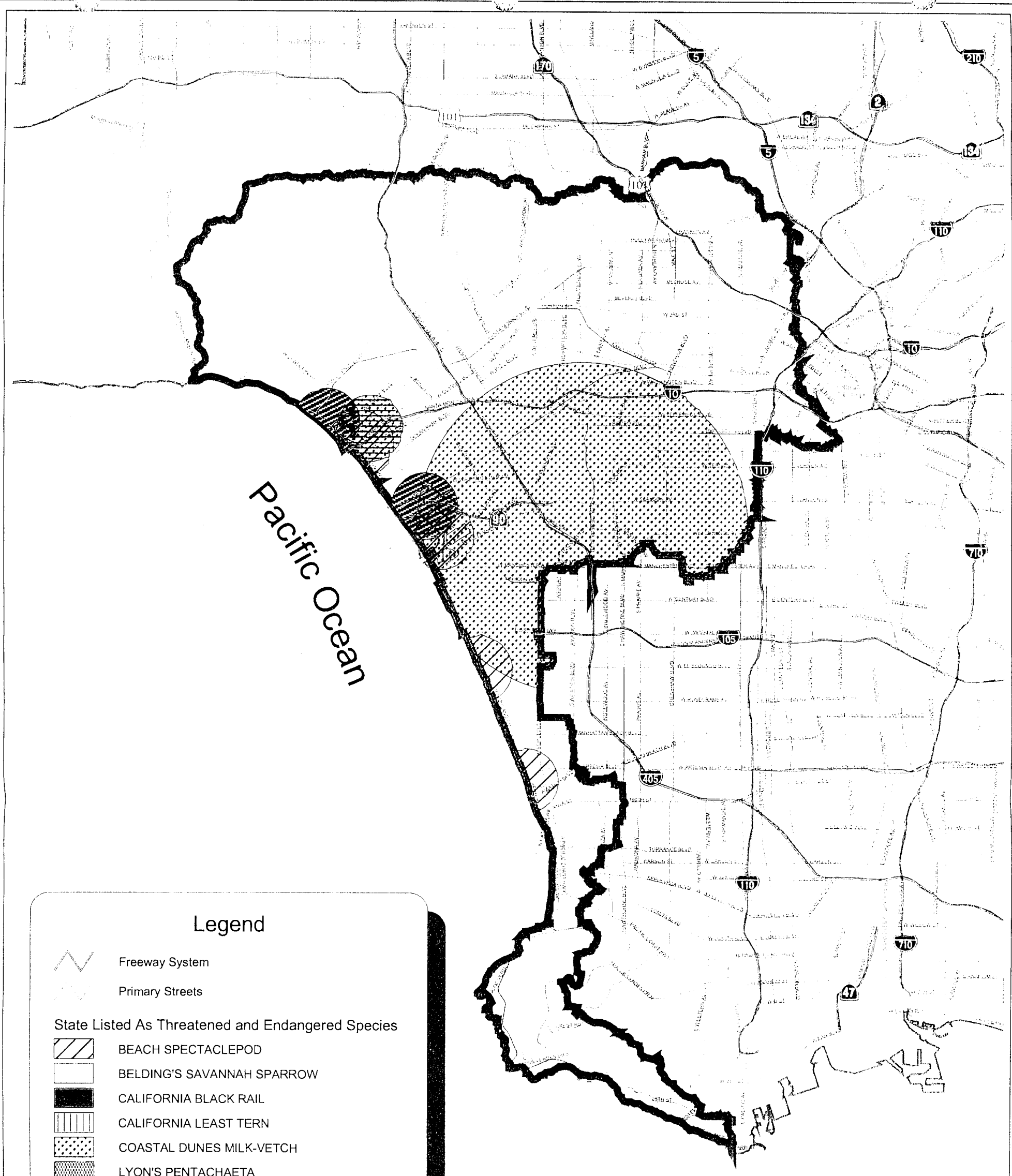
R0000109

Ballona Creek Watershed Management Area Plan

Figure 8a. Federally Listed As Threatened and Endangered Species Locations

N W E S

1 0 1 2 3 Miles



R0000110

Ballona Creek
Watershed Management Area Plan

Figure 8b. State Listed As Threatened and Endangered Species Locations

N
W E
S

1 0 1 2 3 Miles

R0000111

Ballona Creek Watershed Management Area Plan

Figure 9. Mass Emission Monitoring Station S01

N
W E
S

0.5 0 0.5 1 1.5 Miles

DOMINGUEZ CHANNEL/L.A. HARBOR WATERSHED MANAGEMENT AREA PLAN

FEBRUARY 01, 2001

LOS ANGELES REGION

WASTE DISCHARGE REQUIREMENTS
FOR
MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES
WITHIN THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

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1.0 Watershed Management Area Plan Overview

In compliance with the 1996 municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit (Order No. 96-054), Los Angeles County (Principal Permittee) is required to develop a Watershed Management Area Plan (WMAP) for each Watershed Management Area (WMA) in coordination with the cities (Permittees) in each WMA. The WMAP consists of the following: a description of each watershed's characteristics; the Stormwater Quality Management Plan (SQMP), formally known as the five Model Programs (see Appendix); quality of stormwater runoff analyses; identified projects to improve quality of stormwater and urban runoff; and available funding resources.

2.0 Watershed Characteristics

2.1 Watershed Area

The Dominguez Channel Watershed is comprised of approximately 110 square miles of land in the southern portion of Los Angeles County. Ninety-Six percent of its total area is developed and the overall watershed land use is predominantly transportation. Tributaries to the Dominguez Channel include several storm drains and minor channels. The Channel empties into the East Basin of Los Angeles Harbor (Figure 1).

In accordance with the NPDES Permit, the County of Los Angeles is divided into six WMAs. The Permittees within the Dominguez Channel/Los Angeles Harbor WMA, as listed in the Permit, are as follows:

Carson
Gardena
Hawthorne
Inglewood
Lawndale
Lomita
Los Angeles
Los Angeles County
Torrance

There are other Permittees that may drain to this watershed, but are not formally listed as Permittees in this WMA.

2.2 Natural Characteristics

2.2.1 Topography

Figure 3 shows the watershed's contour lines at 50-foot increments. The southwestern portions of the watershed display the highest elevations.

2.2.2 Climate

The mean annual precipitation in the watershed is approximately 13.71 inches. Although large year-to-year variations are common, most rainfall events are associated with winter cold fronts. These winter fronts typically occur during the wet season (October 15 to April 15). The remainder of the year from April 16 to October 14, the dry season, has significantly lower precipitation.

2.2.3 Hydrology

This watershed has the highest impervious value at 62 percent.

2.2.4 Flow Characteristics

2.2.4.1 Flow Direction

Runoff in the watershed flows in a generally southeasterly direction in storm channels all of which ultimately drain into the Pacific Ocean in San Pedro area (Figure 2).

2.2.4.2 Sub-Basins

The sub-basins delineated in Figure 2 show hydrological areas and where they drain. They are based on the contour lines in Figure 3.

2.2.5 Land Use

The principal land use in this watershed is residential covering about 50%. Below is a break down of land use distribution in this watershed (Figure 5).

Table 1. Land Use Distribution

Land Use Category	Percent by Area
Vacant	4.18
Transportation	21.57
High-Density Single-Family Residential (HDSFR)	45.73
Light Industrial	6.43
Multiple-Family Residential	2.64
Retail/Commercial	2.95
Education	1.59
Mixed Residential	2.43
All Other	12.48

The Los Angeles County land use monitoring program under the 1996 NPDES permit is a result of a site selection study entitled *Evaluation of Land Use Monitoring Stations* (Woodward-Clyde and Psomas and Associates, 1996). This study identified the most significant land use categories within the permit area regarding stormwater quality. The selection study yielded eight land use monitoring stations. These eight land use monitoring stations represent over 86% of all the land uses within the permit area. These stations monitor flow and have automated samplers to collect flow-weighted composite stormwater samples during storm events. The 34 categories shown in Table 2 cover 100% of the land uses in the County.

Figure 5 depicts the eight land use categories currently monitored with their respective percent by area within the watershed. The remaining land use categories are summarized as "All Other" in Table 1.

Table 2. Land Use Categories

Land Use Category	Inclusive SCAG Land Use Codes [1]
High Density Single Family Residential [2]	1111
Light Industrial [2]	1311 through 1315, 1340

Vacant [2]	3100, 3200, 3300, 3400
Retail/Commercial [2]	1221 through 1224
Multiple Family Residential [2]	1121 through 1125
Transportation [2]	1411 through 1416, 1418
Education [2]	1261 through 1266
Low Density Single Family Residential	1112
Mixed Residential [2]	1140
General Office	1211 through 1213
Natural Resources Extraction	1331, 1332
Institutional	1241 through 1247, 1251 through 1253
Heavy Industrial	1321 through 1325
Other Commercial	1231 through 1234
Open Space/Recreation	1820, 1830, 1840, 1850, 1860, 1870, 1880
Utility Facilities	1431, 1432, 1433, 1435, 1436, 1438
Mobile Homes and Trailer Parks	1131, 1132
Mixed Transportation and Utility	1450, 1460
Floodways and Structures	1434, 1437
Rural Residential	1151, 1152, 1439
Under Construction	1700
Golf Courses	1810
Nurseries and Vineyards	2200, 2300
Maintenance Yards	1440
Urban Vacant	1900
Military Installations	1271 through 1273
Agriculture	2100, 2110, 2120, 2600
Harbor Facilities	1417, 4401
Animal Husbandry	2400, 2500, 2700
Mixed Commercial and Industrial	1500
Communication Facilities	1420, 1421

Mixed Urban	1600
Marina Facilities	4300
Receiving Waters	4100, 4200, 4400, 4500

(1) Based on Anderson Land Use Level III/IV Classification.

(2) Land use monitored

2.2.6 Geology/Soil

Soil classifications vary throughout the watershed (Figure 6). The soil types include Altatamont Clay Loam, Chino Silt Loam, Diablo Clay Loam, Hanford Fine Sandy Loam, Montezuma Clay Adobe, Oakley Fine Sand, Ramona Clay Loam, Ramona Loam, Ramona Sandy Loam, Tujunga Fine Sandy Loam, Yolo Loam, Yolo Sandy Loam.

2.2.7 Significant Ecological Areas

Significant Ecological Areas (SEAs) are defined and delineated in conjunction with the Land Use and Open Space Elements of the Los Angeles County General Plan.

An area qualifies for recognition as an SEA if it possesses one or more of the following features, or classes:

i. Is the habitat of rare, endangered, or threatened plant or animal species.
ii. Represents biotic communities, vegetative associations, or habitat of plant or animal species that are either one-of-a-kind, or are restricted in distribution on a regional basis.
iii. Represents biotic communities, vegetative associations, or habitat of plant or animal species that are either one-of-a-kind, or are restricted in distribution in Los Angeles County.
iv. Is habitat that at some point in the life cycle of a species or group of species, serves as a concentrated breeding, feeding, resting, or migrating grounds, and is limited in availability.
v. Represents biotic resources that are of scientific interest because they are either extreme in physical/geographical limitations, or they represent an unusual variation in a population or community.
vi. Is an area important as game species habitat or as fisheries.
vii. Is an area that would provide for the preservaion of relatively undisturbed examples of the natural biotic communities in Los Angeles County.
viii. Is a special area, worthy of inclusion, but one which does not fit

any of the other seven criteria.

Los Angeles County Department of Regional Planning (Regional Planning) is in the process of updating the SEAs coverage. The final SEAs information will be included in this plan when Regional Planning has finalized the SEAs coverage.

2.2.8 Threatened and Endangered Species

The watershed supports a variety of threatened and endangered species according to the California Department of Fish and Game's November 2000 California Natural Diversity Database (CNDDB). The CNDDB provides both state and federally listed threatened and endangered species of plants and animals (Figure 7b and 7a, respectively).

The watershed hosts the following threatened or endangered plants:

- California Orcutt Grass,
- Coastal Dunes Milk-Vetch,
- Lyon's Pentachaeta, and
- Mexican Flannelbush.

These plants are scattered throughout the watershed. The plant population that is spread out over the largest area in the watershed is the Coastal Dunes Milk-Vetch. This plant may be found in the north portion of the watershed. California Orcutt Grass is found over most of Gardena. Mexican Flannelbush partially surrounds Palos Verdes Tennis Club. Point Fermin and Angel's Park, located in the southernmost portion of the watershed, may host Lyon's Pentachaeta.

The watershed hosts the following threatened or endangered animals:

- California Least Tern,
- Coastal California Gnatcatcher,
- Mohave Tui Chub,
- Pacific Pocket Mouse, and
- Palos Verdes Blue Butterfly.

The California Least Tern may be found in the Harbor Regional Park Golf Course. The second bird, the Coastal California Gnatcatcher may be found in and around the South Coast Park and the Naval Reservation. Another species, the Mohave Tui Chub, may be found in the South Coast Botanic Garden's water body. The Pacific Pocket Mouse may be found in an area west of Dominguez Channel and South of Sepulveda Boulevard. The Palos Verdes Blue Butterfly may be found

in the Angels Gate Park and the Naval Reservation.

2.3 Significant Stormwater Issues Within the WMA

A modified list of significant stormwater issues within this WMA identified in the Los Angeles Regional Water Quality Control Board's (Regional Board) Watershed Management Initiative Chapter, is as follows:

- Historical deposits of pesticide dichlro-diphenyl-trichloroethane (DDT) and polychlorinated biphenyls (PCBs) in sediment,
- Discharges from Publicly Operated Treatment Works (POTW) & refineries,
- Spills from ships and industrial facilities,
- stormwater runoff, and
- Currently scheduled Total Maximum Daily Load (TMDL) for the next 6-years is coliform.

3.0 Watershed Management Plan

3.1 Source Control Strategies

3.1.1 Non-structural Controls - regulatory policies/programs to minimize threats to stormwater and urban runoff quality.

Permittees within this WMA have adopted the SQMP, jointly developed under the 1996 NPDES Permit, in its entirety as effective and comprehensive procedures for controlling pollution runoff. The Permittees within this WMA are implementing all applicable requirements of the SQMP. Through the extensive effort to meet all the Permit requirements, the Permittees within this WMA have made significant progress in reducing urban runoff pollution. The Permittees within this WMA anticipate further success as SQMP requirements are carried forward and reinforced in future years. The SQMP serves as guidance and requirements under this WMAP.

LACDPW has updated the Development Planning and Public Agency Activities Model Program of the SQMP to reflect the recent approval of a Standard Urban Stormwater Mitigation Plan (SUSMP) requirements. An executive summary of the SQMP has also been added to the beginning of each individual model program of the SQMP.

Under the next NPDES permit, the Permittees within this WMA anticipate that additional efforts will be focused on controlling coliform. The Permittees within this WMA anticipate working with Regional Board staff to develop and implement a plan for the TMDL to monitor and

control coliform to the maximum extent practicable.

3.1.2 Structural Controls - any existing and proposed projects to reduce/minimize pollutants of stormwater and urban runoff.

Table 3. Improvement Projects for Stormwater and Urban Runoff

Permittees	Projects:
LACDPW	Future/Proposed Projects: ▸ Install catch basin inserts in all maintenance yards' catch basins, Catch Basin Debris Excluders in selected catch basins, and in-line storm water clean-up devices in selected storm drains. ▸ Investigate the construction of permanent roof cover for existing and new material storage areas and fuel dispensing islands in some of their field facilities.
City of L.A.	Current projects: ▸ The Port of Los Angeles installed a catch basin inlet with filter on Palos Verdes Street in San Pedro in June of 1998. ▸ The Bureau of Sanitation built a Vortechnics, Inc. system at the Harbor Refuse Yard to capture and treat stormwater runoff.
Torrance	▸ Madrona Mash enhancement and restoration projects: Install Catch Basin Excluders in selected catch basins; Construct a strip berm at the northwest of the preserve to prevent trash from entering the preserve; and Reconstruct a portion of Madrona Ave. in order to increase the level and quantity of water retained. ▸ Torrance Beach Water Quality Improvement Project - install a device to address beach parking lot runoff water quality. ▸ Capacity and effluent discharge water quality improvements and enhancements projects for El Dorado Basin, Mobil Oil Basin, Pioneer Basin, Amie Basin, Doris Basin, Entradero Basin, and Henrietta Basin.

3.2 Recommended Studies

Over the next five years, the Permittees within this WMA anticipate providing guidance on the scope of work for any studies related to receiving water impacts. In particular, the Permittees within this WMA anticipate that future studies may address the following issues:

i The removal efficiency vs. cost comparison for all adopted Performance Standards to assist in effectively focusing

resources,

ii The pollutant removal efficiencies of all structural devices required for new development to assist in properly sizing devices and in excluding ineffective ones,

iii An evaluation of the current vs. "natural state" of the Dominguez Channel's sediment loading, sediment discharge periods, sediment gradation, and environmental impact taking into account factors such as paved areas and riparian corridor restriction,

iv Investigate regional solutions to address stormwater quality (i.e. use of spreading grounds, retention basins, and other similar activities), and

v Studies that evaluate the actual impact of pollutants, and pollutant levels, on the beneficial uses of receiving waters.

3.3 Funding Resources

A variety of different grant funding sources are available to assist in implementing the NPDES permit requirements. They can generally be categorized into specific grant programs and on-going grant programs, or legislative appropriations.

3.3.1 Specific Grant Programs

These are usually bond issues or legislative funded programs administered by state, local agencies or conservancies. The most recent of these is Proposition 13. The majority of funds not specifically identified and budgeted by the state are being administered through competitive grant programs by the following state agencies:

i. State Water Resources Control Board. The State Board is in turn delegating certain responsibilities to the Regional Boards. For more information, please see their website, http://www.swrcb.ca.gov/prop13/ index.html

ii. Resources Agency. This large "umbrella" state agency has either assigned or had appropriated/designated certain funding to the various departments, boards and commissions, conservancies, and special programs. This agency has just recently been legislatively charged with the responsibility to develop a comprehensive listing of the available funding sources, including federal, state, local, and private, for water quality improvements. It is to be posted on the internet by November 1, 2002. For more information, see their website, http://ceres.ca.gov/cra

iii. Department of Water Resources. This Department within the

Resources Agency has funding available for water replenishment projects. For more information, please see their website, http://wwwdwr.water.ca.gov/WaterBond2000

3.3.2 On-Going Grant Programs

i. The state agencies noted above also have on-going grant programs. Their websites are excellent information sources.

ii. Federal Government. There are many funding sources for water quality improvements. The sources are too numerous to list, however there is an excellent website at the Federal EPA that lists the federal and other sources. The site is: http://www.epa.gov/OWOW/watershed/wacademy/fund.html

3.3.3 Legislative Appropriations

Local jurisdictions can also work with stakeholders (Table 4) and elected representatives to pass legislation that funds water quality improvements. This can be done at both the local and national levels. Bond issues are another local and state method to fund improvements.

4.0 References

Los Angeles County Department of Public Works, *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report*, July 31, 2000

Los Angeles County Department of Public Works, *Los Angeles County 1999-2000 Stormwater Monitoring Report*, July 11, 2000

Los Angeles County Department of Public Works, *NPDES PERMIT NO. CA 006165, TASK 5.2, REPORT OF WASTE DISCHARGE (ROWD), VOLUME 8 OF 8*

California Department of Fish and Game, California Natural Diversity Database, Wildlife & habitat Data Analysis Branch, Data Date 11/6/00

Woodward-Clyde and Psomas and Associates, *Evaluation of Land Use Monitoring Stations*, 1996

Michelle Miller, *A Watershed Management Plan: Steps to Protect Your Water Supply*, http://www.epa.gov/OWOW/watershed/Proceed/miller.html

Regional Board, *Watershed Management Initiative Chapter, Executive Summary*, January 2000

Significant Ecological Areas in the Santa Clarita Valley, http://www.scope.org/scope/sea/index.html

5.0 Appendix

Table 4 WATERSHED MANAGEMENT
STAKEHOLDER LIST

Stakeholders	Jurisdictions	WATERSHED INTERESTS						
		ANT	BAL	DOM	LAR	MAL	SC	SGR
Carson	Chamber of Commerce			X				
Gardena	Chamber of Commerce			X				
Hawthorne	Chamber of Commerce			X				
Inglewood	Chamber of Commerce			X				
Lawndale	Chamber of Commerce			X				
Lomita	Chamber of Commerce			X				
Los Angeles	Chamber of Commerce			X				
Torrance	Chamber of Commerce			X				
Carson	City			X				
Gardena	City			X				
Hawthorne	City			X				
Inglewood	City			X				
Lawndale	City			X				
Lomita	City			X				
Los Angeles	City		X	X	X			
Torrance	City			X				
Southern California Edison	Commercial		X	X	X	X		X
American Land Conservancy	Conservancy		X	X		X		
California Coastal Conservancy	Conservancy		X	X		X		
Foothills Wildlife Conservancy	Conservancy		X	X		X		
Mountains Recreation and Conservation Authority	Conservancy		X	X		X		
Santa Monica Mountains Conservancy	Conservancy		X	X		X		
State of California Coastal Conservancy	Conservancy		X	X		X		
Gateway Cities	Council of Government		X	X	X	X		X
Southern California Association of Governments	Council of Government		X	X	X			X
County of Los Angeles Department of Parks and Recreation	County	X	X	X	X	X	X	X
County of Los Angeles Department of Public Works	County	X	X	X	X	X	X	X
County of Los Angeles Department of Regional Planning	County	X	X	X	X	X	X	X
County of Los Angeles Department of Water and Power	County	X	X	X	X	X	X	X
County of Los Angeles Fire Department	County	X	X	X	X	X	X	X
County of Los Angeles Open Space District	County	X	X	X	X	X	X	
County of Los Angeles Sanitation Districts	County	X	X	X	X	X	X	X
Metropolitan Transportation Authority	County	X	X	X	X	X	X	X
Supervisor Don Knabe, District 4	County Supervisor		X	X	X			
Supervisor Yvonne Brathwaite Burke, District 2	County Supervisor		X	X	X			
California Exotic Pest	Environmental		X	X		X		X
California Native Plant Society	Environmental	X	X	X	X	X	X	X
Environment Now	Environmental		X	X		X		
Equestrian Trails Incorporated	Environmental		X	X		X		X
Heal the Bay	Environmental		X	X	X	X		X
LA Bicycle Advisory Comm	Environmental		X	X	X	X		X
LA City Bicycle Coalition	Environmental		X	X	X	X		X
LA County Bicycle Coalition	Environmental		X	X	X	X		X
LA Wheelmen Club	Environmental		X	X		X		
North East Trees	Environmental	X	X	X	X	X	X	X
Plant Council (look up)	Environmental		X	X		X		X
Preservation Authority (look up)	Environmental		X	X		X		X
Sierra Club- LA Chapter	Environmental		X	X	X	X		X
Surfrider Foundation	Environmental		X	X	X	X		X
TreePeople	Environmental	X	X	X	X	X	X	X
Environmental Protection Agency	Federal	X	X	X	X	X	X	X
National Environmental Policy Act	Federal		X	X	X	X		X
National Marine & Fisheries Service	Federal	X	X	X	X	X	X	X
National Parks Service	Federal	X	X	X	X	X	X	X
National Resource Conservation	Federal	X	X	X	X	X	X	X
United States Army Corp of Engineers	Federal	X	X	X	X	X	X	X
United States Department of the Interior National Park Service	Federal	X	X	X	X	X	X	X
United States Fish and Wildlife Service	Federal	X	X	X	X	X	X	X
United States Forest Service - Angeles National Forest	Federal	X	X	X	X	X	X	X
Water Quality Authority Board	Federal		X	X		X		X
Air Quality Management District	Local		X	X	X	X		X
City Police	Local		X	X	X	X		X
Police Departments	Local		X	X		X		X
Sheriffs Departments	Local		X	X		X		X
American Institute of Architects	Organization		X	X	X	X		X
Los Angeles County Coalition	Organization		X	X		X		
Mountains Restoration Trust	Organization		X	X		X		
National Audubon Society	Organization		X	X	X	X		X
National Resources Defense Council	Organization		X	X		X		
Santa Monica Bay Restoration Project	Organization		X	X		X		
Santa Monica Baykeeper	Organization		X	X		X		
Southeast Water Coalition	Organization		X	X		X		
Trust for Public Land	Organization		X	X	X	X		X
Assemblymember Alan Lowenthal, 54	State Assembly District		X	X				X
Assemblymember Edward Vincent, 51	State Assembly District		X	X				
Assemblymember George Nakano, 53	State Assembly District		X	X				
Assemblymember Sheila James Kuehl, 41	State Assembly District		X	X				
Congressmember Maxine Waters, 35	State Congressional District		X	X	X			
Congressmember Steven T Kuykendall, 36	State Congressional District		X	X				
California Conservation Corp	State Departments		X	X	X	X		X
California Department of Fish and Game	State Departments	X	X	X	X	X	X	X
California Department of Parks and Recreation	State Departments	X	X	X	X	X	X	X
California Department of Toxic Substance Control	State Departments		X	X		X		
California Department of Transportation	State Departments	X	X	X	X	X	X	X
California Department of Water Resources	State Departments	X	X	X	X	X	X	X
California Environmental Protection Agency	State Departments	X	X	X	X	X	X	X
California Environmental Quality Act	State Departments	X	X	X	X	X	X	X
Southern California Association of Governments	State Departments	X	X	X	X	X	X	X
State Department of Parks & Recreation	State Departments	X	X	X	X	X	X	X
State Department of Water Resources	State Departments	X	X	X	X	X	X	X
State Soils Conservation	State Departments	X	X	X	X	X	X	X
SWRCB-Regional Water Quality Control Board, LA Region	State Departments	X	X	X	X	X	X	X
Senator Betty Karnette, 27	State Senate District		X	X	X			X
Senator Debra Bowden, 28	State Senate District		X	X	X			
Senator Teresa Hughes, 25	State Senate District		X	X	X			X
California-American Water Company	Water Purveyor		X	X		X		X
Central & West Basin MWD	Water Purveyor		X	X		X		X
Metropolitan Water Districts	Water Purveyor		X	X	X	X		X
United Water Conservation District	Water Purveyor		X	X		X	X	X
Water Replenishment District	Water Purveyor		X	X		X		X

ANT: Antelop Valley
BAL: Ballona Creek
DOM: Dominguez Channel/L.A. Harbor
LAR: Los Angeles River
MAL: Malibu Creek
SC: Santa Clara River
SGR: San Gabriel River

R0000128

VERNON
CITY OF COMI
HUNTINGTON PARK
BELL
BELL GARDE
CUDAHY
INGLEWOOD
SOUTH GATE
LYNWOOD
EL SEGUNDO
HAWTHORNE
COMPTON
PARAMOUNT
MANHATTAN BEACH
GARDENA
LAWNDALE
HERMOSA BEACH
REDONDO BEACH
CARSON
TORRANCE
SIGNAL HILL
LONG BEAC
LOMITA
PALOS VERDES ESTATES
ROLLING HILLS ESTATES
ROLLING HILLS
RANCHO PALOS VERDES

Legend

- L.A. County Boundary
- Dominguez Ch. / L.A. Harbor
- Freeway System

Pacific Ocean

Dominguez Channel / L. A. Harbor Watershed Management Area Plan

Figure 1. Watershed Boundary

R0000129

N W E S

1 0 1 2 Miles

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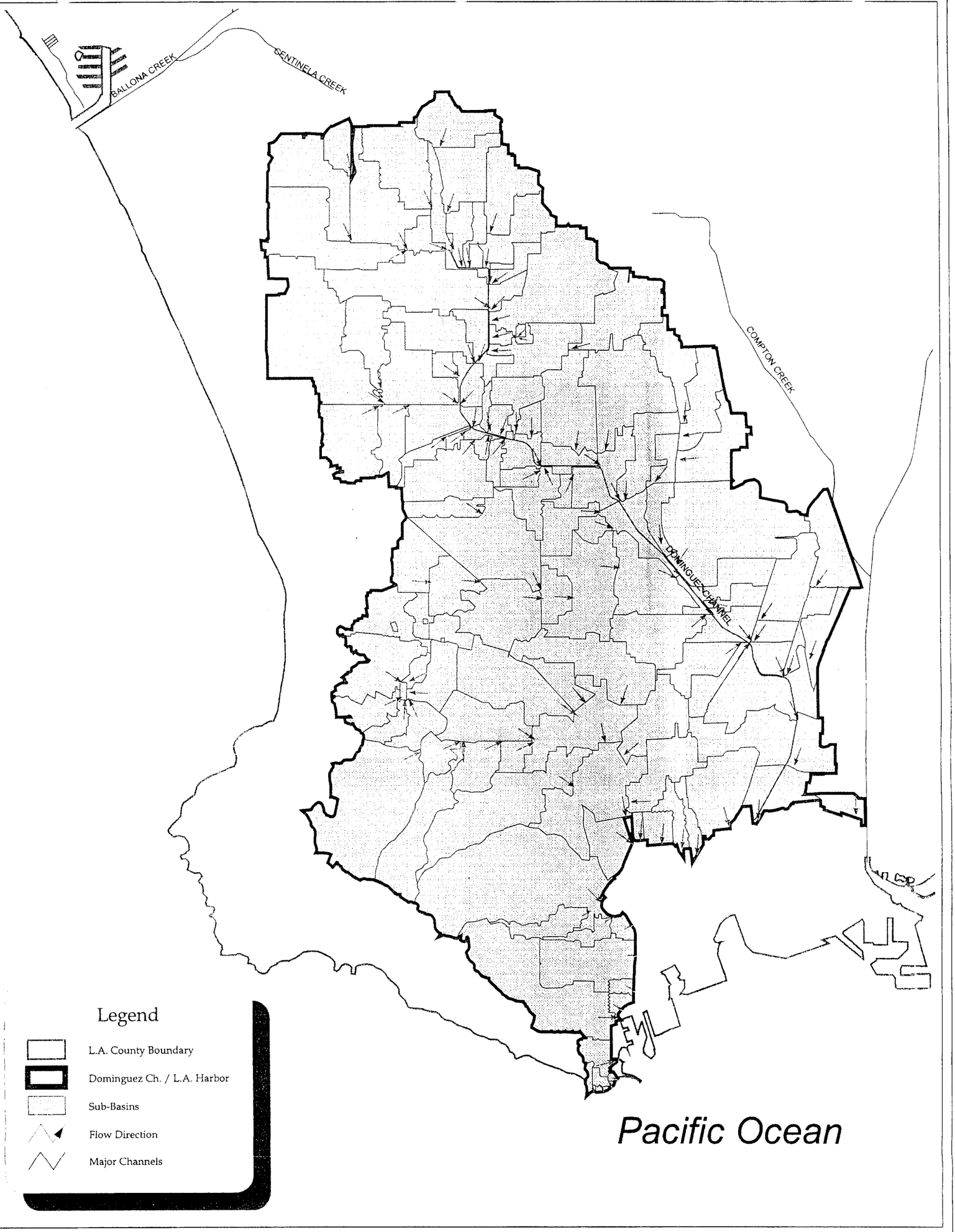
September 19, 2000



LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

R0000130

Dominguez Channel / L. A. Harbor Watershed Management Area Plan

Figure 2. Sub-Basins and Flow Directions

N W E S

1 0 1 2 Miles

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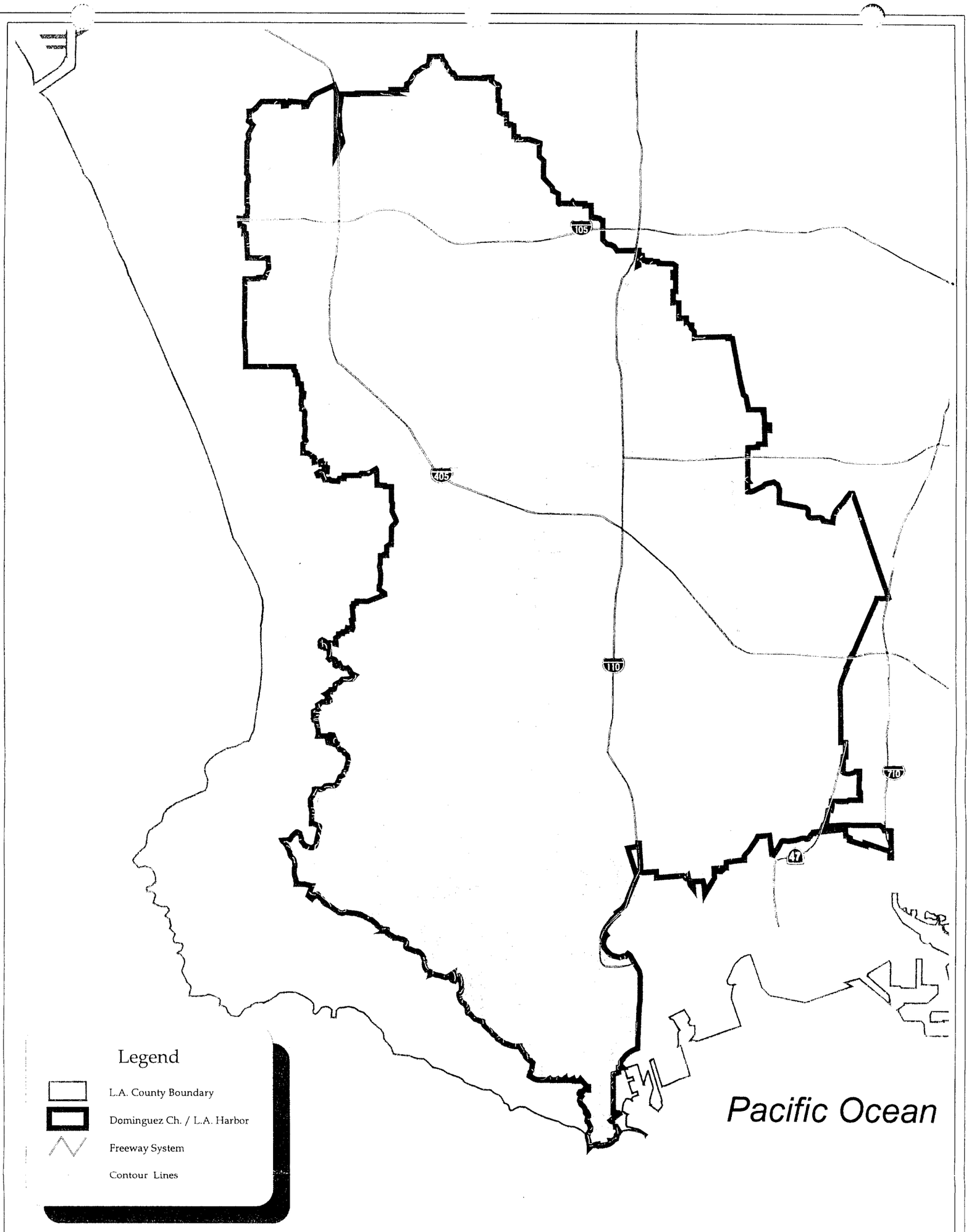

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

R0000131

Dominguez Channel / L. A. Harbor Watershed Management Area Plan

Figure 3. Contours

N W E S

0 0.5 1 1.5 2 2.5 Miles

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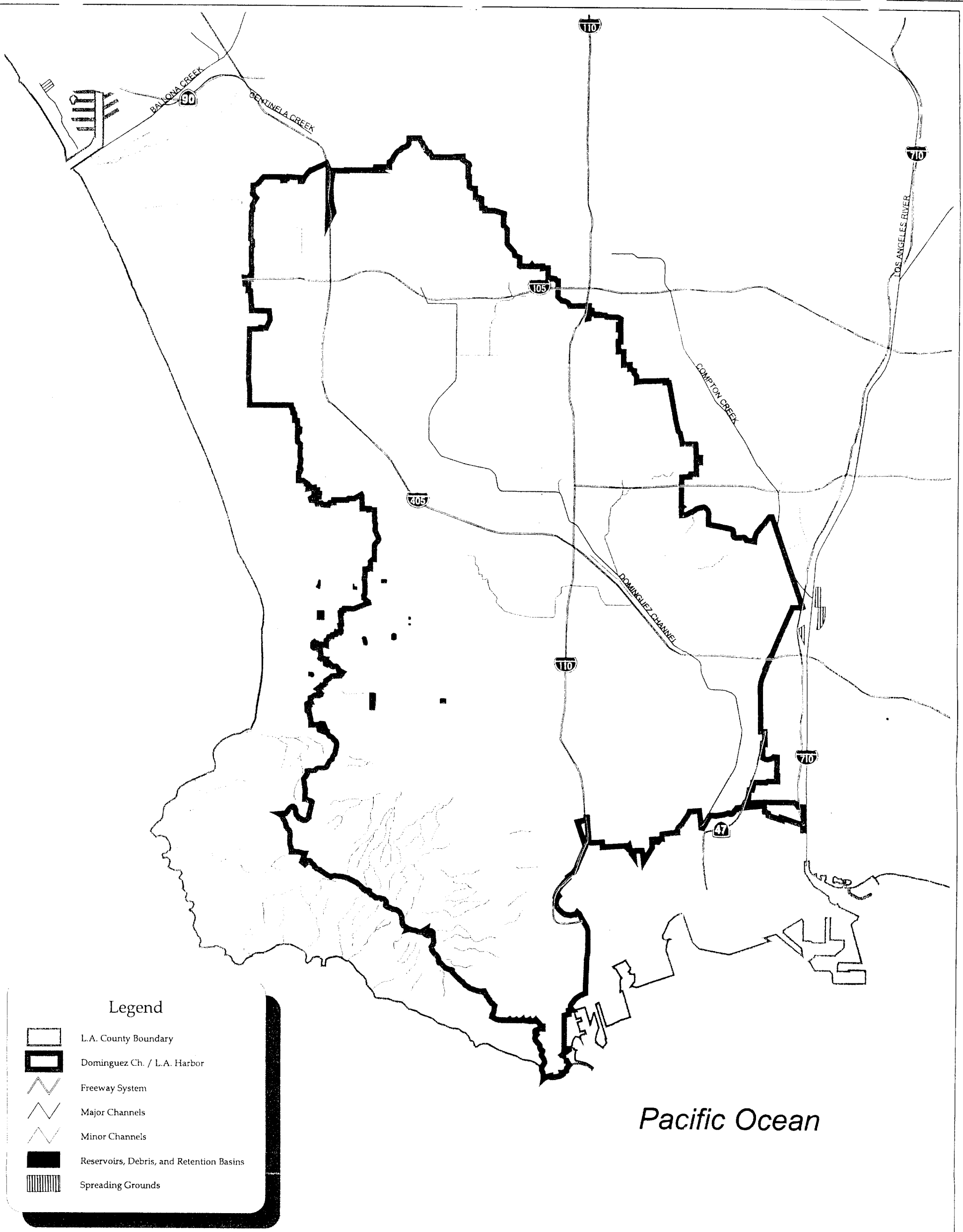

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

R0000132

Dominguez Channel / L. A. Harbor Watershed Management Area Plan

Figure 4. Drainage Facilities

N W E S

1 0 1 2 Miles

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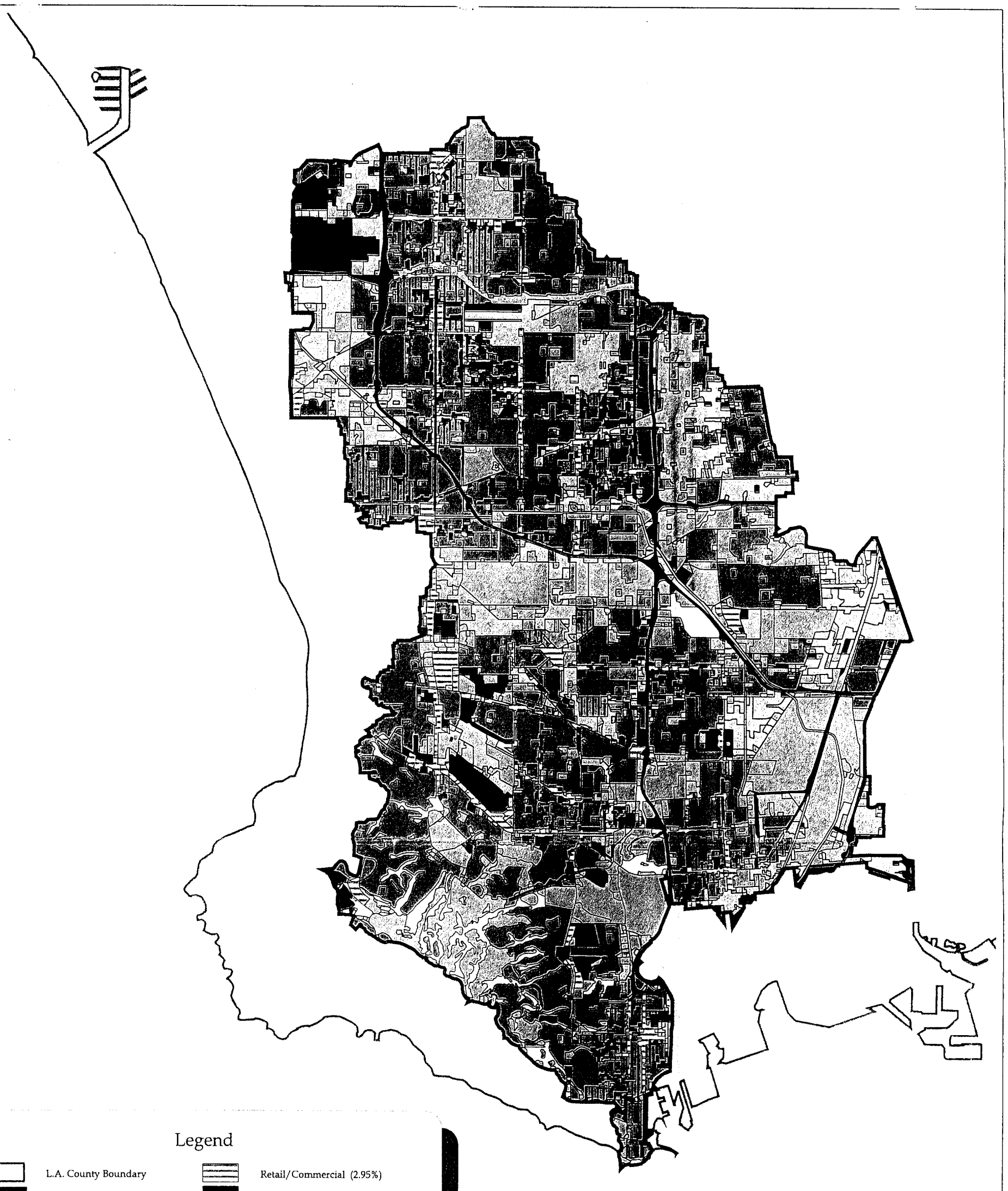

Dominguez Channel / L. A. Harbor Watershed Management Area Plan

Figure 5. Land Use

R0000133

N
W E
S

1 0 1 2 Miles

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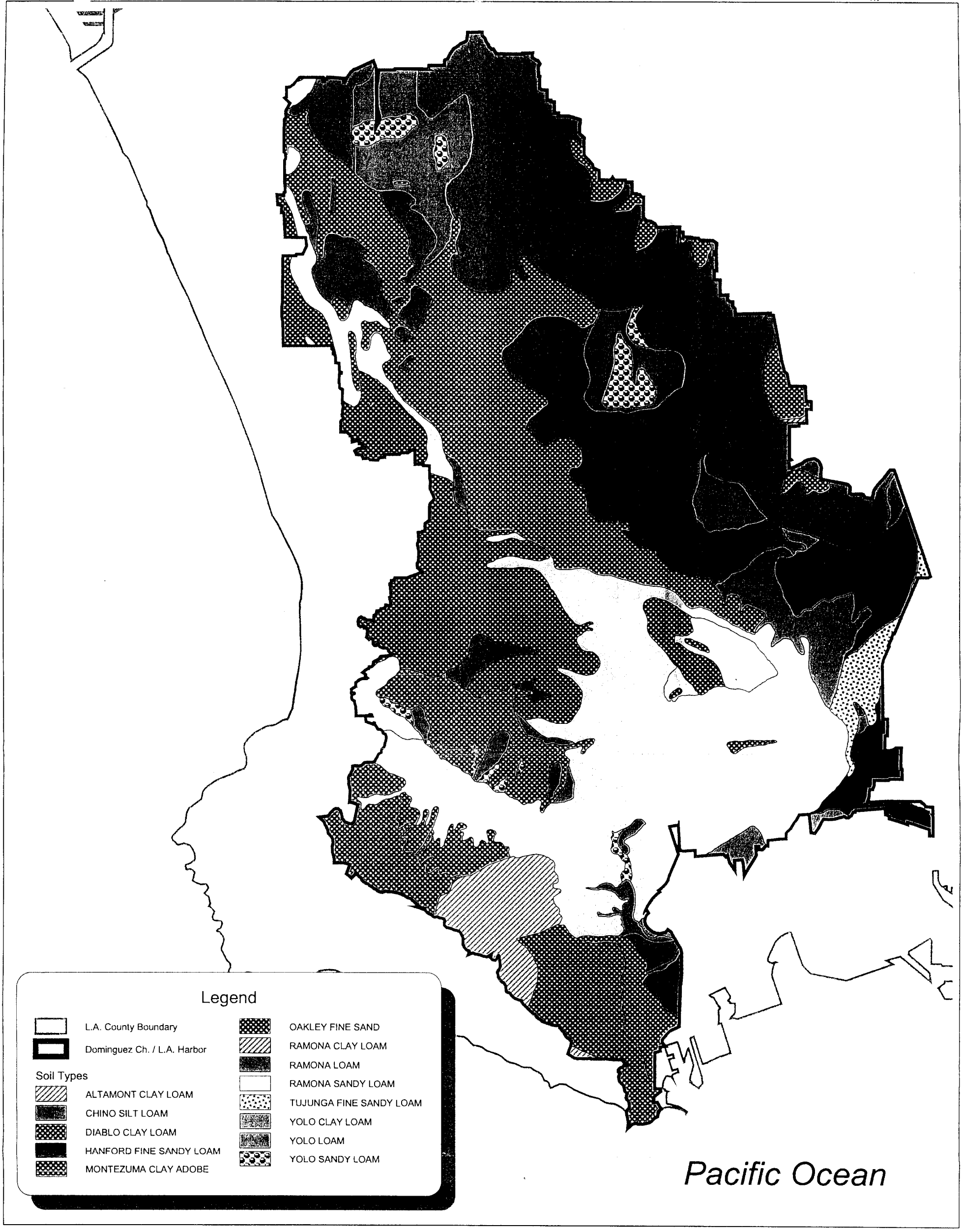

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

Dominguez Channel / L. A. Harbor Watershed Management Area Plan

Figure 6. Soil

R0000134

N W E S

0 0.5 1 1.5 2 Miles

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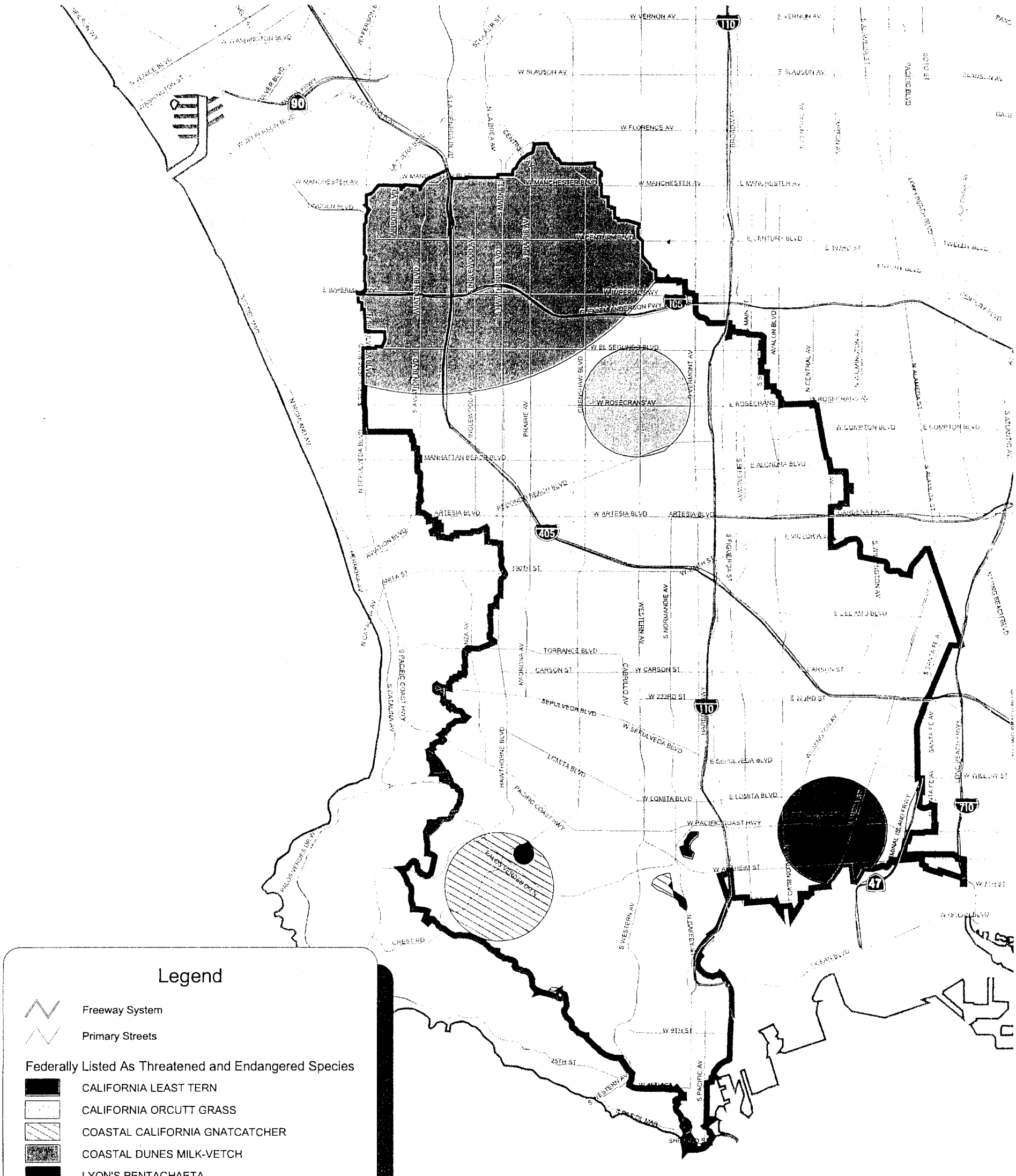
September 19, 2000



Legend

- Freeway System
- Primary Streets

Federally Listed As Threatened and Endangered Species

- CALIFORNIA LEAST TERN
- CALIFORNIA ORCUTT GRASS
- COASTAL CALIFORNIA GNATCATCHER
- COASTAL DUNES MILK-VETCH
- LYON'S PENTACHAETA
- MEXICAN FLANNELBUSH
- MOHAVE TUI CHUB
- PACIFIC POCKET MOUSE
- PALOS VERDES BLUE BUTTERFLY

Data Source: California Natural Diversify Database
Wildlife and Habitat Data Analysis
Branch, Department of Fish and
Game, November 2000

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

R0000135

Dominguez Channel / L.A. Harbor Watershed Management Area Plan

Figure 7a. Federally Listed As Threatened and Endangered Species Locations

N W E S

1 0 1 2 Miles

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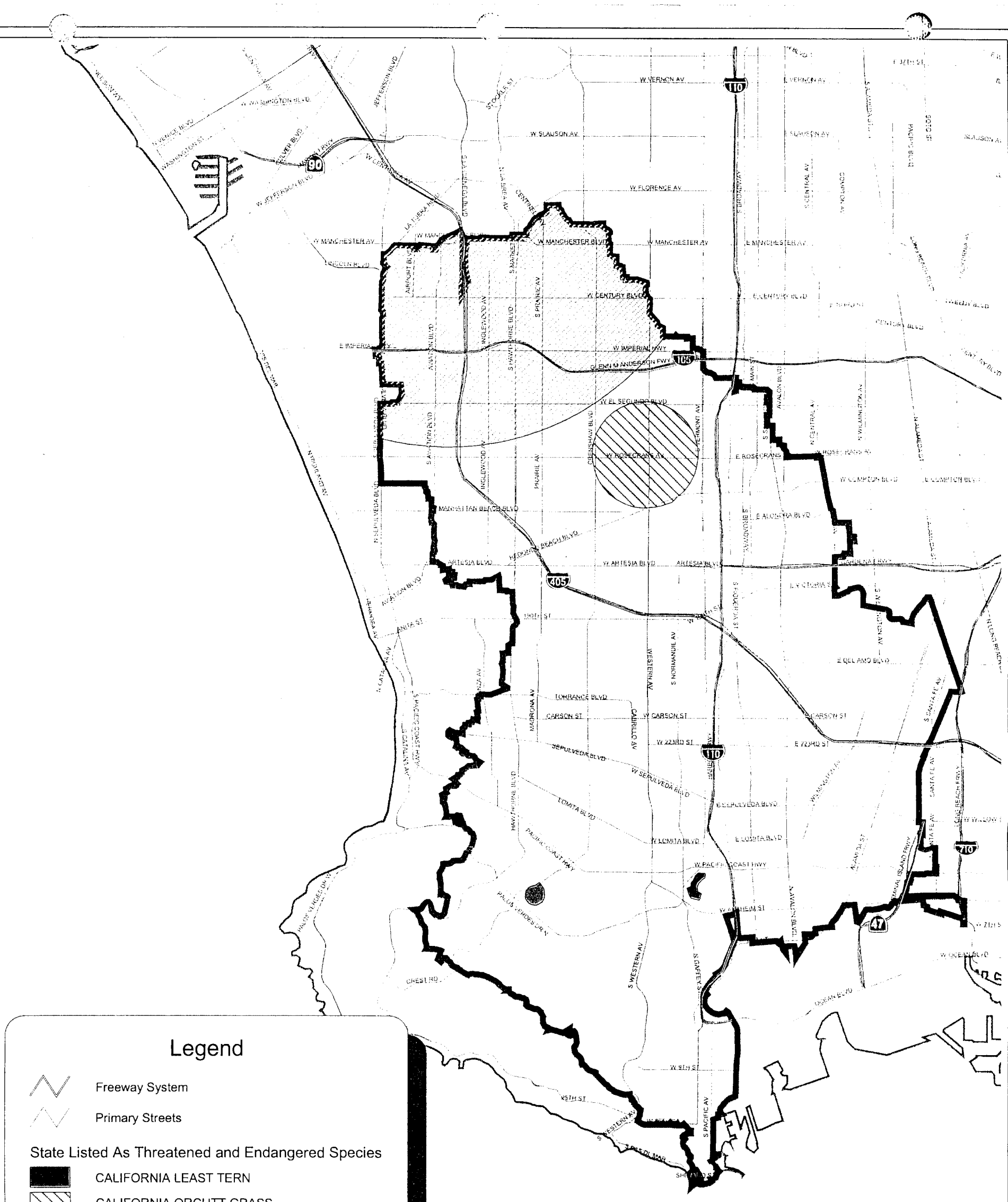
December 12, 2000



Legend

- Freeway System
- Primary Streets

State Listed As Threatened and Endangered Species

- CALIFORNIA LEAST TERN
- CALIFORNIA ORCUTT GRASS
- COASTAL DUNES MILK-VETCH
- LYON'S PENTACHAETA
- MOHAVE TUI CHUB

Data Source: California Natural Diversify Database Wildlife and Habitat Data Analysis Branch, Department of Fish and Game, November 2000

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

R0000136

Dominguez Channel / L.A. Harbor Watershed Management Area Plan

Figure 7b. State Listed As Threatened and Endangered Species Locations

N W E S

0.6 0 0.6 1.2 1.8 Miles

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December 12, 2000

LOS ANGELES RIVER
WATERSHED MANAGEMENT AREA PLAN

FEBRUARY 01, 2001

LOS ANGELES REGION

WASTE DISCHARGE REQUIREMENTS
FOR
MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES
WITHIN THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

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1.0 Watershed Management Area Plan Overview

In compliance with the 1996 municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit (Order No. 96-054), Los Angeles County (Principal Permittee) is required to develop a Watershed Management Area Plan (WMAP) for each Watershed Management Area (WMA) in coordination with the cities (Permittees) in each WMA. The WMAP consists of the following: a description of each watershed's characteristics; the Stormwater Quality Management Plan (SQMP), formally known as the five Model Programs (see Appendix); quality of stormwater runoff analyses; identified projects to improve quality of stormwater and urban runoff; and available funding resources.

2.0 Watershed Characteristics

2.1 Watershed Area

The Los Angeles River Watershed is centrally located in Los Angeles County (Figure 1). It is bound by the San Gabriel Mountains to the east, the Santa Susanna Mountains to the north, Santa Monica Mountains to the west, and Pacific Ocean to the south. The watershed is comprised of approximately 834 square miles of land with 60% of its total area developed. The overall imperviousness of the tributary watershed is 35%. The watershed drains into the Los Angeles River from the Santa Susanna Mountains to the Pacific Ocean. The major tributaries to the Los Angeles River include Pacoima Wash, Tujunga Wash, Burbank-Western Channel, Verdugo Wash, Sycamore Channel, Arroyo Seco Wash, Rio Hondo Channel, Compton Creek, and numerous other storm drains (Figure 4).

In accordance with the 1996 NPDES Permit, the County of Los Angeles is divided into six WMAs. The Permittees within the Los Angeles River WMA, as listed in the Permit, are as follows:

Alhambra
Arcadia
Bell
Bell Gardens
Burbank
Commerce
Compton
Cudahy
El Monte
Glendale
Hidden Hills
Huntington Park
La Canada Flintridge

Long Beach*
Los Angeles
Los Angeles County
Lynwood
Maywood
Montebello
Monterey Park
Paramount
Pasadena
Rosemead
San Fernando
San Gabriel
San Marino
Sierra Madre
Signal Hill
South Gate
South Pasadena
Temple City
Vernon

*Note: As of June 30, 1999, the City of Long Beach has its own NPDES permit for municipal storm water and urban runoff discharges.

There are other Permittees which may drain to this watershed, but are not formally listed as Permittees in this WMA.

2.2 Natural Characteristics

2.2.1 Topography

The watershed has a varied terrain consisting of mountains, low lying foothills, valleys and coastal plains. Figure 3 shows the watershed's contour lines at 50-foot increments. The highest elevations occur in the San Gabriel Mountains, located in the northeasterly portion of the watershed.

2.2.2 Climate

The watershed consists of portions of the San Gabriel Mountains, San Fernando Valley, San Gabriel Valley, and the Coastal Plain. For the mountains, valley, and coastal, the normal seasonal rainfalls are 27.5 inches, 17.64 inches, and 13.71 inches respectively.

The average rainfall of these four regions yields an average annual precipitation on the watershed of 19.12 inches. Although large year-to-year variations are common, most rainfall events are associated

with winter cold fronts. These winter fronts typically occur during the wet season (October 15 to April 15). The remainder of the year from April 16 to October 14, the dry season, has significantly lower precipitation.

2.2.3 Hydrology

A comprehensive network of flood control and water conservation facilities exist in the watershed to sustain the ever-increasing development in the region. A significant portion of the annual rainfall in the watershed escapes directly to the Pacific Ocean, facilitated by the channelization of the Los Angeles River which is concrete-lined throughout much of its length. The remaining amount percolates into the ground and is conserved in a number of groundwater aquifers. Groundwater aquifer recharge takes place predominantly via artificial groundwater recharge facilities operated by Los Angeles County Department of Public Works (LACDPW). The largest groundwater aquifer in the area is the Central Basin, underlying the Downtown area and the surrounding areas of the City of Los Angeles.

2.2.4 Flow Characteristics

2.2.4.1 Flow Direction

The Los Angeles River is the main watercourse that runs through the watershed, and it extends from San Fernando Valley to the Pacific Ocean. The River is approximately 51 miles long and has an elevation drop of approximately 4,500-feet from the highest peaks.

Runoff in the watershed flows in a generally southerly direction in flood control channels which finally drain into the Pacific Ocean via San Pedro Bay (Figure 2).

2.2.4.2 Sub-Basins

The sub-basins delineated in Figure 2 show hydrological areas and where they drain. They are based on the contour lines in Figure 3.

2.2.5 Land Use

The northeastern portion of the watershed is predominantly part of the Angeles National Forest (categorized mostly as Vacant type per Anderson Land Use Level III/IV classification). Vacant Land Use covers almost 40% of the watershed. The next major land use category for the

remaining portion of the watershed is high density single-family residential covering about 30%. Below is a break down of land use distribution in this Watershed (Figure 5).

Table 1. Land Use Distribution

Land Use Category	Percent by Area
Vacant	39.82
Transportation	2.44
High-Density Single-Family Residential (HDSFR)	28.82
Light Industrial	5.13
Multiple-Family Residential	3.85
Retail/Commercial	3.74
Education	1.91
Mixed Residential	1.83
All Other	12.46

The Los Angeles County land use monitoring program under the 1996 NPDES permit is a result of a site selection study entitled *Evaluation of Land Use Monitoring Stations* (Woodward-Clyde and Psomas and Associates, 1996). This study identified the most significant land use categories within the permit area regarding stormwater quality. The selection study yielded eight land use monitoring stations. These eight land use monitoring stations represent over 86% of all the land uses within the permit area. These stations monitor flow and have automated samplers to collect flow-weighted composite stormwater samples during storm events. The 34 categories shown in Table 2 cover 100% of the land uses in the County.

Figure 5 depicts the eight land use categories currently monitored with their respective percent by area within the watershed. The remaining land use categories are summarized as "All Other" in Table 1.

Table 2. Land Use Categories

Land Use Category	Inclusive SCAG Land Use Codes [1]
High Density Single Family Residential [2]	1111
Light Industrial [2]	1311 through 1315, 1340
Vacant [2]	3100, 3200, 3300, 3400
Retail/Commercial [2]	1221 through 1224
Multiple Family Residential [2]	1121 through 1125
Transportation [2]	1411 through 1416, 1418
Education [2]	1261 through 1266
Low Density Single Family Residential	1112
Mixed Residential [2]	1140
General Office	1211 through 1213
Natural Resources Extraction	1331, 1332
Institutional	1241 through 1247, 1251 through 1253
Heavy Industrial	1321 through 1325
Other Commercial	1231 through 1234
Open Space/Recreation	1820, 1830, 1840, 1850, 1860, 1870, 1880
Utility Facilities	1431, 1432, 1433, 1435, 1436, 1438
Mobile Homes and Trailer Parks	1131, 1132
Mixed Transportation and Utility	1450, 1460
Floodways and Structures	1434, 1437
Rural Residential	1151, 1152, 1439
Under Construction	1700
Golf Courses	1810
Nurseries and Vineyards	2200, 2300
Maintenance Yards	1440
Urban Vacant	1900
Military Installations	1271 through 1273

Agriculture	2100, 2110, 2120, 2600
Harbor Facilities	1417, 4401
Animal Husbandry	2400, 2500, 2700
Mixed Commercial and Industrial	1500
Communication Facilities	1420, 1421
Mixed Urban	1600
Marina Facilities	4300
Receiving Waters	4100, 4200, 4400, 4500

(1) Based on Anderson Land Use Level III/IV Classification.
(2) Land use monitored

2.2.6 Geology/Soil

Los Angeles and nearby cities are located in a relatively flat alluvial plain lying on uplifted terraces surrounded by the mountain ranges. The San Gabriel, Santa Susanna and Santa Monica Mountains are formed of deeply weathered granite rock. These mountains are among the most erodible mountain ranges in the world. Forest fires within these mountains increase the debris potential tremendously during storms. Damages resulting from the local torrential floods are immense considering the size of the area from which the floods originate.

Soil classification at the northern portion of the watershed is mainly Upper Los Angeles River. The other types of soil classification in the watershed are the following: Altamont Clay Loam, Chino Silt Loam, Diablo Clay Loam, Hanford Fine Sandy Loam, Hanford Gravelly Sandy Loam, Hanford Silt Loam, Little Rock Creek, Montezuma Clay Adobe, Oakley fine Sand, Placentia Loam, Ramona Clay Loam, Ramona Loam, Ramona Sandy Loam, Santa Clara River, Santa Monica Mountains, Tujunga Fine Sandy Loam, Upper San Gabriel River, Yolo Clay Loam, Yolo Loam, and Yolo Sandy Loam. The Tujunga Fine Sandy Loam occurs in and adjacent to river beds (Figure 6).

2.2.7 Significant Ecological Areas

Significant Ecological Areas (SEAs) are defined and delineated in conjunction with the Land Use and Open Space Elements of the Los Angeles County General Plan.

An area qualifies for recognition as a SEA if it possesses one or more of the following features, or classes:

i. Is the habitat of rare, endangered, or threatened plant or animal species.
ii. Represents biotic communities, vegetative associations, or habitat of plant or animal species that are either one-of-a-kind, or are restricted in distribution on a regional basis.
iii. Represents biotic communities, vegetative associations, or habitat of plant or animal species that are either one-of-a-kind, or are restricted in distribution in Los Angeles County.
iv. Is habitat that at some point in the life cycle of a species or group of species, serves as a concentrated breeding, feeding, resting, or migrating grounds, and is limited in availability.
v. Represents biotic resources that are of scientific interest because they are either extreme in physical/geographical limitations, or they represent an unusual variation in a population or community.
vi. Is an area important as game species habitat or as fisheries.
vii. Is an area that would provide for the preservation of relatively undisturbed examples of the natural biotic communities in Los Angeles County.
viii. Is a special area, worthy of inclusion, but one which does not fit any of the other seven criteria.

Los Angeles County Department of Regional Planning (Regional Planning) is in the process of updating the SEAs coverage. The final SEAs information will be included in this plan when Regional Planning has finalized the SEAs coverage.

2.2.8 Threatened and Endangered Species

The watershed supports a variety of threatened and endangered species according to the California Department of Fish and Game's November 2000 California Natural Diversity Database (CNDDB). The CNDDB provides both state and federally listed threatened and endangered species of plants and animals (Figures 7b and 7a, respectively).

The watershed hosts the following threatened or endangered plants:

- Braunton's Milk-Vetch,
- Coastal Dunes Milk-Vetch,
- Nevin's Barberry,
- Salt Marsh Bird's-Beak, and
- Slender-Horned Spineflower.

These plants are scattered throughout the watershed in various regions, such as riparian corridors and developed areas.

The watershed hosts the following threatened or endangered animals:

- Coastal California Gnatcatcher,
- Santa Ana Sucker,
- Least Bell's Vireo, and
- Western Yellow-Billed Cuckoo.

Two of these three birds may be found primarily around bodies of water. The Coastal California Gnatcatcher may be found around the Tujunga Wash or Santa Anita Wash while the Least Bell's Vireo may be found around the Los Angeles Reservoir. The Western Yellow-Billed Cuckoo may be found in the San Fernando Valley.

2.3 Quality of Stormwater Runoff

2.3.1 Monitoring Activities

To characterize the quality of stormwater runoff in Los Angeles County, sampling of large area mass emissions sites has been performed under the 1990 and 1996 municipal stormwater NPDES permits.

2.3.1.1 Monitoring Station Location

LACDPW has been monitoring four major drainage areas near their outfalls to the ocean. The following mass emission monitoring stations installed under the original 1990 Permit were retained under the 1996 Permit: the Los Angeles River Monitoring Station, the San Gabriel River Monitoring Station, the Ballona Creek Monitoring Station, and the Malibu Creek Monitoring Station.

The Los Angeles River Monitoring Station is located at the existing stream gage station (Stream Gage No. F319-R) between Willow Street and Wardlow Road in the City of Long Beach. The location was chosen to avoid tidal influences and is able to capture 99 percent of the L.A. River WMA drainage. This river is the largest watershed outlet to the Pacific Ocean in Los Angeles County. At the site, the river is a concrete lined trapezoidal channel.

2.3.1.2 Stormwater Sample Collection Methods

below, are used to collect samples.

- Grab Sample - a discrete, individual sample taken within a short period of time. This method is used to collect samples for constituents that have very short holding times and specific collection or preservation needs. For example, samples for coliforms are taken directly into a sterile container to avoid non-resident bacterial contamination.
- Composite Sample - a mixed or combined sample created by combining a series of discrete samples (aliquots) of specific volumes. Composite sampling is ideally conducted over the duration of the storm event.

During a storm event, grab samples are collected during the initial portion of the storm event and taken directly to the laboratory.

Flow composite storm samples were obtained using an automated sampler to collect samples at flow-paced intervals. Samples collected at each station were combined in the laboratory to create a single flow-weighted sample for analysis.

2.3.2 Comparison of Mass Emissions Concentrations to the Ocean Plan, Basin Plan, and California Toxics Rule

It should be noted that, except for bacteria indicators, there are no numerical water quality standards that apply to stormwater or nonpoint source pollution. Current federal and state numerical standards apply only to point source pollution, such as sanitary sewage, industrial and point source discharges to the ocean and other water bodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff. An exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, the sampling results used to produce Tables 4 and 5 (see Appendix) are detected values before dilution, a factor allowed by the Ocean Plan.

Both the annual mean and median of the analyses of some 209 constituents sampled were compared to the water quality objectives outlined in the California Ocean Plan, the Los Angeles Region Basin Plan, and the California Toxics Rule. For stormwater bacteria indicators, the log mean of the Most Probable Number per 100 ml was compared to the objectives of AB411.

Table 4 shows constituents whose annual mean or median virtually exceeded the water quality objectives described above. Fourteen chemical constituents were identified as constituents of concern from the comparison. For bacteria indicators, the log mean of the Most Probable Number per 100 ml was compared to the objectives of AB411. Total coliform and fecal coliform, and enterococcus are included due to their exceedance of AB411.

2.3.3 Long-term Trend Analysis

A long-term trend analysis was performed for the seventeen water quality constituents selected through the screening procedure over the period from 1995 to 2000. The constituents analyzed include: cyanide, total coliform, fecal coliform, fecal enterococcus, total dissolved solids, turbidity, total aluminum, dissolved cadmium, dissolved copper, total copper, dissolved lead, total lead, dissolved nickel, nickel, dissolved zinc, total zinc and bis(2-ethylhexyl)phthalate. Table 5 shows a summary of statistical analysis results of water quality data collected from the Los Angeles River Monitoring Station.

Tables 4 and 5 show that the bacteria indicator standards for total and fecal coliform were exceeded for every year. The most prominent virtual exceedances occurred with total and dissolved copper and total lead, followed by turbidity, total zinc, and dissolved lead. The tables also show that 1997-1998, the El Niño season, contributed the most virtual exceedances (fourteen constituents exceeded the water quality objectives). It should be noted that there were no virtual exceedances by nutrients (compounds of nitrogen and phosphorus) of the three water quality objectives. The following represents a summary of water quality trends:

Total Coliform

Peak concentrations were observed in the 1995-1996 and 1997-1998 storm seasons. A sharply decreasing trend is noted between the 1998-1999 and 1999-2000 storm seasons. Throughout the entire monitoring period, most data have been shown to largely exceed the Basin Plan, Ocean Plan and AB 411 objective limits.

Fecal Coliform

The highest median concentration was observed in the 1995-1996 storm season. Although there has been a drastic reduction in fecal coliform since the 1995-1996 storm season, its populations still exceed the Basin Plan, Ocean Plan and AB 411 objective limits.

Fecal Enterococcus

The data show a general trend of reduction on fecal enterococcus concentration since 1995. It should be noted that there were not enough data was available for the statistical analysis in the 1996-1997 and 1997-1998 storm seasons.

Total Dissolved Solids

Total dissolved solids concentrations generally complied with the water quality objectives, except with a high mean concentration observed in the 1998-1999 storm season.

Turbidity

The turbidity concentrations fluctuated over the monitoring period with some peaks above the Ocean Plan objective limit.

Total Aluminum

The highest median concentration occurred in the 1997-1998 storm season, exceeding the Basin Plan water quality objective; however, this appeared to be only temporary and median concentrations again dropped below the objective limit for the remaining monitoring period.

Dissolved Cadmium

Only one exceedence of the California Toxics Rule water quality objective limits was observed in the 1997-1998 storm season. Not enough data was available for the statistical analysis for the rest of the monitoring period.

Dissolved Copper

The concentrations stayed consistantly below the California Toxics Rule objective limits between the 1995-1996 and 1996-1997 storm seasons. In the 1997-1998 storm season, however, dissolved copper levels experienced a rapid increase. Since then, median concentrations have displayed a sharply decreasing trend with the concentrations still above the objective limits.

Total Copper

Total copper concentrations have experienced high fluctuations over the monitoring period. During this period, the median concentrations have exceeded the Ocean Plan objective limit.

Lead

The median concentrations of both dissolved and total lead peaked in the 1997-1998 storm season. No trend was observed prior to or after that storm season.

Nickel

Nickel concentrations generally complied with the water quality objectives with one exception. Both mean and median concentrations of dissolved nickel and mean concentration of nickel exceeded the objective limits in the 1997-1998 storm season.

Zinc

Dissolved zinc concentrations generally complied with the California Toxics Rule water quality objective limits, except that high mean and median concentrations were observed in the 1997-1998 storm season. Total zinc concentrations generally decreased from 1995 to 2000, with a surge observed in the 1997-1998 storm season. Since the 1997-1998 storm season, median total zinc concentrations are in compliance with the Ocean Plan objective.

Bis(2-ethylhexyl)phthalate

The median concentrations of bis(2-ethylhexyl)phthalate exceeded the Ocean Plan objective twice over the monitoring period. Not enough water quality data for statistical analysis existed between the 1998-1999 and 1999-2000 storm seasons.

2.4 Significant Storm Water Issues Within the WMA

A modified list of significant stormwater issues within this WMA identified in the Los Angeles Regional Water Quality Control Board's (Regional Board) Watershed Management Initiative Chapter is as follows:

- Other nonpoint sources (horse stables, golf courses),
- Cross-contamination between surface and groundwater,
- Protection and enhancement of fish and wildlife habitat and recreational areas,
- Removal of exotic vegetation,
- Attaining a balance between water reclamation and minimum flows to support habitat,
- Contaminated sediments within the Los Angeles River estuary, and
- Currently scheduled Total Maximum Daily Loads (TMDLs) for the next 6-years are: trash, nutrients, coliform, metals, and chlorpyrifos.

3.0 Watershed Management Plan

3.1 Source Control Strategies

3.1.1 Non-structural Controls - regulatory policies designed to minimize threats to stormwater and urban runoff quality .

Permittees within this WMA have adopted the SQMP, jointly developed under the 1996 NPDES Permit, in its entirety as effective and comprehensive procedures for controlling pollution runoff. The Permittees within this WMA are implementing all applicable requirements of the SQMP. Through the extensive effort to meet all Permit requirements, the Permittees within this WMA have made significant progress in reducing urban runoff pollution. The Permittees within this WMA anticipate further success as SQMP requirements are carried forward and reinforced in future years. The SQMP serves as guidance and requirements under this WMAP.

LACDPW has updated the Development Planning and Public Agency Activities Model Program of the SQMP to reflect the recent approval of Standard Urban Stormwater Mitigation Plan (SUSMP) requirements. An executive summary of the SQMP has also been added to the beginning of each individual model program of the SQMP. Additional revisions to all model programs will be made following the adoption of the 2001 NPDES Permit.

Under the next NPDES permit, the Permittees within this WMA anticipate that additional efforts will be focused on controlling trash, nutrients, coliform, metals, and chlorpyrifos. The Permittees within this WMA anticipate working with Regional Board staff to develop and implement a plan for the TMDLs to monitor and control these pollutants to the maximum extent practicable.

3.1.2 Structural Controls - any existing and proposed projects to reduce/minimize pollutants of stormwater and urban runoff.

Table 3 Improvement Projects for Stormwater and Urban Runoff

Permittee	Projects:
LACDPW	Current Projects: • Los Angeles County Environmental Enhancement Project - The project is located at the LACDPW headquarters building. Various structural BMPs will be installed to test and monitor the effectiveness. • Tujunga Wash Restoration Demonstration Project - The project is located in the City of Los Angeles. Various BMP's such as vegetated swales, and a settling basin will be installed to improve the water quality. • Los Angeles River Litter Monitoring Plan - The Plan will focus on the use of in-flow monitoring devices for litter collection in the storm drain. The plan will result in a better understanding of the amount of litter entering the storm drain and aid in the reduction of that litter in the storm drain. Future/Proposed Projects: • Plan on installing catch basin inserts in all maintenance yards' catch basins, Catch Basin Debris Excluders in selected catch basins, and in-line storm water clean-up devices in selected storm drains. • Investigate the construction of permanent roof cover for existing and new material storage areas and fuel dispensing islands in some of their field facilities.
City of L.A.	Current Projects: • Installed 2 catch basin trash screens • Los Angeles River Litter Monitoring Plan Future/Proposed Projects: • Install one Trash Containment System • Construct one Low-Flow Diversion • Install porous pavement

3.2 Recommended Studies

Over the next five years, the Permittees within this WMA anticipate providing guidance on the scope of work for any studies related to receiving water impacts. In particular, the Permittees within this WMA anticipate that future studies may address the following issues:

i. The removal efficiency vs. cost comparison for all adopted Performance Standards to assist in effectively focusing resources.

ii. The pollutant removal efficiencies of all structural devices required for new development to assist in properly sizing devices and in excluding ineffective ones.

iii. An evaluation of the current vs. "natural state" of the Los Angeles River's sediment loading, sediment discharge periods, sediment gradation, and environmental impact taking into account factors such as paved areas and riparian corridor restriction.

iv. Investigate regional solutions to address stormwater quality (i.e. use of spreading grounds, retention basins, and other similar activities).

v. Studies that evaluate the actual impact of pollutants, and pollutant levels, on the beneficial uses of receiving waters.

3.3 Funding Resources

A variety of different grant funding sources are available to assist in implementing the NPDES permit requirements. They can generally be categorized into specific grant programs and on-going grant programs, or legislative appropriations.

3.3.1 Specific Grant Programs

These are usually bond issues or legislative funded programs administered by state, local agencies or conservancies. The most recent of these is Proposition 13. The majority of funds not specifically identified and budgeted by the state are being administered through competitive grant programs by the following state agencies:

i. State Water Resources Control Board. The State Board is in turn delegating certain responsibilities to the Regional Boards. For more information, please see their website, http://www.swrcb.ca.gov/prop13/ index.html

ii. Resources Agency. This large "umbrella" state agency has either assigned or had appropriated/designated certain funding to the various departments, boards and commissions, conservancies, and special programs. This agency has just recently been legislatively charged with the responsibility to develop a comprehensive listing of the available funding sources, including federal, state, local, and private, for water quality improvements. It is to be posted on the internet by November 1, 2002. For more information, see their website, http://ceres.ca.gov/cra

iii. Department of Water Resources. This Department within the Resources Agency has funding available for water replenishment projects. For more information, please see their website,

http://wwwdwr.water.ca.gov/WaterBond2000

3.3.2 On-Going Grant Programs

i. The state agencies noted above also have on-going grant programs. Their websites are excellent information sources.

ii Federal Government. There are many funding sources for water quality improvements. The sources are too numerous to list, however there is an excellent website at the Federal EPA that lists the federal and other sources. The site is: http://www.epa.gov/OWOW/watershed/wacademy/fund.html

3.3.3 Legislative Appropriations

Local jurisdictions can also work with stakeholders (Table 6) and elected representatives to pass legislation that funds water quality improvements. This can be done at both the local and national levels. Bond issues are another local and state method to fund improvements.

4.0 References

Los Angeles County Department of Public Works, *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report*, July 31, 2000

Los Angeles County Department of Public Works, *Los Angeles County 1999-2000 Stormwater Monitoring Report*, July 11, 2000

Los Angeles County Department of Public Works, *NPDES PERMIT NO. CA 006165, TASK 5.2, REPORT OF WASTE DISCHARGE (ROWD), VOLUME 8 OF 8*

California Department of Fish and Game, California Natural Diversity Database, Wildlife & habitat Data Analysis Branch, Data Date 11/6/00

Woodward-Clyde and Psomas and Associates, *Evaluation of Land Use Monitoring Stations*, 1996

Michelle Miller, *A Watershed Management Plan: Steps to Protect Your Water Supply*, http://www.epa.gov/OWOW/watershed/Proceed/miller.html

Regional Board, *Watershed Management Initiative Chapter, Executive Summary*, January 2000

Significant Ecological Areas in the Santa Clarita Valley, http://www.scope.org/scope/sea/index.html

MEETING SUMMARY

Meeting Date: Saturday January 27, 2001 (8:00 a.m. to 1:30 p.m.)

Location: LA River Center & Gardens

Project: Greening Institute

Attendance: Approximately 80-90 Attendees (Maria Lopez, Scott Schales, and Maged El-Rabaa of DPW)

Meeting Summary:

This was the introductory session of the Greening Institute. The Agenda covered was as follows: 1) Kathleen Bullard gave an introduction to the River Center and SD1's efforts, 2) Supervisor Gloria Molina spoke about the program and $4.5 million in Prop A funds available to the public for park developments in SD1, 3) the Resource Partners gave an individual introduction (both Scott Schales and I spoke, individually, about Watershed Management's mission and the involvement we have had thus far - as in the Master Plan in which we have worked with stakeholders to identify development opportunities), 4) Scott Wilson (NET) gave a slide presentation and overview of his agency's efforts to work with partnerships to develop parks 5) the constituents broke up into different groups to identify potential projects and their specific needs to be able to apply for funding, 6) Teresa Villegas (TPL) gave an introduction into available funding, and 7) Curt Robertson spoke about Prop A and the grant application due by March 15, 2001. After the presentations the group had lunch and the Resource Partners were available for additional discussions.

Conclusion:

Overall, I sensed that the group was mainly composed of representatives from established agencies, about 30% were actual residents. The Prop A presentation clarified that only non-profit organizations and public agencies would be able to apply for funding. There is no clear direction as to how the Resource Partners will be able to help constituents apply for projects, other than providing information, that the established agencies may already know.

Follow-Up Action:

1. Attend the next Resource Partner planning meeting on January 30, 2001 at 3:00 p.m.

Prepared by: Maria Lopez **Date:** January 29, 2001

5.0 Appendix

Table 4. Comparison of Annual Mean and Median Concentrations to Objectives

Class Constituent	DL	Units	Guidelines and Standards					Los Angeles River					
			Ocean Plan[g]	Basin Plan[g]	AB 411	California Toxics Rule (freshwater)[d]	California Toxics Rule (saltwater)[d]	1995-96	1996-97	1997-98	1998-99	1999-2000	Total
Total Rainfall (in.)								10.5	6.17	17.8	6.34	7.98	
Cyanide	0.01	mg/l	0.004[a]	0.2		0.0052	0.001	-	-	-	X	-	1
Total Coliform	20	MPN/100ml	1000[b]	70	10,000 (Instantaneous)			X	X	X	X	X	5
Fecal Coliform	20	MPN/100ml	200[b]	200	400 (Instantaneous)			X	X	X	X	X	5
Fecal Enterococcus	20	MPN/100ml	24[c]		104			X	-	-	X	X	3
Total Dissolved Solids	2.0	mg/l		250							X		1
Turbidity	0.1	NTU	75[b]					X		X	X	X	4
Total Aluminum	100	mg/l		1000				-	X	X	X		3
Dissolved Cadmium	1	mg/l				2.2	9.3	-	-	X	-	-	1
Dissolved Copper	5	mg/l	^			9	3.1	X	X	X	X	X	5
Total Copper	5	mg/l	12[a]					X	X	X	X	X	5
Dissolved Lead	5	mg/l				2.5	8.1	X	X	X	-	X	4
Total Lead	5	mg/l	8[a]					X	X	X	X	X	5
Total Mercury	1	mg/l	0.16[a]	2				-	-	-	-	-	
Dissolved Nickel	5	mg/l				52	8.2			X			1
Nickel	5	mg/l	20[a]	100				X		X			2
Dissolved Zinc	50	mg/l				120	81			X		-	1
Total Zinc	50	mg/l	80[a]					X	X	X	X		4
Bis(2-ethylhexyl)phthalate	1	mg/l	3.5[b]					X	X	X	-	-	3
Total								11	9	14	11	9	53

X = Greater than objective. Except for indicator bacteria, there are no numerical water quality standards that apply to stormwater or "non-point source" pollution. Current federal and state numerical standards apply only to "point source pollution," such as sanitary sewage, industrial and commercial discharges to the ocean, and other waterbodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff, and any exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, a direct comparison of the sampling results with the Ocean Plan standards cannot be made since the results presented in the table are detected values before dilution, a factor allowed by the Ocean Plan.

^ = Rain gage not active

- = Statistically invalid data, not enough samples or data above detection limit collecte

NS = Not Sampled

Blank = No Exceedance

DL = Detection Limit

a) Criteria based on daily maximum

b) Criteria based on 30-day average

c) Criteria for the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, 1,12-benzoperylene, benzo(a)pyrene, chrysene, dibenzo(ah)anthracene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene

d) Criteria continuous concentration which equals the highest concentration of pollutant to which aquatic life can be exposed for an extended period time (4 days) without deleterious effects.

e) Criterion expressed in the total recoverable form.

f) Criteria maximum concentration which equals the highest concentration of pollutant to which aquatic life can be exposed for a short period time without deleterious effects.

g) Except for indicator bacteria, there are no numerical water quality standards that apply to stormwater or "non-point source" pollution. Current federal and state numerical standards apply only to "point source pollution," such as sanitary sewage, industrial and commercial discharges to the ocean, and other waterbodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff, and any exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, a direct comparison of the sampling results with the Ocean Plan standards cannot be made since the results presented in the table are detected values before dilution, a factor allowed by the Ocean Plan.

h) Detection limits have changed throughout the monitoring process. Only data matching the current detection limit is displayed in this table. The Data Included Since field indicates the first year of the storm season with the current detection limit.

Table 5. Summary of Statistical Analysis Results of Water Quality Data

L.A. River

Constituent	DL	Units	1996-96						1996-97						1997-98						1998-99						1999-2000					
			No. of Samples	No. of Non-detects	Percent Detects	Mean	Median	CV	No. of Samples	No. of Non-detects	Percent Detects	Mean	Median	CV	No. of Samples	No. of Non-detects	Percent Detects	Mean	Median	CV	No. of Samples	No. of Non-detects	Percent Detects	Mean	Median	CV	No. of Samples	No. of Non-detects	Percent Detects	Mean	Median	CV
Cyanide	0.01	mg/L	5	5	0	BID	BID	BID	4	4	0	BID	BID	BID	5	7	13	BID	BID	BID	5	4	20	0.010	0.005	1.161	0	0	0	BID	BID	BID
Total Coliform	20	MPN/100ml	5	1	80	5,000,000	2,400,000	1.35	4	0	100	635,000	700,000	0.62	5	0	100	3,081,200	1,200,000	1.74	5	0	100	800,400	240,000	0.86	0	0	100	1,000,000	800,000	1.78
Fecal Coliform	20	MPN/100ml	5	0	100	3,000,000	1,400,000	1.77	4	0	100	162,250	60,250	1.07	5	0	100	2,761,120	270,005	1.90	5	0	100	110,040	17,000	1.67	0	0	100	200,002	140,000	1.34
Fecal Enterococcus	20	MPN/100ml	5	1	80	1,220,000	1,000,000	0.98	1	0	100	BID	BID	BID	0	0	BID	BID	BID	BID	5	0	100	51,000	35,000	1.16	0	0	100	71,000	17,000	1.23
Total Dissolved Solids	2.0	mg/L	4	0	100	144	131	0.39	4	0	100	121	102	0.46	7	0	100	65	74	0.60	5	0	100	107	94	1.00	10	0	100	139	134	0.42
Turbidity	0.1	NTU	4	0	100	105	110	0.69	4	0	100	34	25	1.61	7	0	100	100	104	0.66	5	0	100	1463	200	1.98	10	0	100	663	351	0.85
Total Aluminum	100	mg/L	5	0	BID	BID	BID	BID	4	3	25	1000	50	1.96	10	0	100	11,004	7170	1.62	5	5	0	BID	BID	BID	10	10	0	BID	BID	BID
Dissolved Cadmium	1	mg/L	4	4	0	BID	BID	BID	4	4	0	BID	BID	BID	10	4	60	3.5	2.5	1.15	5	1	80	0.8	0.4	0.48	10	5	50	5.0	4.2	0.71
Dissolved Copper	5	mg/L	4	3	25	10	2.5	1.61	4	3	25	4.0	2.5	0.82	10	0	100	60	64	1.28	5	1	80	8.0	7.4	0.48	10	0	100	12.8	12	0.31
Total Copper	5	mg/L	4	0	100	60	60	0.71	4	0	100	64	50	1.31	10	0	100	100	82	1.44	5	0	100	20	10	1.17	10	0	100	12.8	12	0.31
Dissolved Lead	5	mg/L	4	2	50	25	2.5	1.73	4	3	25	2.0	2.5	0.10	10	3	70	120	85	1.26	5	5	0	BID	BID	BID	10	8	20	3.2	2.5	0.46
Total Lead	5	mg/L	4	1	75	60	30	1.87	4	0	100	46	10	1.39	10	0	100	255	160	1.56	5	4	20	8.0	2.5	1.56	10	1	90	9.1	4.0	0.64
Total Mercury	1	mg/L	4	4	0	BID	BID	BID	4	4	0	BID	BID	BID	10	8	10	BID	BID	BID	5	5	0	BID	BID	BID	10	10	0	BID	BID	BID
Dissolved Nickel	5	mg/L	4	3	25	4.0	2.5	0.82	4	3	25	3.1	2.5	0.35	10	3	70	17	11	1.05	5	4	20	3.0	2.5	0.39	10	7	30	4.5	2.5	0.61
Nickel	5	mg/L	4	1	75	22.1	21.5	0.76	4	1	75	13	4.5	1.46	10	1	90	27	15	1.00	5	4	20	6.0	2.5	1.20	10	5	50	6.6	4.1	0.82
Dissolved Zinc	20	mg/L	4	2	50	35	30	0.67	4	2	50	45	35	0.44	10	3	70	417	224	1.64	5	3	40	42	25	0.58	10	10	0	BID	BID	BID
Total Zinc	20	mg/L	4	1	75	101	100	0.62	4	0	100	200	82	1.24	10	0	100	573	373	1.20	5	2	60	120	51	1.41	10	5	50	44	42	0.47
Bis(2-ethylhexyl)phthalate	1	mg/L	3	0	100	17	10	0.32	4	2	50	17	10	1.01	5	0	100	17	20	0.83	0	0	BID	BID	BID	BID	0	0	BID	BID	BID	BID

C.V. = Coefficient of variation

DL = Detection limit

BID = Statistically invalid Data, not enough data above detection limit collected

See Table 1 for water quality objectives

Table 6 WATERSHED MANAGEMENT
STAKEHOLDER LIST

Stakeholders	Jurisdiction	WATERSHED INTERESTS						
		ANT	SAL	DOM	LAR	MAL	SC	SGR
Alhambra	City				x			
Arcadia	City				x			
Bell	City				x			
Bell Gardens	City				x			
Burbank	City				x			
Commerce	City				x			
Compton	City				x			
Cudahy	City				x			
Downey	City				x			x
El Monte	City				x			
Glendale	City				x			
Hidden Hills	City				x			
Huntington Park	City				x			
La Canada Flintridge	City				x			
Long Beach	City				x			x
Los Angeles	City		x	x	x			
Lynwood	City				x			
Maywood	City				x			
Monrovia	City				x			
Montebello	City				x			
Monterey Park	City				x			
Paramount	City				x			
Pasadena	City				x			
Rosemead	City				x			
San Fernando	City				x			
San Gabriel	City				x			
San Marino	City				x			
Sierra Madre	City				x			
Signal Hill	City				x			
South El Monte	City				x			
South Gate	City				x			
South Pasadena	City				x			
Temple City	City				x			
Vernon	City				x			
Southern California Edison	Commercial		x	x	x	x		x
Altadena Foothills Conservancy	Conservancy				x			
California State Coastal Conservancy	Conservancy				x		x	x
Foothills Wildlife Conservancy	Conservancy				x			x
Monrovia Mountains Conservancy	Conservancy				x			x
Mountains Recreation and Conservation Authority	Conservancy				x			x
San Gabriel & Lower Los Angeles Rivers & Mountains Conservancy	Conservancy				x			x
Santa Monica Mountains Conservancy	Conservancy				x			x
Sierra Madre Mountains Conservancy	Conservancy				x			x
Arroyo Verdugo	Council of Government				x			
Gateway Cities	Council of Government		x	x	x	x		x
San Gabriel Valley	Council of Government				x			x
Southern California Association of Governments	Council of Government		x	x	x			x
County of Los Angeles Department of Parks and Recreation	County	x	x	x	x	x	x	x
County of Los Angeles Department of Public Works	County	x	x	x	x	x	x	x
County of Los Angeles Department of Regional Planning	County	x	x	x	x	x	x	x
County of Los Angeles Department of Water and Power	County	x	x	x	x	x	x	x
County of Los Angeles Fire Department	County	x	x	x	x	x	x	x
County of Los Angeles Open Space District	County	x	x	x	x	x	x	
County of Los Angeles Sanitation Districts	County	x	x	x	x	x	x	x
Metropolitan Transportation Authority	County	x	x	x	x	x	x	x
Supervisor Don Knabe, District 4	County Supervisor		x	x	x			
Supervisor Gloria Molina, District 1	County Supervisor				x			
Supervisor Michael Antonovich, District 5	County Supervisor	x			x		x	
Supervisor Yvonne Brathwaite Burke, District 2	County Supervisor		x	x	x			
Supervisor Zev Yaroslavsky, District 3	County Supervisor		x		x	x		
California Native Plant Society	Environmental	x	x	x	x	x	x	x
El Dorado Nature Center	Environmental				x			x
Friends of the Los Angeles River	Environmental				x			
Heal the Bay	Environmental		x	x	x	x		x
Hollywood Beautification Team	Environmental				x			
LA Bicycle Advisory Comm.	Environmental		x	x	x	x		x
LA City Bicycle Coalition	Environmental		x	x	x	x		x
LA County Bicycle Coalition	Environmental		x	x	x	x		x
North East Trees	Environmental	x	x	x	x	x	x	x
Sierra Club- LA Chapter	Environmental		x	x	x	x		x
Surfrider Foundation	Environmental		x	x	x	x		x
TreePeople	Environmental	x	x	x	x	x	x	x
Environmental Protection Agency	Federal	x	x	x	x	x	x	x
National Environmental Policy Act	Federal		x	x	x	x		x
National Marine & Fisheries Service	Federal	x	x	x	x	x	x	x
National Parks Service	Federal	x	x	x	x	x	x	x
National Resource Conservation	Federal	x	x	x	x	x	x	x
United States Army Corp of Engineers	Federal	x	x	x	x	x	x	x
United States Department of the Interior National Park Service	Federal	x	x	x	x	x	x	x
United States Fish and Wildlife Service	Federal	x	x	x	x	x	x	x
United States Forest Service - Angeles National Forest	Federal	x	x	x	x	x	x	x
Air Quality Management District	Local		x	x	x	x		x
City Police	Local		x	x	x	x		x
Sherman Oaks Homeowners Association	Local				x			
Wrigley Homeowners Association	Local				x			
American Institute of Architects	Organization		x	x	x	x		x
LA/SG Rivers Watershed Council	Organization				x			x
National Audubon Society	Organization		x	x	x	x		x
Trust for Public Land	Organization		x	x	x	x		x
Assemblymember Bob Margett, 59	State Assembly District				x			x
Assemblymember Curt Washington, 52	State Assembly District				x			x
Assemblymember Carol Liu, 44	State Assembly District				x			
Assemblymember Dario J. Frommer, 43	State Assembly District				x			
Assemblymember Gil Cedillo, 46	State Assembly District		x		x			
Assemblymember Gloria Romero, 49	State Assembly District				x			
Assemblymember Jackie Goldberg	State Assembly District				x			
Assemblymember Marco Firebaugh, 50	State Assembly District				x			
Assemblymember Martin Gallegos, 57	State Assembly District				x			x
Assemblymember Richard Floyd, 56	State Assembly District				x			
Assemblymember Sally Havice, 58	State Assembly District				x			x
Assemblymember Thomas M. Calderon, 58	State Assembly District				x			x
Assemblymember Tony Cardenas, 39	State Assembly District				x			
Assemblymember Wally Knox, 42	State Assembly District		x		x			
Speaker Robert M. Hertzberg, 40	State Assembly District				x			
Congressmember Brad Sherman, 24	State Congressional District				x			
Congressmember David Dreier, 29	State Congressional District				x			x
Congressmember Grace F. Napolitano, 34	State Congressional District				x			x
Congressmember Henry A. Waxman, 29	State Congressional District		x		x			
Congressmember Howard L. Berman, 28	State Congressional District				x			
Congressmember James E. Rogan, 27	State Congressional District				x			
Congressmember Juanita Millender-McDonald, 37	State Congressional District				x			
Congressmember Lucille Roybal-Allard, 33	State Congressional District		x		x			
Congressmember Matthew G. Martinez, 31	State Congressional District				x			x

Table 6 WATERSHED MANAGEMENT
STAKEHOLDER LIST

Stakeholders	Jurisdiction	WATERSHED INTERESTS						
		ANT	BAL	DOM	LAR	MAL	SC	SGR
Congressmember Maxine Waters, 35	State Congressional District		x	x	x			
Congressmember Stephen Horn, 38	State Congressional District				x			x
Congressmember Xavier Becerra, 30	State Congressional District		x		x			
California Conservation Corp	State Departments		x	x	x	x		x
California Department of Fish and Game	State Departments	x	x	x	x	x	x	x
California Department of Parks and Recreation	State Departments	x	x	x	x	x	x	x
California Department of Transportation	State Departments	x	x	x	x	x	x	x
California Department of Water Resources	State Departments	x	x	x	x	x	x	x
California Environmental Protection Agency	State Departments	x	x	x	x	x	x	x
California Environmental Quality Act	State Departments	x	x	x	x	x	x	x
Southern California Association of Governments	State Departments	x	x	x	x	x	x	x
State Department of Parks & Recreation	State Departments	x	x	x	x	x	x	x
State Department of Water Resources	State Departments	x	x	x	x	x	x	x
State Soils Conservation	State Departments	x	x	x	x	x	x	x
SWRCB-Regional Water Quality Control Board, LA Region	State Departments	x	x	x	x	x	x	x
Senator Betty Karnette, 27	State Senate District		x	x	x			x
Senator Debra Bowden, 28	State Senate District		x	x	x			
Senator Hilda L. Solis, 24	State Senate District				x			x
Senator Jack Scott	State Senate District				x			
Senator Martha Escutia, 30	State Senate District				x			x
Senator Richard Alarcon, 20	State Senate District				x			
Senator Richard G. Polanco, 22	State Senate District		x		x			
Senator Richard Mountjoy, 29	State Senate District				x			x
Senator Teresa Hughes, 25	State Senate District		x	x	x			x
Metropolitan Water Districts	Water Purveyor		x	x	x	x		x

ANT Antelop Valley
BAL Ballona Creek
DOM Dominguez Channel/L. A. Harbor
LAR Los Angeles River
MAL Malibu Creek
SC Santa Clara River
SGR San Gabriel River

Ventura County

Orange County

Pacific Ocean

SANTA CLARITA
SAN FERNANDO
BURBANK
GLENDALE
LA CANADA FLINTRIDGE
PASADENA
SIERRA MADRE
MONROVIA
ARCADIA
SAN MARINO
SOUTH PASADENA
TEMPLE CITY
SAN GABRIEL
ALHAMBRA
EL MONTE
ROSEMEAD
MONTEREY PARK
SOUTH EL MONTE
WEST HOLLYWOOD
BEVERLY HILLS
SANTA MONICA
CULVER CITY
INGLEWOOD
VERNON
CITY OF COMMERCE
HUNTINGTON PARK
WHITTIER
LA HABRA
SANTA FE SPRINGS
SOUTH GATE
LYNWOOD
NORWALK
LA MIRADA
EL SEGUNDO
HAWTHORNE
MANHATTAN BEACH
LAWNDALE
GARDENA
COMPTON
BELLFLOWER
HERMOSA BEACH
REDONDO BEACH
ARTESIA
LAKEWOOD
TORRANCE
CARSON
HAWAIIAN GARDENS
PALOS VERDES ESTATES
LOMITA
ROLLING HILLS ESTATES
ROLLING HILLS
RANCHO PALOS VERDES

Legend

- L.A. County Boundary
- L. A. River WMA
- Freeway System

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R0000164

Los Angeles River Watershed Management Area Plan

Figure 1. Watershed Boundary

N W E S

2 0 2 4 Miles

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September 11, 2000

Ventura County

Pacific Ocean

Orange County

Legend

- L.A. County Boundary
- L. A. River WMA
- Sub-Basins
- Flow Direction
- Major Channels

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

R0000165

Los Angeles River Watershed Management Area Plan

Figure 2. Sub-Basins and Flow Directions

N W E S

2 0 2 4 Miles

P:\epoub\water\gis\projects\wmaps\LA River WMA.apr

September 11, 2000

Ventura County

Orange County

Pacific Ocean

Legend

- L.A. County Boundary
- L. A. River WMA
- Freeway System
- Contour Lines

Los Angeles River Watershed Management Area Plan

Figure 3. Contours

R0000166

N W E S

2 0 2 4 Miles

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September 11, 2000

Ventura County

Pacific Ocean

Orange County

Legend

- L.A. County Boundary
- L. A. River WMA
- Major Channels
- Minor Channels
- Reservoirs, Debris, and Retention Basins
- Spreading Grounds
- Freeway System

LOS ANGELES COUNTY PUBLIC WORKS
Public Service That Works

R0000167

Los Angeles River Watershed Management Area Plan

Figure 4. Drainage Facilities

N
W E
S

2 0 2 4 Miles

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September 11, 2000

Ventura County

Pacific Ocean

Orange County

Legend

- L.A. County Boundary
- L. A. River WMA

Land Use

- HDSFR (28.82%)
- Light Industrial (5.13%)
- Vacant (39.82%)
- Retail/Commercial (3.74%)
- Multiple Family Residential (3.85%)
- Transportation (2.44%)
- Education (1.91%)
- Mixed Residential (1.83%)
- All Other (12.46%)

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

R0000168

Los Angeles River Watershed Management Area Plan

Figure 5. Land Use

N W E S

2 0 2 4 Miles

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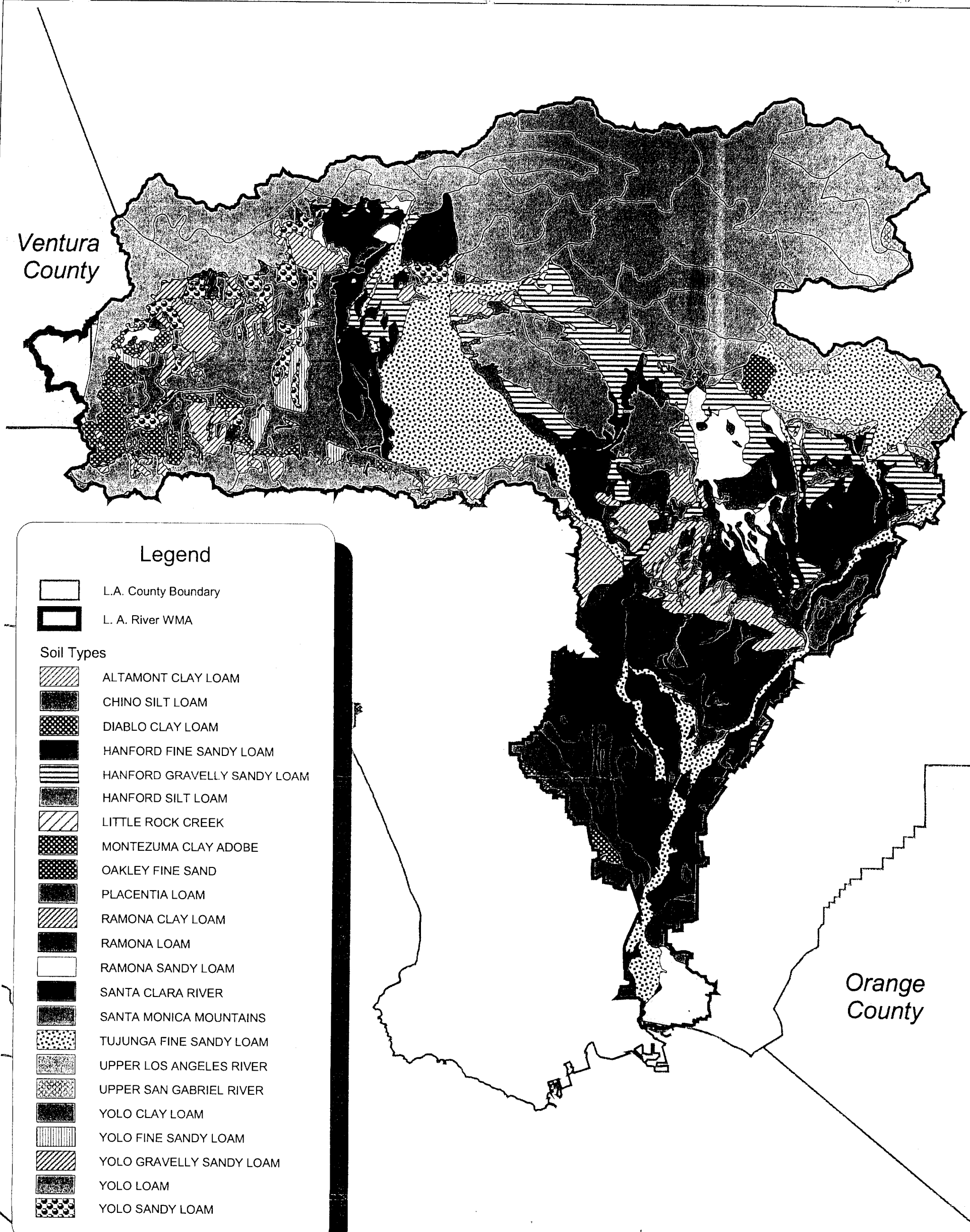
September 11, 2000



LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

Los Angeles River Watershed Management Area Plan

Figure 6. Soil

R0000169

N W E S

2 0 2 4 Miles

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September 11, 2000

Ventura County

Pacific Ocean

Orange County

Legend

- Freeway System
- Primary Streets

Federally Listed As Threatened and Endangered Species

- BRAUNTON'S MILK-VETCH
- COASTAL CALIFORNIA GNATCATCHER
- COASTAL DUNES MILK-VETCH
- LEAST BELL'S VIREO
- NEVIN'S BARBERRY
- SALT MARSH BIRD'S-BEAK
- SANTA ANA SUCKER
- SLENDER-HORNED SPINEFLOWER

Data Source: California Natural Diversify Database
Wildlife and Habitat Data Analysis Branch, Department of Fish and Game, November 2000

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

R0000170

Los Angeles River Watershed Management Area Plan

Figure 7a. Federally Listed As Threatened and Endangered Species Locations

N W E S

2 0 2 4 Miles

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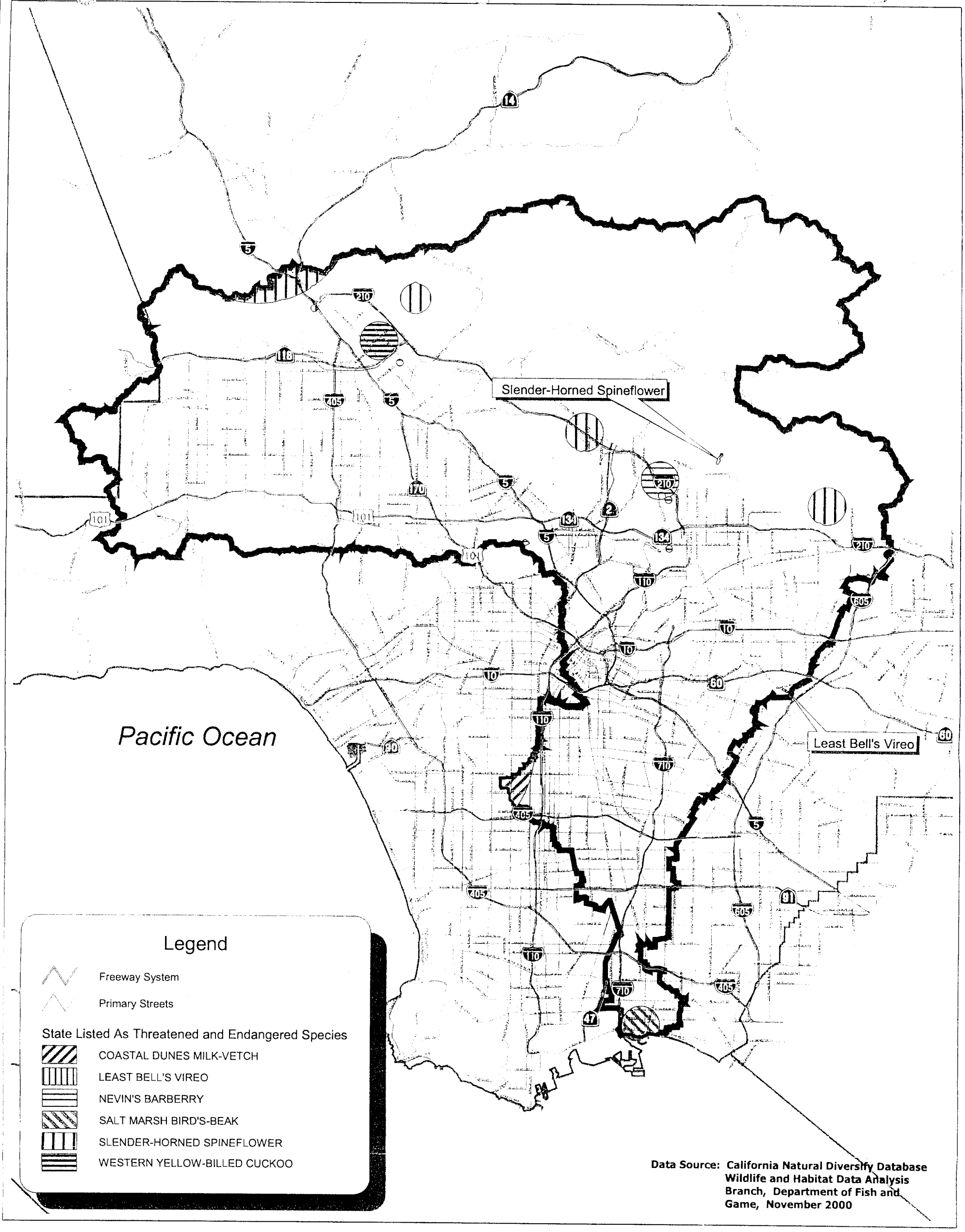
December 12, 2000



R0000171

Los Angeles River Watershed Management Area Plan

Figure 7b. State Listed As Threatened and Endangered Species Locations

N
W E
S

2 0 2 4 6 Miles

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December 12, 2000

Pacific Ocean

Legend

- Freeway System
- Primary Streets
- Channels and Reservoirs
- L. A. River Monitoring Area

Monitoring Station S10

R0000172

Los Angeles River Watershed Management Area Plan

Figure 8. Mass Emission Monitoring Station S10

N W E S

2 0 2 4 6 Miles

MALIBU CREEK
WATERSHED MANAGEMENT AREA PLAN

FEBRUARY 01, 2001

LOS ANGELES REGION

WASTE DISCHARGE REQUIREMENTS
FOR
MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES
WITHIN THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

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1.0 Watershed Management Area Plan Overview

In compliance with the 1996 municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit (Order No. 96-054), Los Angeles County (Principal Permittee) is required to develop a Watershed Management Area Plan (WMAP) for each Watershed Management Area (WMA) in coordination with the cities (Permittees) in each WMA. The WMAP consists of the following: a description of each watershed's characteristics; the Stormwater Quality Management Plan (SQMP), formally known as the five Model Programs (see Appendix); quality of stormwater runoff analyses; identified projects to improve quality of stormwater and urban runoff; and available funding resources.

2.0 Watershed Characteristics

2.1 Watershed Area

The Malibu Creek Watershed is located in the southwest corner of Los Angeles County. It is bounded on the north and west by Ventura County, on the north and east by the Los Angeles city limits and on the south by the Pacific Ocean. The watershed area is comprised of approximately 109 square miles (Figure 1).

In accordance with the 1996 NPDES Permit, the County of Los Angeles is divided into six WMAs. The Permittees within the Malibu Creek WMA, as listed in the Permit, are as follows:

Agoura Hills
Calabasas
Los Angeles County
Malibu
Westlake Village

2.2 Natural Characteristics

2.2.1 Topography

Figure 3 shows the watershed's contour lines at 50-foot increments. Topographically, the area is characterized by steep, rough mountainous terrain. The predominant drainage is towards the Pacific Ocean. A narrow belt of marine terraces extends along the ocean west from Malibu to the Ventura County line. There are also numerous small valleys throughout the area. Some of the largest of these are Las Virgenes Canyon and the Agoura area. Elevations range from sea level to 2,824 feet at Castro Peak, the highest point in the area.

2.2.2 Climate

The mean annual precipitation in the watershed is about 18.79 inches. The Santa Monica Mountains have a seasonal rainfall of about 19.96 inches, and the San Fernando Valley has 17.62 inches per year. Although large year-to-year variations are common, most rainfall events are associated with winter fronts. Precipitation is significantly lower in the dry season (April 16 to October 14) than in the wet season (October 15 to April 15). Average summer temperature in the watershed is 71°F, average winter temperature is 53°F, and average annual temperature is 61°F, with an average frost-free season of 275-325 days.

2.2.3 Hydrology

Runoff rates from the exposed rock formations of the mountain rim of the watershed may be high. Although infiltration into rock formations does occur, these rates have not been quantified. Historically, many streams of the upper watershed are intermittent to ephemeral USGS blue-line channels, drying up in the mid-summer until the onset of the rainy season. Given their position in the watershed, local residents' comment and substrate type, it is reasonable to assume that Las Virgenes Creek, lower Medea Creek and Cold Creek were historically perennial to intermittent. These streams are historically losing streams, delivering most of their flow to groundwater, with exceptions of discontinuous stream segments on Malibu Creek below the confluence with Las Virgenes Creek. Except for springs emanating from the Lower Topanga Formation, groundwater fed by precipitation roughly parallels the topography, converging in the valleys. Groundwater continues on a downstream gradient toward the ocean, emerging as a gaining stream below the Las Virgenes confluence.

2.2.4 Flow Characteristics

2.2.4.1 Flow Direction

Runoff in the natural canyons and streams flow in a generally southerly direction toward culverts underneath the Pacific Coast Highway and the Pacific Ocean (Figure 2).

2.2.4.2 Sub-Basins

The sub-basins delineated in Figure 2 show hydrological areas and where they drain. They are based on the contour lines in Figure 3.

2.2.5 Land Use

As shown in Table 1, most of the land in the watershed is "vacant", or undeveloped (Figures 5 and 6).

Table 1. Land Use Distribution

Land Use Category	Percent by Area
Vacant	85.38
Transportation	2.53
High-Density Single-Family Residential (HDSFR)	2.8
Light Industrial	0.12
Multiple-Family Residential	0.51
Retail/Commercial	0.21
Education	0.27
All Other	8.18

The Los Angeles County land use monitoring program under the 1996 NPDES permit is a result of a site selection study entitled *Evaluation of Land Use Monitoring Stations* (Woodward-Clyde and Psomas and Associates, 1996). This study identified the most significant land use categories within the permit area regarding stormwater quality. The selection study yielded eight land use monitoring stations. These eight land use monitoring stations represent over 86% of all the land uses within the permit area. These stations monitor flow and have automated samplers to collect flow-weighted composite stormwater samples during storm events. The 34 categories shown in Table 2 cover 100% of the land uses in the County.

Figure 6 depicts the eight land use categories currently monitored with their respective percent by area within the watershed. The remaining land use categories are summarized as "All Other" in Table 1.

Table 2. Land Use categories

Land Use Category	Inclusive Scag Land Use Codes [1]
High Density Single Family Residential [2]	1111
Light Industrial [2]	1311 through 1315, 1340
Vacant [2]	3100, 3200, 3300, 3400
Retail/Commercial [2]	1221 through 1224
Multiple Family Residential [2]	1121 through 1125
Transportation [2]	1411 through 1416, 1418
Education [2]	1261 through 1266
Low Density Single Family Residential	1112
Mixed Residential [2]	1140
General Office	1211 through 1213
Natural Resources Extraction	1331, 1332
Institutional	1241 through 1247, 1251 through 1253
Heavy Industrial	1321 through 1325
Other Commercial	1231 through 1234
Open Space/Recreation	1820, 1830, 1840, 1850, 1860, 1870, 1880
Utility Facilities	1431, 1432, 1433, 1435, 1436, 1438
Mobile Homes and Trailer Parks	1131, 1132
Mixed Transportation and Utility	1450, 1460
Floodways and Structures	1434, 1437
Rural Residential	1151, 1152, 1439
Under Construction	1700
Golf Courses	1810
Nurseries and Vineyards	2200, 2300
Maintenance Yards	1440
Urban Vacant	1900
Military Installations	1271 through 1273
Agriculture	2100, 2110, 2120, 2600

Harbor Facilities	1417, 4401
Animal Husbandry	2400, 2500, 2700
Mixed Commercial and Industrial	1500
Communication Facilities	1420, 1421
Mixed Urban	1600
Marina Facilities	4300
Receiving Waters	4100, 4200, 4400, 4500

(1) Based on Anderson Land Use Level III/IV Classification.

(2) Land use monitored

2.2.6 Geology/Soil

The watershed mainly consists of undeveloped mountainous terrain known as the Santa Monica Mountains. The other types of soil classification in the watershed are Altamont Clay Loam and Diablo Clay Loam (Figure 7).

2.2.7 Significant Ecological Areas

Significant Ecological Areas (SEAs) are defined and delineated in conjunction with the Land Use and Open Space Elements of the Los Angeles County General Plan.

An area qualifies for recognition as an SEA if it possesses one or more of the following features, or classes:

i. Is the habitat of rare, endangered, or threatened plant or animal species.

ii Represents biotic communities, vegetative associations, or habitat of plant or animal species that are either one-of-a-kind, or are restricted in distribution on a regional basis.

iii. Represents biotic communities, vegetative associations, or habitat of plant or animal species that are either one-of-a-kind, or are restricted in distribution in Los Angeles County.

vi. Is habitat that at some point in the life cycle of a species or group of species, serves as a concentrated breeding, feeding, resting, or migrating grounds, and is limited in availability

v. Represents biotic resources that are of scientific interest because they are either extreme in physical/geographical limitations, or they represent an unusual variation in a population or community.

iv Is an area important as game species habitat or as fisheries.

vii. Is an area that would provide for the preservation of relatively undisturbed examples of the natural biotic communities in Los Angeles County.

viii. Is a special area, worthy of inclusion, but one which does not fit any of the other seven criteria.

Los Angeles County Department of Regional Planning (Regional Planning) is in the process of updating the SEAs coverage. The final SEAs information will be included in this plan when Regional Planning has finalized the SEAs coverage.

2.2.8 Threatened and Endangered Species

The watershed supports a variety of Threatened and Endangered Species according to the California Department of Fish and Game's November 2000 California Natural Diversity Database (CNDDB). The CNDDB provides both state and federally listed Threatened and Endangered species of plants and animals (Figures 7b and 7a, respectively).

The watershed hosts the following threatened or endangered plants:

- Braunton's Milk-Vetch,
- Lyon's Pentachaeta,
- Marcescent Dudleya and
- Santa Monica Mountains Dudleya.

These plants are primarily located in and around the waterways of Arroyo Sequit, Malibu Creek, and Topanga Canyon.

The watershed hosts the following threatened or endangered animals:

- Steelhead-Southern California ESU, and
- Tidewater Goby.

These fish may be found in the same waterways as the plant species.

2.2.9 Vegetation and Wildlife Ecology

The vegetation and ecology of the Santa Monica Mountains (SMM), including the watershed, is consistent with that of a Mediterranean climate with mild winters, warm dry summers, and seasonal coastal fog. It is these unique conditions which have created the diverse assemblage of plant communities and habitat types within the watershed. This diversity is also reflective of the complex topography, underlying geology, and soils of the watershed. The southern slopes of the SMM are strongly affected by the marine weather conditions

while the northern slopes are influenced by drier inland weather conditions.

Most of the watershed is heavily vegetated with native plant communities. Vegetation in general plays an important role in stabilizing soils and preventing erosion. Within the watershed this role is crucial in many areas where chaparral covers steep slopes with sandy soils. This role functions to protect not only freshwater stream habitat but coastal marsh habitat at the mouth of Malibu Creek as well. The watershed contains diverse plant communities including oak woodland, walnut woodland, riparian woodland, valley oak savannah, grassland, coastal sage scrub, chaparral, wetland, coastal marsh, ornamental, landscapes and disturbed lands.

The diversity of vegetation types and the large acreage of natural open space within the watershed provides habitat for an abundant and diverse wildlife community. While a few wildlife species are entirely dependent on a single vegetative community, the entire mosaic of all the vegetation types within the watershed and adjoining areas constitutes a functional ecosystem for a variety of wildlife species, both within the watershed and as part of the regional Santa Monica Mountains ecosystem.

Amphibian populations are plentiful due to the high moisture content provided by coastal conditions, as well as the large number of drainages and year-round surface water sources. Amphibians are likely to be in highest numbers within the moister woodland areas and canyon bottoms. Many reptilian habitat characteristics can also be found scattered throughout the watershed such as rock outcrops which allow for high visibility, and small mammal burrows which allow for cover and escape from predators and extreme weather. Over 35 species of reptiles and amphibians have been recorded within the watershed. Several invertebrate studies have been performed in the watershed, including two under the auspices of UCLA - funded through the Coastal Conservancy (Ambrose, 2000) and the SMMRCD (1994). These studies concluded that there is some invertebrate diversity problems within the watershed. Further work in this area is needed.

Birds diversity in the watershed is high. The scrubland, woodland, riparian, and grassland habitats within the watershed provide foraging and cover habitat for year round residents, seasonal residents, and migrating song birds. Many year-round water sources located throughout the watershed provide abundant foraging, perching, and nesting habitat along the northern slopes of the watershed. The southern edge of the watershed, along the coast rim, is also part of the Pacific Flyway migration route. The combination of these

resources as well as the confluence of many community types supports an unusually high diversity of bird species. Records from within the watershed indicate that nearly 400 species of birds utilize the habitat within the watershed at some point in their life cycle.

Mammal diversity, not surprisingly, is also high within the watershed. Fifty species of mammals have been observed in the watershed including mountain lions, mule deer, bobcat, badgers, and many others. While most of these species can be found in other areas within the region, the watershed and the Santa Monica Mountains are unique in the number of coexisting populations of so many species.

While all of the habitat types within the watershed ecosystem play important roles, riparian habitats and salt marsh are integral to the maintenance of high species diversity. Riparian communities, including southern willow scrub, sycamore-alder woodland, southern cottonwood-willow riparian forest, oak riparian forest, freshwater marsh, salt marsh, and mulefat scrub can be found along all the major drainages and many of their tributaries throughout the watershed. Although the acreage of these communities is much smaller than the adjacent upland communities, they concentrate many essential resources which are generally scarcer in upland communities, including food, water, and shelter in a variety of accessible forms. Shelter may be simply the shade of trees that can substantially decrease air and water temperatures. Furthermore, it is estimated that at least 85% of all wildlife utilize riparian areas at some point in their life cycle (Washington State Department of Biology). Clearly these communities are important to upland species and are essential in maintaining the diversity of wildlife occupying the watershed.

The salt marsh habitat of Malibu Lagoon, at the mouth of Malibu Creek, is an uncommon wetland resource in the region. This community provides habitat to a multitude of bird species for both foraging and breeding. Records indicate more than 260 bird species have been identified in the lagoon and adjacent upstream riparian habitat. In addition, this marsh represents one of the few remaining salt marsh communities in the region. The brackish conditions of this community create habitat for a variety of species not found in any other community. Although the lagoon is relatively small, its existence substantially increases the diversity of species within the watershed. The Malibu Lagoon is Santa Monica Bay's only remaining brackish water lagoon.

2.3 Quality of Stormwater Runoff

2.3.1 Monitoring Activities

To characterize the quality of stormwater runoff in Los Angeles County, sampling of large area Mass Emissions sites has been performed under the 1990 and 1996 municipal stormwater NPDES permits.

2.3.1.1 Monitoring Station Location

Los Angeles County Department of Public Works (LACDPW) has been monitoring four major drainage areas near their outfalls to the ocean. The following mass emission monitoring stations installed under the original 1990 Permit were retained under the 1996 Permit: the Los Angeles River Monitoring Station, the San Gabriel River Monitoring Station, the Ballona Creek Monitoring Station, and the Malibu Creek Monitoring Station.

The Malibu Creek Monitoring Station is located at the existing stream gage station (Stream Gage No. F130-9-R) near Malibu Canyon Road, south of Piuma Road. At this location, the tributary watershed to Malibu Creek is 104.9 square miles. The entire watershed is 109.9 square miles.

2.3.1.2 Stormwater Sample Collection Methods

Grab and composite sample collection methods, defined below, are used to collect samples.

- Grab Sample - a discrete, individual sample taken within a short period of time, usually less than 15 minutes. This method is used to collect samples for constituents that have very short holding times and specific collection or preservation needs. For example, samples for coliforms are taken directly into a sterile container to avoid non-resident bacterial contamination.
- Composite Sample - a mixed or combined sample created by combining a series of discrete samples (aliquots) of specific volume, collected at specific flow-volume intervals. Composite sampling is ideally conducted over the duration of the storm event.

Grab samples are collected during the initial portion of the storm event and then taken to the laboratory.

Flow composite storm samples were obtained using an automated sampler to collect samples at flow-paced intervals. Samples collected at each station were combined in the laboratory to create a single flow-weighted sample for analysis.

2.3.2 Comparison of Mass Emissions Concentrations to the Ocean Plan, Basin Plan, and California Toxics Rule

It should be noted that, except for bacteria indicators, there are no numerical water quality standards that apply to stormwater or nonpoint source pollution. Current federal and state numerical standards apply only to point source pollution, such as sanitary sewage, industrial and point source discharges to the ocean and other water bodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff. An exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, the sampling results used to produce Tables 5 and 6 (see Appendix) are detected values before dilution, a factor allowed by the Ocean Plan.

Both the annual mean and median of the analyses of some 209 constituents sampled were compared to the water quality objectives outlined in the California Ocean Plan, the Los Angeles Basin Plan, and the California Toxics Rule. For stormwater bacteria indicators, the log mean of the Most Probable Number per 100 ml was compared to the objectives of AB411.

Table 5 shows constituents whose annual mean or median virtually exceeded the water quality objectives described above. Eleven chemical constituents were identified as constituents of concern from the comparison. For bacteria indicators, the log mean of the Most Probable Number per 100 ml was compared to the objectives of AB411. Total coliform and fecal coliform, and enterococcus are included due to their exceedance of AB411.

2.3.3 Long-term Trend Analysis

A long-term trend analysis was performed for the fourteen water quality constituents selected through the screening procedure over the period from 1994 to 2000. The constituents analyzed include: cyanide, total coliform, fecal coliform, fecal enterococcus, total dissolved solids, turbidity, total aluminum, dissolved copper, total copper, total lead, dissolved nickel, nickel, total zinc and bis(2-ethylhexyl)phthalate. Table 6 shows a summary of statistical analysis results of water quality data collected from the Malibu Creek Monitoring Station.

Tables 5 and 6 show that the bacteria indicator standards for total and fecal coliform were exceeded for every year. The prominent virtual exceedances occurred with fecal enterococcus, turbidity, and total dissolved solids. The tables also show that the 1997-1998 storm season, the El Niño season, contributed the most virtual exceedances (Thirteen constituents exceeded the water quality objectives). It should be noted that there were no virtual exceedances by nutrients (compounds of nitrogen and phosphorus) of the three water quality objectives. The following represents a summary of water quality trends:

Total Coliform

The median concentrations were relatively steady from the 1994-1995 storm season to the 1997-1998 storm season. Although there has been a drastic reduction in total coliform since the 1997-1998 storm season, its populations still exceed the Basin Plan, Ocean Plan and AB 411 objective limits.

Fecal Coliform

The highest median concentration was observed in the 1994-1995 storm season. Significant reduction in fecal coliform concentrations is noted from the 1995-1996 storm season with an isolated peak occurring in the 1997-1998 storm season. Nevertheless, all mean and median concentrations are largely above the water quality objective limits throughout the entire monitoring period.

Fecal Enterococcus

The data show a general trend of reduction on fecal enterococcus concentration since 1994. It should be noted that there were not enough data available for the statistical analysis between the 1996-1997 and 1997-1998 storm seasons.

Total Dissolved Solids

There were not enough data available for the statistical analysis for the first three storm seasons. After that, the median concentrations stayed virtually constant above the Basin Plan water quality objective limit from the 1997-1998 storm season to the 1999-2000 storm season.

Turbidity

The highest median concentration occurred in the 1997-1998 storm season, exceeding the Ocean Plan water quality objective limit. Between the 1998-1999 and 1999-2000 storm seasons, there was a significant reduction of turbidity and median concentrations during this period were below the water quality objective.

Total Aluminum

There was no data available for the analysis from the 1994-1995 storm season to the 1996-1997 storm season. One exceedance of the Basin Plan water quality objective limit was observed in the 1997-1998 storm season; however, this appeared to be only temporary and concentrations again dropped below the water quality objective limit for the remaining monitoring period.

Dissolved Copper

Peak dissolved copper concentrations were observed in the 1997-1998 and 1999-2000 storm seasons and only one of median concentrations exceeded the California Toxics Rule limit for saltwater in the 1997-1998 storm season. There were not enough water quality data available for the analysis for the rest of the monitoring period.

Total Copper

Both mean and median concentrations exceeded the Ocean Plan water quality objective limit in the 1997-1998 storm season. Between the 1998-1999 and 1999-2000 storm seasons, there is a rapid decreasing trend for total copper, and mean and median concentrations are in compliance with the Ocean Plan objective.

Other Metals

Only mean concentrations of total lead, dissolved nickel, nickel and total zinc exceeded the water quality objective limits in the 1997-1998 storm season. No exceedance of the water quality objective limits was observed for the rest of the monitoring period.

Bis(2-ethylhexyl)phthalate

The highest median concentration occurred in the 1997-1998 storm season, exceeding the Ocean Plan water quality objective. Between the 1998-1999 and 1999-2000 storm seasons there was a significant reduction of Bis(2-ethylhexyl)phthalate and median concentrations during this period were below the objective limit.

2.4 Significant Stormwater Issues Within the WMA

A modified list of significant stormwater issues within the WMA identified in the Los Angeles Regional Water Quality Control Board's (Regional Board) Watershed Management Initiative Chapter, is as follows:

- Excessive freshwater, nutrients, and coliform in lagoon,
- Septic tanks in lower watershed,
- Appropriate restoration and management of lagoon,
- Access to creek and lagoon by endangered fish, and
- Currently scheduled Total Maximum Daily Loads (TMDLs) for the next 6-years are: coliform, nutrients, and metals.

3.0 Watershed Management Plan

3.1 Source Control Strategies

3.1.1 Non-structural Controls - regulatory policies/programs to minimize threats to stormwater and urban runoff quality.

Permittees within this WMA have adopted the SQMP, jointly developed under the 1996 NPDES Permit, in its entirety as effective and comprehensive procedures for controlling pollution runoff. The Permittees within this WMA are implementing all applicable requirements of the SQMP. Through the extensive effort to meet all the Permit requirements, the Permittees within this WMA have made significant progress in reducing urban runoff pollution. The Permittees within this WMA anticipate further success as SQMP requirements are carried forward and reinforced in future years. The SQMP serves as guidance and requirements under this WMAP.

LACDPW has updated the Development Planning and Public Agency Activities Model Program of the SQMP to reflect the recent approval of a Standard Urban Stormwater Mitigation Plan (SUSMP) requirements. An executive summary of the SQMP has also been added to the beginning of each individual model program of the SQMP. Additional revisions to all model programs will be made following the adoption of the 2001 NPDES Permit.

Under the 2001 NPDES permit, the Permittees within this WMA anticipate that additional efforts will be focused on controlling coliform, nutrients, and metals. The Permittees within this WMA anticipate working with Regional Board staff to develop and implement a plan for the TMDLs to monitor and control these pollutants to the maximum extent practicable.

3.1.2 Structural Controls - any existing and proposed projects to reduce/minimize pollutants of stormwater and urban runoff.

Table 3. Improvement Projects for Stormwater and Urban Runoff

Permittee	Projects:
Agoura Hills	Current projects: Installed a sediment basin to reduce sediment at the entrance of the Chesebro Canyon.
Calabasas	Current projects: Installed Fossil Filters in every drain in the Agoura/Calabasas Community Center parking lot to reduce the amount of oil and grease released from cars parked at the facility. Installed a CDS unit and Abtech Filters to prevent some trash from entering the creeks from Calabasas Road.
LACDPW	Future/Proposed Projects: Plan on installing catch basin inserts in all maintenance yards' catch basins, Catch Basin Debris Excluders in selected catch basins, and in-line storm water clean-up devices in selected storm drains. Investigate the construction of permanent roof cover for existing and new material storage areas and fuel dispensing islands in some of their field facilities.
Malibu	Current projects: Installed a Stormceptor with a Purizer Disinfection Facility on the major storm drain which outlets directly into Malibu Lagoon. A complete results will be released by the end of year 2000. Future/Proposed Projects: Seek grant funding to install two more Purizer Disinfection Facilities on the other two major storm drains from the Civic Center area.

3.1.3 Table 4, Recommendations for the NPDES Permit Requirements, lists numerous activities suggested to the 2001 NPDES permit.

Table 4
RECOMMENDATIONS FOR THE NPDES PERMIT REQUIREMENTS

		Goals:	Improve WQ	Manage Water Quality	Natural Resources	Reduce Development WQ Impacts	Reduce Health Risks	By Whom?	Lead?
1	**Policy and Planning**								
1.1	Consider the need for and the implementation of riparian buffer zones at the municipal, county and state level.		x		x	x	x	ALL	COG
1.2	Promote the use of native plant species and the removal invasive exotics on residential landscapes, rural county lands, urban public space, and commercial/industrial landscapes.			X	x			ALL	
1.3	Review all policies, ordinances and codes in light of the principles of sustainable development, where necessary.		x	x	x	x	x	ALL	
1.4	Work regionally with other agencies and groups to research and apply for foundation and grant funding.		x		x			ALL	
1.5	Investigate land parcels in undeveloped areas that promote water quality and critical habitat protection to develop a priority list for protection.		x	x	x	x		ALL	
1.6	Integrate a watershed planning perspective into General Plans and local ordinances when General Plans are significantly rewritten.			x	x	x		ALL	
1.7	Promote low flush toilets and minimize leakage from domestic water pipes.		x	x	x	x		ALL	
1.8	Promote voluntary reduction of stormwater runoff from private property.		x	x	x	x	x	ALL	
1.9	Support State and federal septic system siting, performance, and monitoring.		x	x		x	x	ALL	

1.1	Work regionally with other agencies/groups to advance knowledge relating to watershed management.		x	x	x	x		ALL	
2	**Watershed Studies and Programs**								
2.1	Map and digitize all stormdrains and outfalls in the watershed.		X	X		X		ALL	
3	**Reduce Excess Flows**								
3.1	Promote alternative water source to potable water where appropriate for toilets and irrigation.			X		X		ALL	
3.2	Consider the need for and the implementation of riparian buffer zones at the municipal, county and state level.		X	X		X	X		
3.3	Develop education and public outreach program to discourage residents on hosing driveway and washing cars on driveways.			X		X	X		
3.4	Establish educational programs in hotels/motels to encourage water conservation.			X		X			
4	**Implementation Measures**								
4.1	In cooperation with Malibu RCD, install demonstration project for livestock BMPs for horse owners and cattle pasture.		X		X	X	X	Malibu, Calabas, and Agoura Hills; County-Public Ed. BMPs only	
4.2	Develop and conduct general and focused education programs watershed-wide. Specifically, improve outreach to horse and other livestock owners about how animal waste impacts water quality, and ways to minimize this source of pollution.		X			X	X		
5	**Existing Programs**								
5.1	Prevent excess erosion and sedimentation along roadways and at construction sites.		X			X		ALL	CLB/LAC
5.2	BMP implementation at construction sites.		X			X		ALL	LAC
5.3	Educate business regarding polluted discharges from restaurants and gas stations.		X			X		ALL	LAC

5.4	Identify and eliminate illicit connections on a regular basis.		X			X		ALL	LAC
5.5	Educate business regarding retail and commercial impacts to stormwater runoff.		X			X		ALL	LAC
5.6	Educate landscape architects, designers, and engineers on stormwater program requirements.		X	X		X		ALL	LAC
5.7	Facilitate children and School programs.			X		X		ALL	LAC

3.2 Recommended Studies

Over the next five years, the Permittees within this WMA anticipate providing guidance on the scope of work for any studies related to receiving water impacts. In particular, the Permittees within this WMA anticipate that future studies may address the following issues:

i. The removal efficiency vs. cost comparison for all adopted Performance Standards to assist in effectively focusing resources.
ii. The pollutant removal efficiencies of all structural devices required for new development to assist in properly sizing devices and in excluding ineffective ones.
iii. An evaluation of the current vs. "natural state" of the Malibu Creek's sediment loading, sediment discharge periods, sediment gradation, and environmental impact taking into account factors such as paved areas and riparian corridor restriction.
iv. Investigate regional solutions to address stormwater quality (i.e. use of spreading grounds, retention basins, and other similar activities).
v. Studies that evaluate the actual impact of pollutants, and pollutant levels, on the beneficial uses of receiving waters.

3.3 Funding Resources

A variety of different grant funding sources are available to assist in implementing the NPDES permit requirements. They can generally be categorized into specific grant programs and on-going grant programs, or legislative appropriations.

3.3.1 SpecificGrant Programs

These are usually bond issues or legislative funded programs administered by state, local agencies or conservancies. The most recent of these is Proposition 13. The majority of funds not specifically identified and budgeted by the state are being administered through competitive grant programs by the following state agencies:

i. State Water Resources Control Board. The State Board is in turn delegating certain responsibilities to the Regional Boards. For more information, please see their website, http://www.swrcb.ca.gov/prop13/ index.html
ii. Resources Agency. This large "umbrella" state agency has either assigned or had appropriated/designated certain funding to the various departments, boards and commissions, conservancies, and special programs. This agency has just recently been legislatively charged with the responsibility to develop a comprehensive listing of the available funding sources, including federal, state, local, and private, for water quality improvements.

It is to be posted on the internet by November 1, 2002. For more information, see their website, http://ceres.ca.gov/cra

iii. Department of Water Resources. This Department within the Resources Agency has funding available for water replenishment projects. For more information, please see their website, http://wwwdwr.water.ca.gov/WaterBond2000

3.3.2 On-Going Grant Programs

i. The state agencies noted above also have on-going grant programs. Their websites are excellent information sources.

ii. Federal Government. There are many funding sources for water quality improvements. The sources are too numerous to list, however there is an excellent website at the Federal EPA that lists the federal and other sources. The site is: http://www.epa.gov/OWOW/watershed/wacademy/fund.html

3.3.3 Legislative Appropriations

Local jurisdictions can also work with stakeholders (Table 7) and elected representatives to pass legislation that funds water quality improvements. This can be done at both the local and national levels. Bond issues are another local and state method to fund improvements.

4.0 References

Los Angeles County Department of Public Works, Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, July 31, 2000

Los Angeles County Department of Public Works, Los Angeles County 1999-2000 Stormwater Monitoring Report, July 11, 2000

Los Angeles County Department of Public Works, NPDES Permit No. Ca 006165, Task 5.2, Report of Waste Discharge (ROWD), Volume 8 of 8

California Department of Fish and Game, California Natural Diversity Database, Wildlife & habitat Data Analysis Branch, Data Date 11/6/00

Woodward-Clyde and Psomas and Associates, Evaluation of Land Use Monitoring Stations, 1996

Michelle Miller, A Watershed Management Plan: Steps to Protect Your Water Supply, http://www.epa.gov/OWOW/watershed/Proceed/miller.html

Regional Board, Watershed Management Initiative Chapter, Executive Summary, January 2000

Significant Ecological Areas in the Santa Clarita Valley, http://www.scope.org/scope/sea/index.html

5.0 Appendix

Table 5. Comparison of Annual Mean and Median Concentrations to Objectives

Constituent	DL	Units	Guidelines and Standards					Malibu Creek						
			Ocean Plan[g]	Basin Plan[g]	AB 411	California Toxics Rule (freshwater)[d]	California Toxics Rule (saltwater)[d]	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	Total
Total Rainfall (in.)								35.41	17.9	9.22	37.51	8.48	17.24	
Cyanide	0.01	mg/l	0.004[a]	0.2		0.0052	0.001	-	-	-	X	-	-	1
Total Coliform	20	MPN/100ml	1000[b]	70	10,000 (Instantaneous)			X	X	X	X	X	X	6
Fecal Coliform	20	MPN/100ml	200[b]	200	400 (Instantaneous)			X	X	X	X	X	X	6
Fecal Enterococcus	20	MPN/100ml	24[b]		104			X	X	-	-	X	X	4
Total Dissolved Solids	2.0	mg/l		250				-	-	-	X	X	X	3
Turbidity	0.1	NTU	75[b]					-	-	-	X	X	X	3
Total Aluminum	100	mg/l		1000				-	-	-	X			1
Dissolved Copper	5	mg/l				9	3.1	-	-	-	X	-	X	2
Total Copper	5	mg/l	12[e]					-	-	-	X			1
Total Lead	5	mg/l	8[e]					-	-	-	X	-	-	1
Dissolved Nickel	5	mg/l				52	8.2	-	-	-	X			1
Nickel	5	mg/l	20[e]	100				-	-	-	X			1
Total Zinc	50	mg/l	80[e]					-	-	-	X	-	-	1
Bis(2-ethythexyl)phthalate	1	mg/l	3.5[b]					-	-	-	X	X	X	3
Total								3	3	2	13	6	10	37

X = Greater than objective. Except for indicator bacteria, there are no numerical water quality standards that apply to stormwater or "non-point source" pollution. Current federal and state numerical standards apply only to "point source pollution," such as sanitary sewage, industrial and commercial discharges to the ocean, and other waterbodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff, and any exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, a direct comparison of the sampling results with the Ocean Plan standards cannot be made since the results presented in the table are detected values before dilution, a factor allowed by the Ocean Plan

^ = Rain gage not active

- = Statistically invalid data, not enough samples or data above detection limit collected

NS = Not Sampled

Blank = No Exceedance

DL = Detection Limit

a) Criteria based on daily maximum

b) Criteria based on 30-day average

c) Criteria for the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, 1,12-benzoperylene, benzo(a)pyrene, chrysene, dibenzo(an)anthracene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene.

d) Criteria continuous concentration which equals the highest concentration of pollutant to which aquatic life can be exposed for an extended period time (4 days) without deleterious effects.

e) Criterion expressed in the total recoverable form.

f) Criteria maximum concentration which equals the highest concentration of pollutant to which aquatic life can be exposed for a short period time without deleterious effects

g) Except for indicator bacteria, there are no numerical water quality standards that apply to stormwater or "non-point source" pollution. Current federal and state numerical standards apply only to "point source pollution," such as sanitary sewage, industrial and commercial discharges to the ocean, and other waterbodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff, and any exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, a direct comparison of the sampling results with the Ocean Plan standards cannot be made since the results presented in the table are detected values before dilution, a factor allowed by the Ocean Plan

h) Detection limits have changed throughout the monitoring process. Only data matching the current detection limit is displayed in this table. The Data Includes Since field indicates the first year of the storm season with the current detection limit

Table 6. Summary of Statistical Analysis Results of Water Quality Data

			Malibu Creek																													
			1994-95						1995-96						1996-97						1997-98						1998-99					
Constituent	DL	Units	No. of Samples	No. of Non-detects	Percent Detects	Mean	Median	CV	No. of Samples	No. of Non-detects	Percent Detects	Mean	Median	CV	No. of Samples	No. of Non-detects	Percent Detects	Mean	Median	CV	No. of Samples	No. of Non-detects	Percent Detects	Mean	Median	CV	No. of Samples	No. of Non-detects	Percent Detects	Mean	Median	CV
Cyanide	0.01	mg/l	3	3	0	SID	SID	SID	8	8	0	SID	SID	SID	3	3	0	SID	SID	SID	6	6	26	0.008	0.008	0.667	12	12	0	SID	SID	SID
Total Coliform	20	MPN/100ml	3	0	100	218,333	240,000	0.22	8	0	100	406,600	170,000	1.65	3	0	100	200,733	300,000	0.68	8	0	100	2,164,250	170,000	2.68	12	1	92	474,875	28,000	3.01
Fecal Coliform	20	MPN/100ml	3	0	100	167,333	240,000	0.75	8	0	100	166,700	11,000	2.11	3	0	100	33,600	17,000	1.11	8	0	100	2,044,100	53,500	2.78	12	1	92	34,692	6,000	2.45
Fecal Enterococcus	20	MPN/100ml	3	0	100	80,000	80,000	0.77	6	0	100	14,200	16,000	0.89	1	0	100	SID	SID	SID	0	0	SID	SID	SID	SID	6	0	100	9,886	1,780	2.07
Total Dissolved Solids	2.0	mg/l	0	0	SID	SID	SID	SID	2	0	100	SID	SID	SID	0	0	SID	SID	SID	SID	7	0	100	672	688	0.30	10	0	100	1157	1160	0.20
Turbidity	0.1	NTU	0	0	SID	SID	SID	SID	2	0	100	SID	SID	SID	0	0	SID	SID	SID	SID	8	0	100	310	163	1.80	9	0	100	80	23	1.53
Total Aluminum	100	µg/l	0	0	SID	SID	SID	SID	0	0	SID	SID	SID	SID	0	0	SID	SID	SID	SID	9	0	100	6778	3660	1.66	10	1	90	292	144	0.98
Dissolved Copper	6	µg/l	1	1	0	SID	SID	SID	2	2	0	SID	SID	SID	0	0	SID	SID	SID	SID	9	4	56	9.1	8.0	0.68	10	9	10	SID	SID	SID
Total Copper	6	µg/l	1	0	100	SID	SID	SID	2	0	100	SID	SID	SID	0	0	SID	SID	SID	SID	9	0	100	37	20	1.46	10	0	100	8.4	7.8	0.34
Total Lead	5	µg/l	1	1	0	SID	SID	SID	2	2	0	SID	SID	SID	0	0	SID	SID	SID	SID	9	5	44	24	2.6	2.44	10	10	0	SID	SID	SID
Dissolved Nitrate	5	µg/l	1	1	0	SID	SID	SID	2	1	50	SID	SID	SID	0	0	SID	SID	SID	SID	9	5	44	11	2.6	1.46	10	8	20	3.4	2.5	0.88
Nickel	5	µg/l	1	0	100	SID	SID	SID	2	1	50	SID	SID	SID	0	0	SID	SID	SID	SID	9	3	67	20	17	1.44	10	5	50	5.4	4.0	0.85
Total Zinc	50	µg/l	1	1	0	SID	SID	SID	2	1	50	SID	SID	SID	0	0	SID	SID	SID	SID	9	2	78	114	75	0.83	10	9	10	SID	SID	SID
Bis(2-ethylhexyl)phthalate	1	µg/l	0	0	SID	SID	SID	SID	2	1	50	SID	SID	SID	0	0	SID	SID	SID	SID	8	1	88	22	12.9	1.04	9	5	44	28	0.6	2.17

			1999-2000					
Constituent	DL	Units	No. of Samples	No. of Non-detects	Percent Detects	Mean	Median	CV
Cyanide	0.01	mg/l	9	9	0	SID	SID	SID
Total Coliform	20	MPN/100ml	9	0	100	100,889	80,000	1.10
Fecal Coliform	20	MPN/100ml	9	0	100	40,667	8,000	1.66
Fecal Enterococcus	20	MPN/100ml	8	0	100	137,286	6,000	2.16
Total Dissolved Solids	2.0	mg/l	9	0	100	874	882	0.39
Turbidity	0.1	NTU	9	0	100	188	74	1.37
Total Aluminum	100	µg/l	10	3	70	188	180	0.64
Dissolved Copper	6	µg/l	10	8	20	8.4	2.5	0.89
Total Copper	6	µg/l	10	1	90	7.1	7.0	0.35
Total Lead	5	µg/l	10	10	0	SID	SID	SID
Dissolved Nitrate	5	µg/l	10	8	20	3.3	2.5	0.84
Nickel	5	µg/l	10	5	50	5.0	3.9	1.63
Total Zinc	50	µg/l	10	10	0	SID	SID	SID
Bis(2-ethylhexyl)phthalate	1	µg/l	8	3	63	4.8	2.3	1.26

CV = Coefficient of variation
DL = Detection Limit
SID = Statistically Invalid Data, not enough data above detection limit collected
See Table 1 for water quality objectives

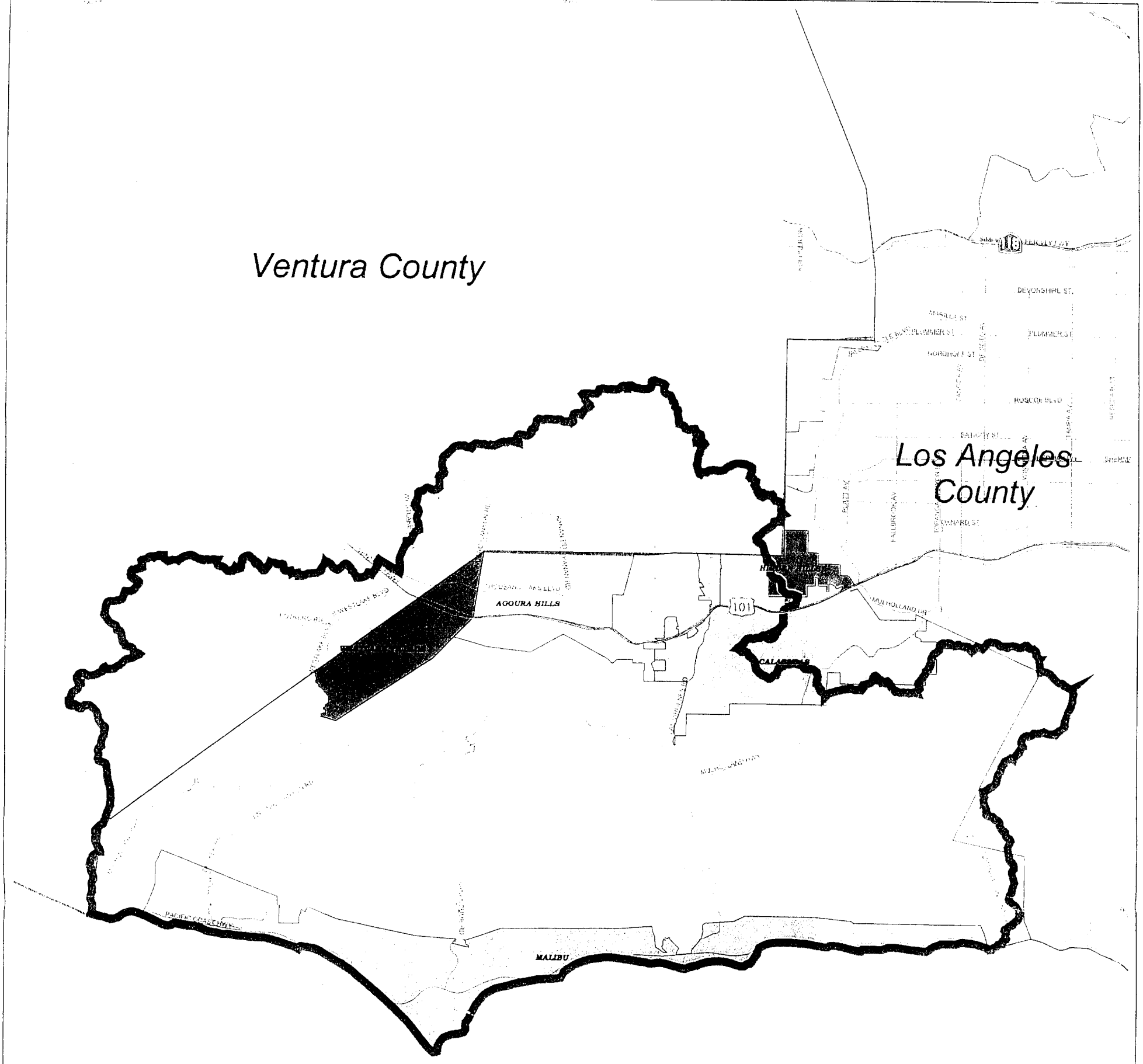
R0000199

TABLE 7. WATERSHED MANAGEMENT
STAKEHOLDER LIST

Stakeholders	Jurisdiction	WATERSHED INTERESTS						
		ANT	BAL	DOM	LAR	MAL	SC	SGR
Agoura Hills	Chamber of Commerce					X		
Calabasas	Chamber of Commerce					X		
Malibu	Chamber of Commerce					X		
Westlake Village	Chamber of Commerce					X		
Agoura Hills	City					X		
Calabasas	City					X		
Malibu	City					X		
West Lake Village	City					X		
Southern California Edison	Commercial		X	X	X	X		X
American Land Conservancy	Conservancy		X	X		X		
California Coastal Conservancy	Conservancy		X	X		X		
Foothills Wildlife Conservancy	Conservancy		X	X		X		
Mountains Recreation and Conservation Authority	Conservancy		X	X		X		
Santa Monica Mountains Conservancy	Conservancy		X	X		X		
State of California Coastal Conservancy	Conservancy		X	X		X		
Gateway Cities	Council of Government		X	X	X	X		X
County of Los Angeles Department of Parks and Recreation	County	X	X	X	X	X	X	X
County of Los Angeles Department of Public Works	County	X	X	X	X	X	X	X
County of Los Angeles Department of Regional Planning	County	X	X	X	X	X	X	X
County of Los Angeles Department of Water and Power	County	X	X	X	X	X	X	X
County of Los Angeles Fire Department	County	X	X	X	X	X	X	X
County of Los Angeles Open Space District	County	X	X	X	X	X	X	
County of Los Angeles Sanitation Districts	County	X	X	X	X	X	X	X
Metropolitan Transportation Authority	County	X	X	X	X	X	X	X
Supervisor Zev Yaroslavsky, District 3	County Supervisor		X		X	X		
California Exotic Pest	Environmental		X	X		X		X
California Native Plant Society	Environmental	X	X	X	X	X	X	X
Ecostation	Environmental					X		
Enviroment Now	Environmental		X	X		X		
Equestrian Trails Incorporated	Environmental		X	X		X		X
Heal the Bay	Environmental		X	X	X	X		X
LA Bicycle Advisory Comm	Environmental		X	X	X	X		X
LA City Bicycle Coalition	Environmental		X	X	X	X		X
LA County Bicycle Coalition	Environmental		X	X	X	X		X
LA Wheelmen Club	Environmental		X	X		X		
North East Trees	Environmental	X	X	X	X	X	X	X
Plant Council (look up)	Environmental		X	X		X		X
Preservation Authority (look up)	Environmental		X	X		X		X
Sierra Club- LA Chapter	Environmental		X	X	X	X		X
Surfrider Foundation	Environmental		X	X	X	X		X
TreePeople	Environmental	X	X	X	X	X	X	X
Environmental Protection Agency	Federal	X	X	X	X	X	X	X
National Environmental Policy Act	Federal		X	X	X	X		X
National Marine & Fisheries Service	Federal	X	X	X	X	X	X	X
National Parks Service	Federal	X	X	X	X	X	X	X
National Resource Conservation	Federal	X	X	X	X	X	X	X
United States Army Corp of Engineers	Federal	X	X	X	X	X	X	X
United States Department of the Interior National Park Service	Federal	X	X	X	X	X	X	X
United States Fish and Wildlife Service	Federal	X	X	X	X	X	X	X
United States Forest Service - Angeles National Forest	Federal	X	X	X	X	X	X	X
Water Quality Authority Board	Federal		X	X		X		X
Air Quality Management District	Local		X	X	X	X		X
City Police	Local		X	X	X	X		X
Police Departments	Local		X	X		X		X
Sheriffs Departments	Local		X	X		X		X
American Institute of Architects	Organization		X	X	X	X		X
Los Angeles County Coalition	Organization		X	X		X		
Mountains Restoration Trust	Organization		X	X		X		
National Audubon Society	Organization		X	X	X	X		X
National Resources Defense Council	Organization		X	X		X		
Santa Monica Bay Restoration Project	Organization		X	X		X		
Santa Monica Baykeeper	Organization		X	X		X		
Southeast Water Coalition	Organization		X	X		X		
Trust for Public Land	Organization		X	X	X	X		X
California Conservation Corp	State Departments		X	X	X	X		X
California Department of Fish and Game	State Departments	X	X	X	X	X	X	X
California Department of Parks and Recreation	State Departments	X	X	X	X	X	X	X
California Department of Toxic Substance Control	State Departments		X	X		X		
California Department of Transportation	State Departments	X	X	X	X	X	X	X
California Department of Water Resources	State Departments	X	X	X	X	X	X	X
California Environmental Protection Agency	State Departments	X	X	X	X	X	X	X
California Environmental Quality Act	State Departments	X	X	X	X	X	X	X
Southern California Association of Governments	State Departments	X	X	X	X	X	X	X
State Department of Parks & Recreation	State Departments	X	X	X	X	X	X	X
State Department of Water Resources	State Departments	X	X	X	X	X	X	X
State Soils Conservation	State Departments	X	X	X	X	X	X	X
SWRCB-Regional Water Quality Control Board, LA Region	State Departments	X	X	X	X	X	X	X
California-American Water Company	Water Purveyor		X	X		X		X
Central & West Basin MWD	Water Purveyor		X	X		X		X
Metropolitan Water Districts	Water Purveyor		X	X	X	X		X
United Water Conservation District	Water Purveyor		X	X		X	X	X
Water Replenishment District	Water Purveyor		X	X		X		X

ANT: Antelop Valley
BAL: Ballona Creek
DOM: Dominguez Channel/L.A. Harbor
LAR: Los Angeles River
MAL: Malibu Creek
SC: Santa Clara River
SGR: San Gabriel River

R0000200



Legend

- Malibu Creek WMA
- Freeway System
- Primary Streets

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

Malibu Creek Watershed Management Area Plan

Figure 1. Watershed Boundary

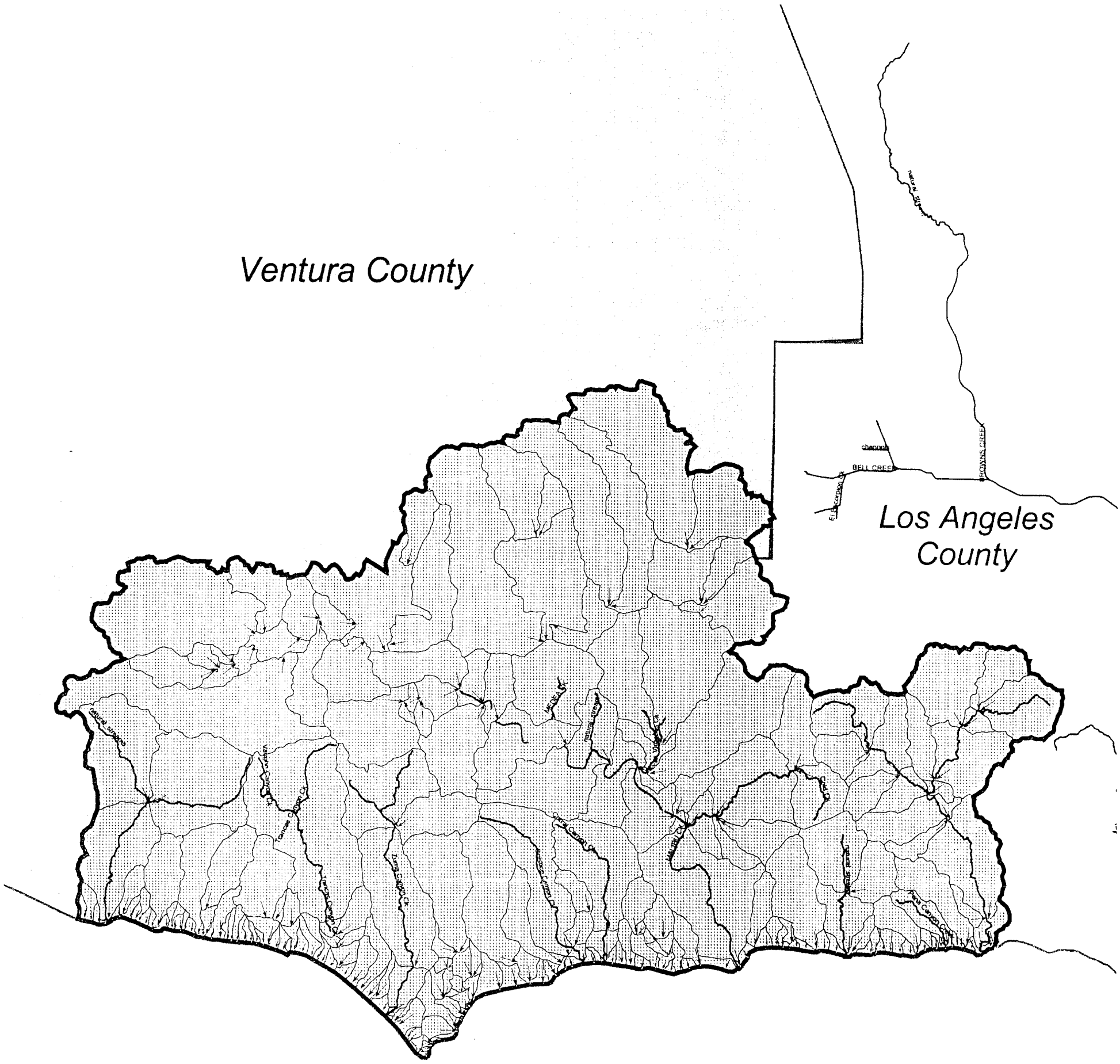
N W E S

1 0 1 2 3 Miles

R0000201

P:\eppub\water\gis\projects\wmaps\MalibuWMA.apr

January 17, 2001



LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

R0000202

Malibu Creek Watershed Management Area Plan

Figure 2. Sub-Basins and Flow Directions

N W E S

1 0 1 2 3 Miles

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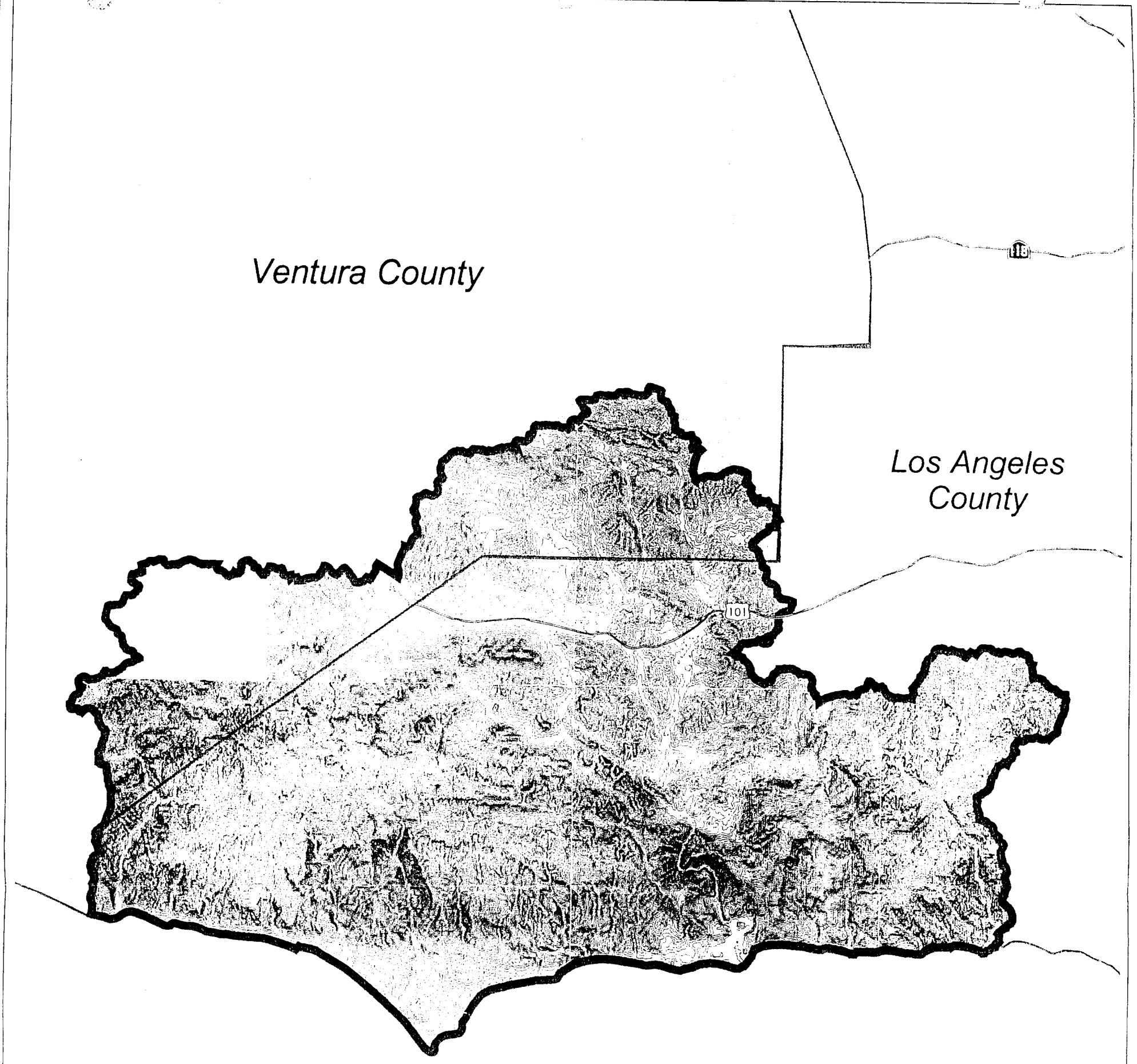
January 17, 2001



Legend

- L.A. County Boundary
- Malibu Creek WMA
- Freeway System
- Contour Lines

Malibu Creek Watershed Management Area Plan

Figure 3. Contours

R0000203

N
W E
S

1 0 1 2 3 Miles

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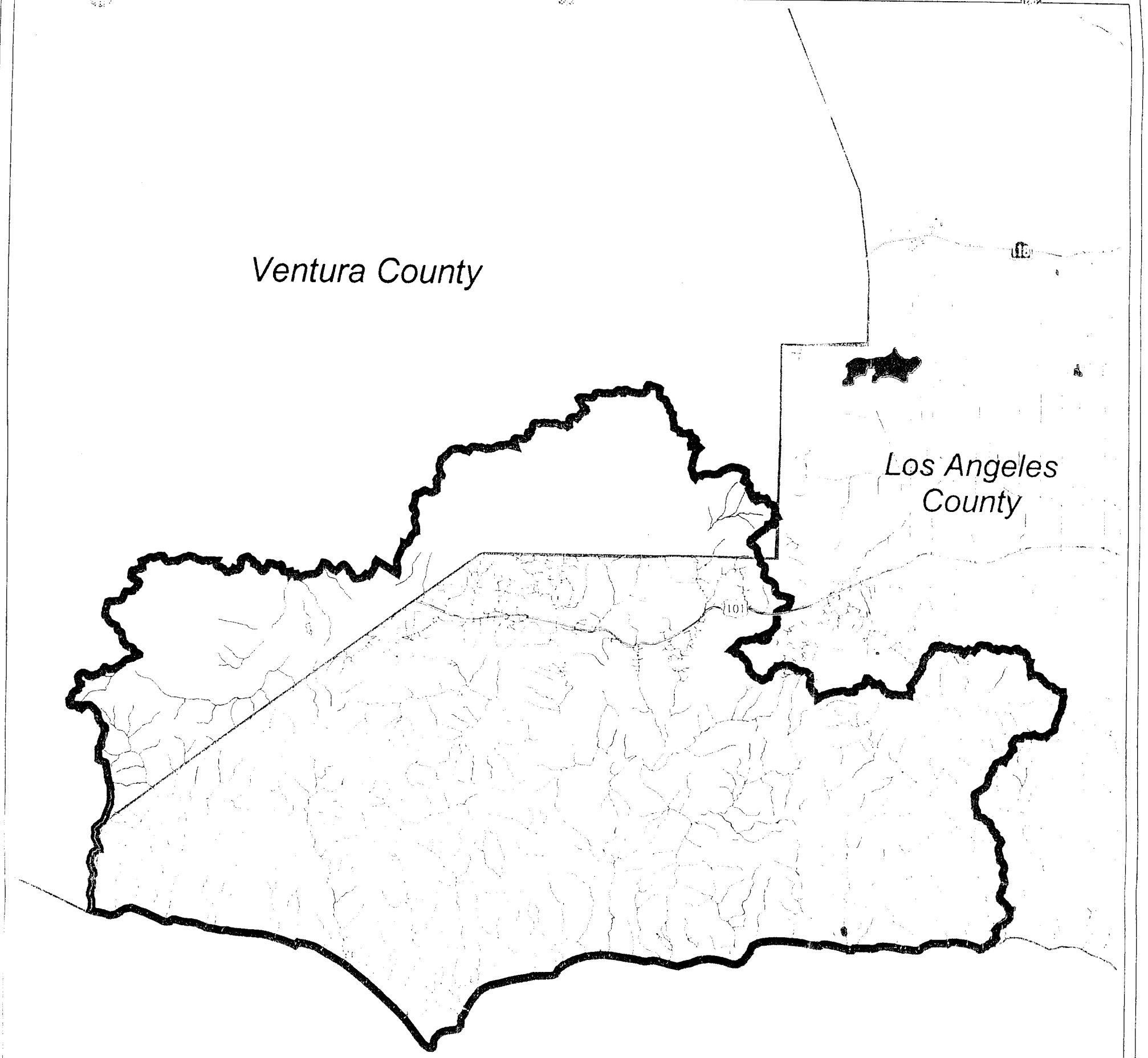
January 20, 2001



Legend

- L.A. County Boundary
- Malibu Creek WMA
- Freeway System
- L.A. County Flood Control Drains
- Reservoirs, Debris, and Retention Basins
- Spreading Grounds

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

Malibu Creek Watershed Management Area Plan

Figure 4. Drainage Facilities

R0000204

N W E S

1 0 1 2 3 Miles

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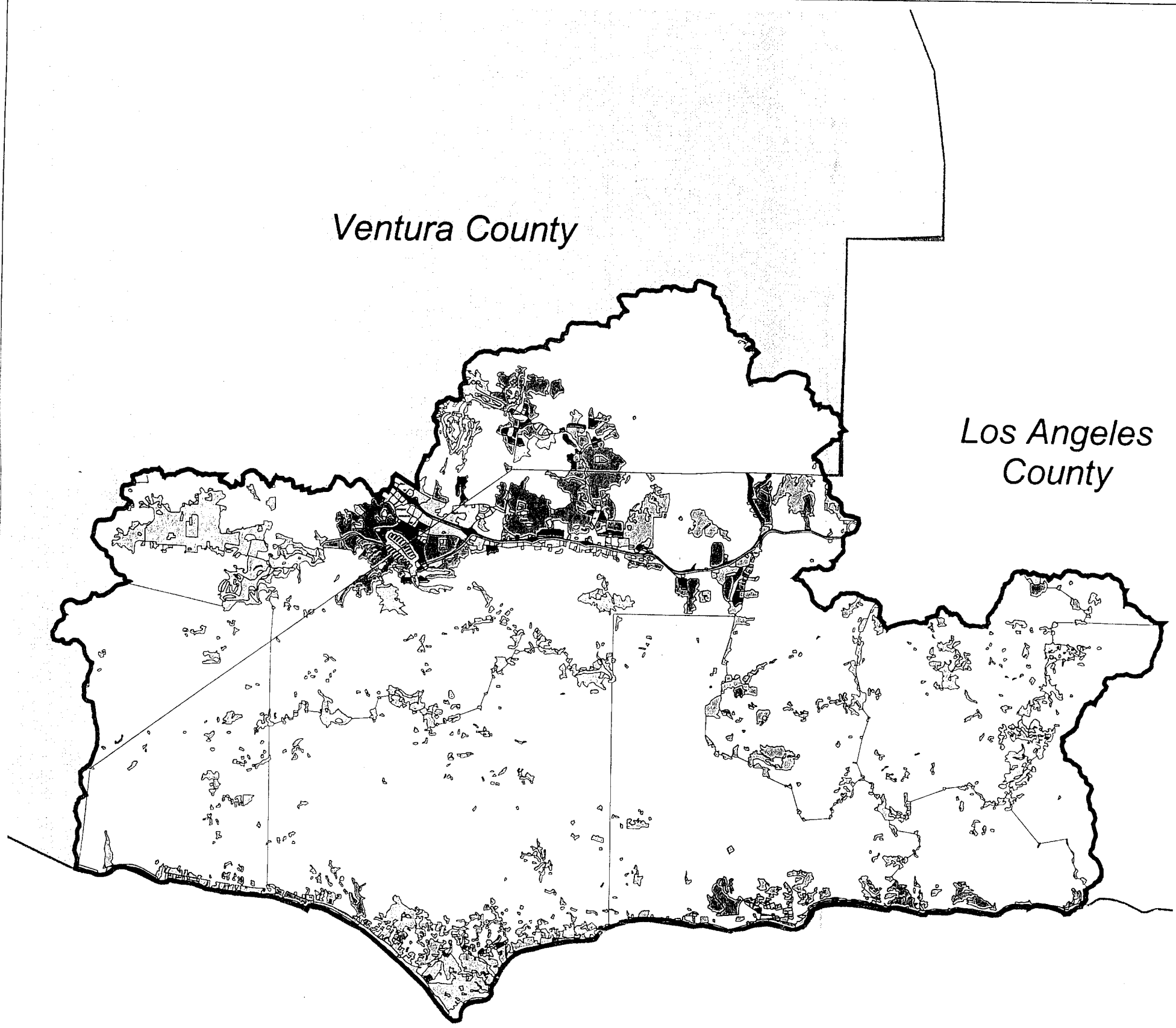
January 18, 2001



Legend

- L.A. County Boundary
- Malibu Creek WMA

Landuse

- HDSFR (2.80%)
- Light Industrial (0.12%)
- Vacant (85.38%)
- Retail/Commercial (0.21%)
- Multiple Family Residential (0.51%)
- Transportation (2.53%)
- Education (0.27%)
- All Other (8.18%)

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

Malibu Creek Watershed Management Area Plan

Figure 5. Land Use

N W E S

1 0 1 2 3 Miles

R0000205

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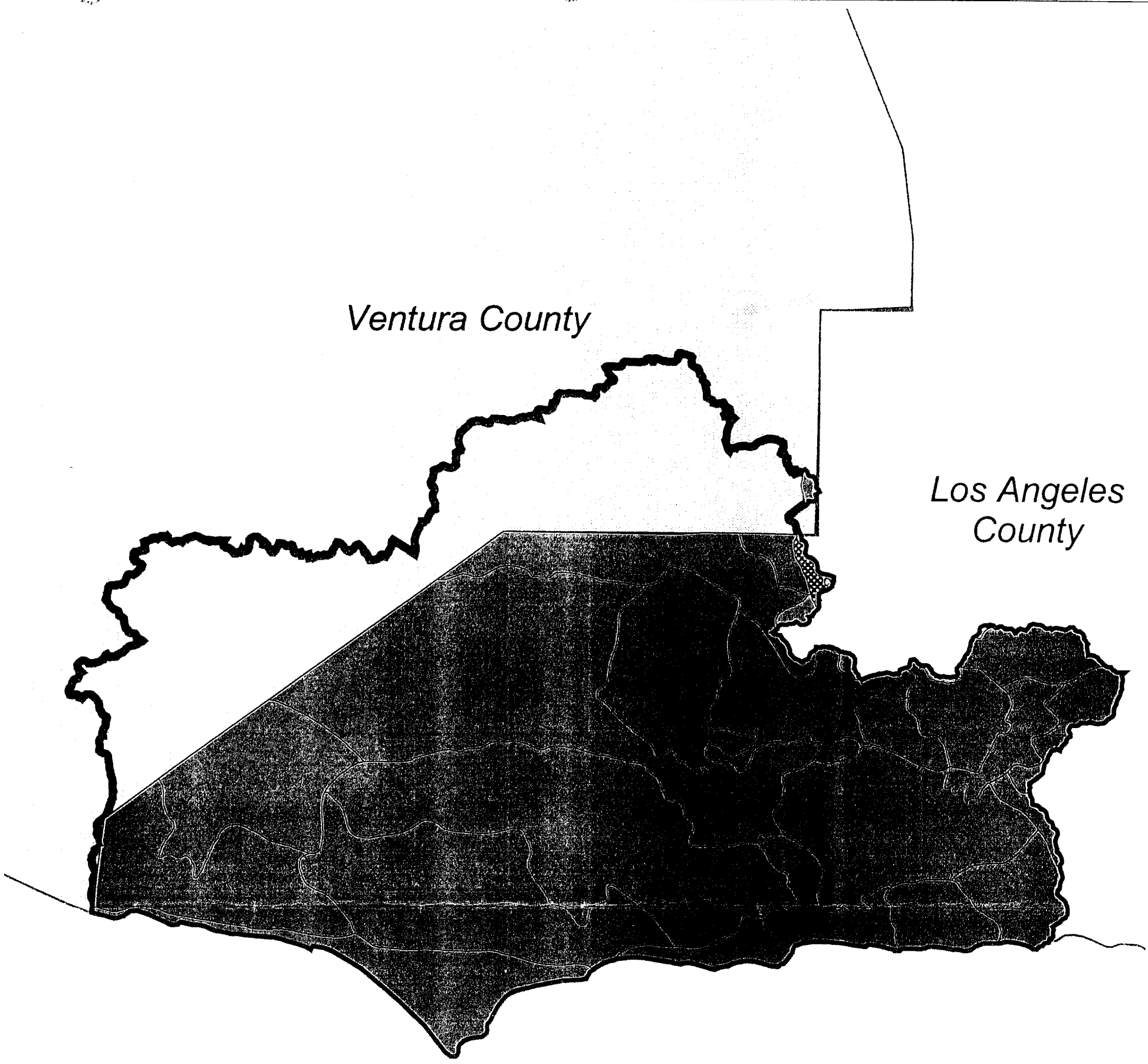
December 13, 2000



Legend

- L.A. County Boundary
- Malibu Creek WMA

Soil Types

- ALTAMONT CLAY LOAM
- DIABLO CLAY LOAM
- SANTA MONICA MOUNTAINS
- UPPER LOS ANGELES RIVER

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

Malibu Creek Watershed Management Area Plan

Figure 6. Soil

R0000206

N W E S

1 0 1 2 3 Miles

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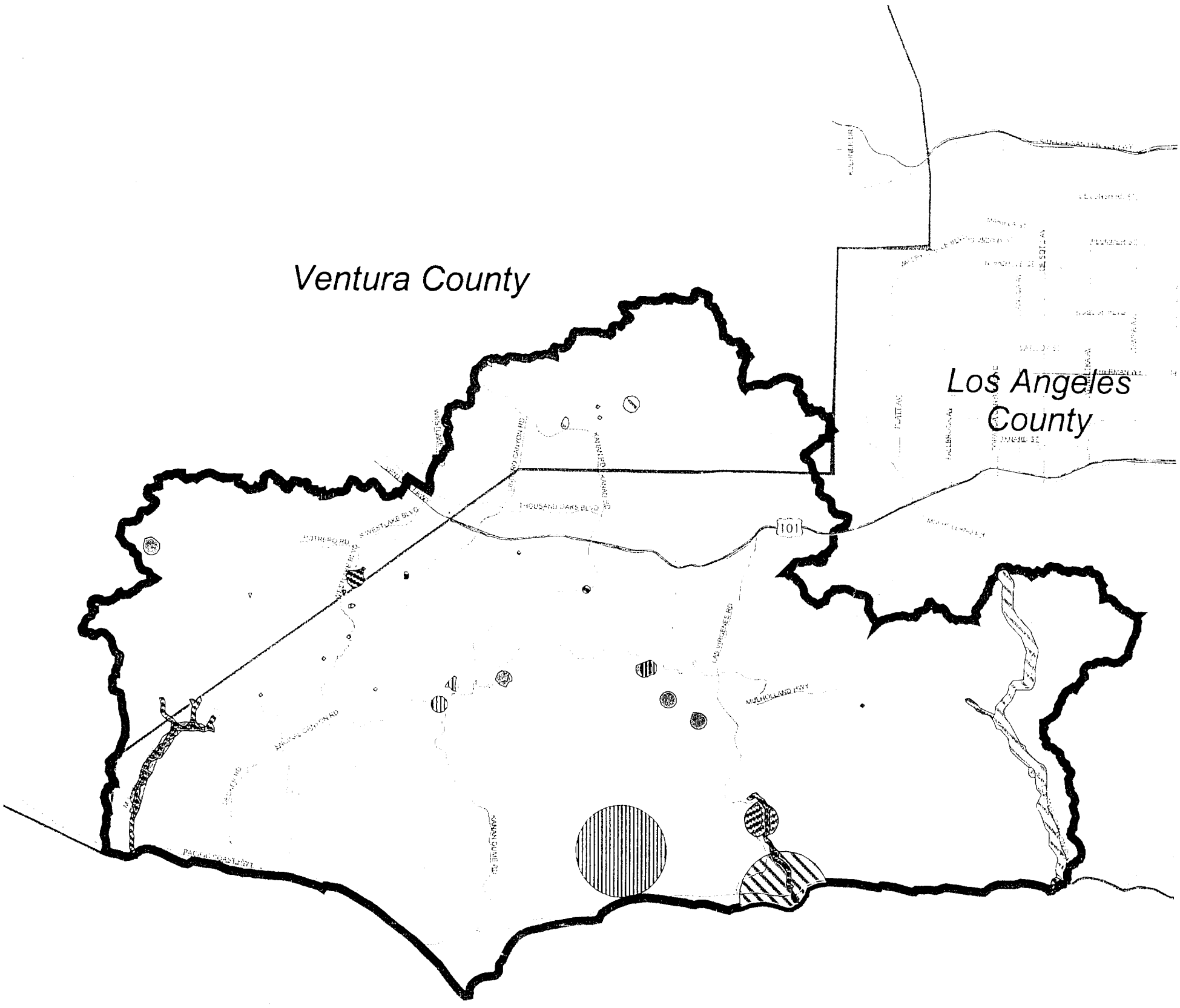
January 18, 2001



Legend

- Freeway System
- Primary Streets

Threatened and Endangered Species

- BRAUNTON'S MILK-VETCH
- LYON'S PENTACHAETA
- MARCESCENT DUDLEYA
- SANTA MONICA MOUNTAINS DUDLEYA
- SANTA MONICA MTNS. DUDLEYA
- SOUTHERN STEELHEAD - SOUTHERN CALIFORNIA ESU
- TIDEWATER GOBY

Data Source: California Natural Diversify Database
Wildlife and Habitat Data Analysis
Branch, Department of Fish and
Game, November 2000

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

Malibu Creek Watershed Management Area Plan

Figure 7a. Federally Listed As Threatened and Endangered Species Locations

R0000207

N W E S

1 0 1 2 3 Miles

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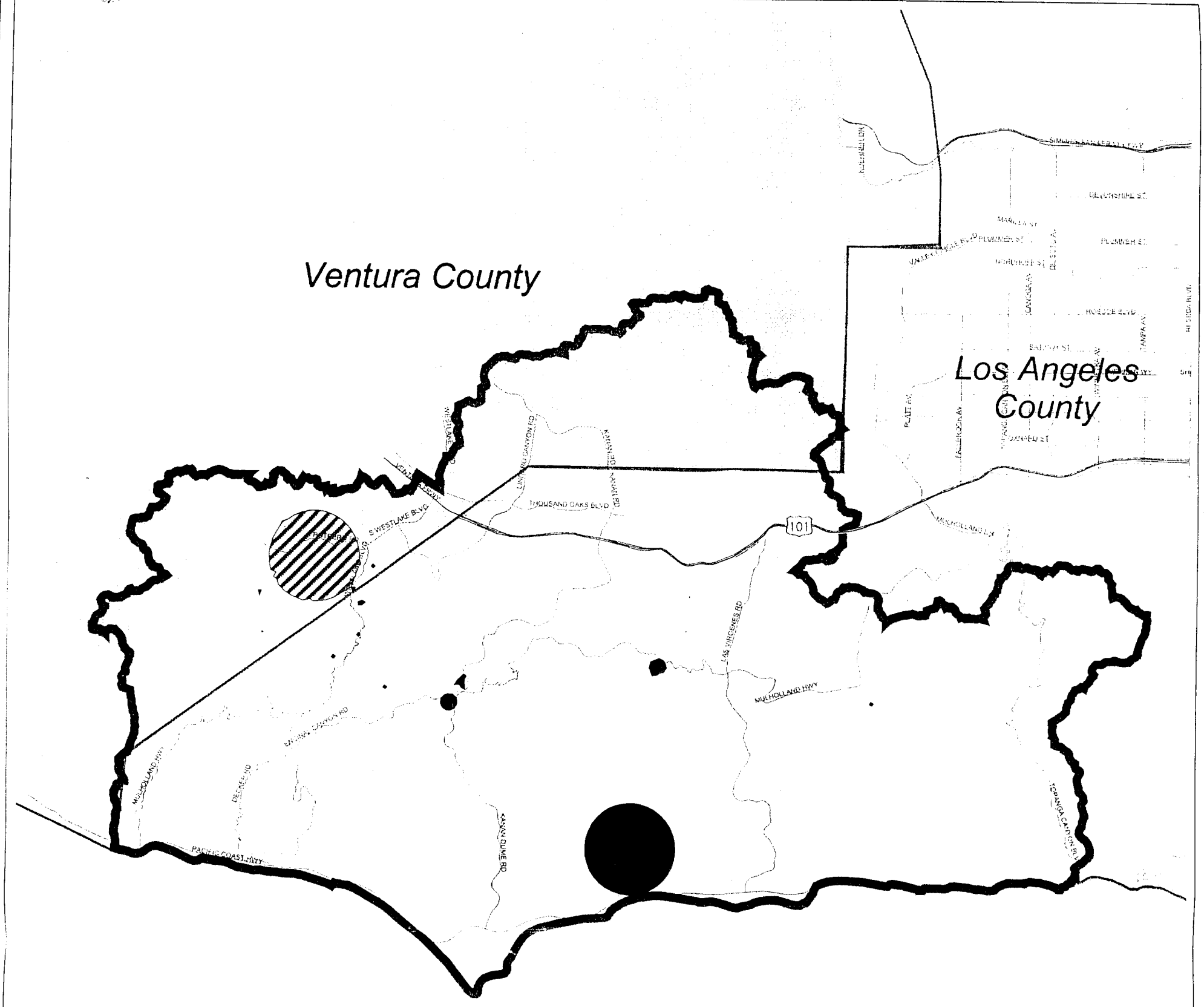
December 12, 2000



Data Source: *California Natural Diversify Database*
Wildlife and Habitat Data Analysis Branch, Department of Fish and Game, November 2000

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

Malibu Creek Watershed Management Area Plan

Figure 7b. State Listed As Threatened and Endangered Species Locations

R0000208

N W E S

1 0 1 2 3 Miles

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December 12, 2000

SAN GABRIEL RIVER
WATERSHED MANAGEMENT AREA PLAN

FEBRUARY 01, 2001

LOS ANGELES REGION

WASTE DISCHARGE REQUIREMENTS
FOR
MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES
WITHIN THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

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1.0 Watershed Management Area Plan Overview

In compliance with the 1996 municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit (Order No. 96-054), Los Angeles County (Principal Permittee) is required to develop a Watershed Management Area Plan (WMAP) for each Watershed Management Area (WMA) in coordination with the cities (Permittees) in each WMA. The WMAP consists of the following: a description of each watershed's characteristics; the Stormwater Quality Management Plan (SQMP), formally known as the five Model Programs (see Appendix); quality of stormwater runoff analyses; identified projects to improve quality of stormwater and urban runoff; and available funding resources.

2.0 Watershed Characteristics

2.1 Watershed Area

The San Gabriel River Watershed is located in the eastern portion of Los Angeles County (Figure 1). It is bound by the San Gabriel Mountains to the north, most of the San Bernardino/Orange County to the east, the division of the Los Angeles River from the San Gabriel River to the west, and the Pacific Ocean to the south. The watershed is composed of approximately 640 square miles of land with 26% of its total area developed. The watershed drains into the San Gabriel River from the San Gabriel Mountains to the Pacific Ocean. The major tributaries to the San Gabriel River include Walnut Creek, San Jose Creek, Coyote Creek, and numerous storm drains (Figure 4).

In accordance with the 1996 NPDES Permit, the County of Los Angeles is divided into six WMAs. The Permittees within the San Gabriel WMA, as listed in the Permit, are as follows:

Artesia
Azusa
Baldwin Park
Bellflower
Bradbury
Cerritos
Claremont
Covina
Diamond Bar
Downey
Duarte
Glendora
Hawaiian Gardens
Industry
Irwindale

La Habra Heights
La Mirada
La Puente
La Verne
Lakewood
Long Beach*
Los Angeles County
Monrovia
Norwalk
Pomona
Pico Rivera
San Dimas
Santa Fe Springs
South El Monte
Walnut
West Covina
Whittier

*Note: As of June 30, 1999, the City of Long Beach has its own NPDES permit for municipal storm water and urban runoff discharges.

There are other Permittees that may drain to this watershed, but are not formally listed as Permittees in this WMA.

2.2 Natural Characteristics

2.2.1 Topography

The watershed has a varied terrain consisting of mountains, low-lying foothills, valleys and coastal plain. The northerly portion of the watershed has the highest elevation in the San Gabriel Mountains. Figure 3 shows the watershed's contour lines at 50-foot increments.

2.2.2 Climate

The watershed consists of the San Gabriel Mountains, the San Gabriel Valley, and coastal plain. For the mountains, valley, and coastal, the normal seasonal rainfall 27.50 inches,17.64 inches, and 13.71 inches respectively.

The entire watershed's mean annual precipitation is approximately 19.62 inches. It is common for mean annual precipitation to vary from year-to-year, even though the winter fronts that cause the rainfall events typically occur annually. These winter fronts typically occur during the wet season (October 15 to April 15). The remainder of the year from April 16 to October 14, the dry season, has significantly

lower precipitation.

2.2.3 Hydrology

A comprehensive network of flood control and water conservation facilities exist in the watershed to sustain the ever-increasing development in the region. The runoff that reaches the San Gabriel River may be diverted into spreading grounds located along the river or allowed to empty into the Pacific Ocean in Seal Beach. The Rio Hondo/San Gabriel spreading grounds are located south of Whittier Narrows and have highly permeable soils. This soil characteristic enables any flow diverted into the spreading grounds to recharge the groundwater aquifer.

2.2.4 Flow Characteristics

2.2.4.1 Flow Direction

The watershed's runoff flows in a generally southwesterly direction overland or in the flood control channels and if it is not intercepted, eventually discharges into the Pacific Ocean (Figure 3).

2.2.4.2 Sub-Basins

The sub-basins in Figure 3 show hydrological areas and where they drain. These sub-basins were delineated based on the contour lines shown in Figure 2.

2.2.5 Land Use

As shown in Table 1, most of the land in the watershed is "vacant", or undeveloped. Developed land use in the watershed consists primarily of high-density single-family residential, industrial, and retail/commercial (Figure 5).

Table 1. Land Use Distribution

Land Use Category	**Percent by Area**
Vacant	47.69
Transportation	1.66
High-Density Single-Family Residential (HDSFR)	23.96
Light Industrial	4.07

Multiple-Family Residential	3.02
Retail/Commercial	2.92
Education	2.63
Mixed Residential	0.25
All Other	13.8

The Los Angeles County land use monitoring program under the 1996 NPDES permit is a result of a site selection study entitled *Evaluation of Land Use Monitoring Stations* (Woodward-Clyde and Psomas and Associates, 1996). This study identified the most significant land use categories within the permit area regarding stormwater quality. The selection study yielded eight land use monitoring stations. These eight land use monitoring stations represent over 86% of all the land uses within the permit area. These stations monitor flow and have automated samplers to collect flow-weighted composite stormwater samples during storm events. The 34 categories shown in Table 2 cover 100% of the land uses in the County.

Figure 5 depicts the eight land use categories currently monitored with their respective percent by area within the watershed. The remaining land use categories are summarized as "All Other" in Table 1.

Table 2. Land Use Categories

Land Use Category	**Inclusive SCAG Land Use Codes** [1]
High Density Single Family Residential [2]	1111
Light Industrial [2]	1311 through 1315, 1340
Vacant [2]	3100, 3200, 3300, 3400
Retail/Commercial [2]	1221 through 1224
Multiple Family Residential [2]	1121 through 1125
Transportation [2]	1411 through 1416, 1418
Education [2]	1261 through 1266
Low Density Single Family Residential	1112
Mixed Residential [2]	1140
General Office	1211 through 1213

Natural Resources Extraction	1331, 1332
Institutional	1241 through 1247, 1251 through 1253
Heavy Industrial	1321 through 1325
Other Commercial	1231 through 1234
Open Space/Recreation	1820, 1830, 1840, 1850, 1860, 1870, 1880
Utility Facilities	1431, 1432, 1433, 1435, 1436, 1438
Mobile Homes and Trailer Parks	1131, 1132
Mixed Transportation and Utility	1450, 1460
Floodways and Structures	1434, 1437
Rural Residential	1151, 1152, 1439
Under Construction	1700
Golf Courses	1810
Nurseries and Vineyards	2200, 2300
Maintenance Yards	1440
Urban Vacant	1900
Military Installations	1271 through 1273
Agriculture	2100, 2110, 2120, 2600
Harbor Facilities	1417, 4401
Animal Husbandry	2400, 2500, 2700
Mixed Commercial and Industrial	1500
Communication Facilities	1420, 1421
Mixed Urban	1600
Marina Facilities	4300
Receiving Waters	4100, 4200, 4400, 4500

(1) Based on Anderson Land Use Level III/IV Classification.
(2) Land use monitored

2.2.6 Geology/Soil

The San Gabriel Mountains constitute the north portion of the watershed. The mountainous terrain consists of Upper San Gabriel River soil. The mountain's alluvial fans primarily consist of Hanford

Gravelly Sandy Loam and Tujunga Fine Sandy Loam. Additional types of soil classification in the watershed are the following: Altamont Clay Loam, Chino Silt Loam, Diablo Clay Loam, Hanford Silt Loam, Montezuma Clay Adobe, Oakley Fine Sand, Placentia Loam, Ramona Clay Loam, Ramona Loam, Ramona Sandy Loam, Yolo Clay Loam, Yolo Fine Sandy Loam, Yolo Gravelly Sandy Loam, Yolo Loam, and Yolo Sandy Loam (Figure 6).

2.2.7 Significant Ecological Areas

Significant Ecological Areas (SEAs) are defined and delineated in conjunction with the Land Use and Open Space Elements of the Los Angeles County General Plan.

An area qualifies for recognition as a SEA if it possesses one or more of the following features or classes:

i. Is the habitat of rare, endangered, or threatened plant or animal species.
ii Represents biotic communities, vegetative associations, or habitat of plant or animal species that are either one-of-a-kind, or are restricted in distribution on a regional basis.
iii Represents biotic communities, vegetative associations, or habitat of plant or animal species that are either one-of-a-kind, or are restricted in distribution in Los Angeles County.
iv Is habitat that at some point in the life cycle of a species or group of species, serves as a concentrated breeding, feeding, resting, or migrating grounds, and is limited in availability
v. Represents biotic resources that are of scientific interest because they are either extreme in physical/geographical limitations, or they represent an unusual variation in a population or community.
vi. Is an area important as game species habitat or as fisheries.
vii. Is an area that would provide for the preservaion of relatively undisturbed examples of the natural biotic communities in Los Angeles County.
viii. Is a special area, worthy of inclusion, but one which does not fit any of the other seven criteria.

Los Angeles County Department of Regional Planning (Regional Planning) is in the process of updating the SEAs coverage. The final SEAs information will be included in this plan after Regional Planning has finalized the SEAs coverage.

2.2.8 Threatened and Endangered Species

The watershed supports a variety of threatened and endangered species according to the California Department of Fish and Game's November 2000 California Natural Diversity Database (CNDDB). The CNDDB provides both the state and federally listed threatened and endangered species of plants and animals (Figure 7a and 7b respectively).

The watershed hosts the following threatened and endangered plants and animals:

- Nevin's Barberry,
- Salt Marsh Bird's-Beak,
- Santa Ana Sucker,
- Slender-Horned Spineflower, and
- Thread-Leaved Brodiaea.

The Santa Ana Sucker is primarily located around the San Gabriel River's North Fork, East Fork and West Fork. The Slender-Horned Spineflower is located around San Gabriel River's West Fork. A large population of Salt Marsh Bird's-Beak may be found in the quadrant bordered by 195th Street and Orange Avenue with Norwalk Boulevard and Walker Street. Small pockets of Thread-Leaved Brodiaea may be found in the foothills of the Los Angeles National Forest.

The five birds that constitute the Threatened and Endangered Species Animal list may be found scattered across the watershed typically near open spaces or waterways. Coastal California Gnatcatcher primarily occupies the Forrest Lawn Memorial Park in Covina Hills. The second largest bird population, the Least Bell's Vireo, is predominant near the San Gabriel River and Big Dalton River. The California Least Tern may be found near Marine Stadium and the San Gabriel River in Long Beach. The Belding's Savannah Sparrow may be found near the Los Cerritos Channel. The Western Yellow-Billed Cuckoo is located near the San Gabriel River.

2.3 Quality of Stormwater Runoff

2.3.1 Monitoring Activities

To characterize the quality of stormwater runoff in Los Angeles County, sampling of large area mass emissions sites has been performed under the 1990 and 1996 municipal stormwater NPDES permits.

2.3.1.1 Monitoring Station Location

Los Angeles County Department of Public Works (LACDPW) has been monitoring four major drainage areas near their outfalls to the ocean. The following mass emission monitoring stations installed under the original 1990 Permit were retained under the 1996 Permit: the Los Angeles River Monitoring Station, the San Gabriel River Monitoring Station, the Ballona Creek Monitoring Station, and the Malibu Creek Monitoring Station. The Coyote Creek Monitoring Station, which was required under the 1990 Permit but not under the 1996 Permit, was also monitored during the 1997-98, 1998-99, and 1999-2000 seasons. This station was retained in the program to provide data for the calculation of mass loading in the San Gabriel River Watershed. The five mass emission monitoring stations were used to collect water quality data from over 1,619 square miles and have produced the data used to calculate total loading to the ocean from the Los Angeles River, the San Gabriel River, the Ballona Creek, and the Malib Creek Watersheds.

The San Gabriel River Monitoring Station is located at a historic stream gage station (Stream Gage No. F263C-R), below San Gabriel River Parkway in Pico Rivera. At this location, the upstream tributary area is 450 square miles. The San Gabriel River, at the gauging station, is a grouted rock-concrete stabilizer along the western levee and a natural section on the eastern side. Flow measurement and water sampling are conducted in the grouted rock area along the western levee of the river. The length of the concrete stabilizer is nearly 70 feet. The San Gabriel River sampling location has been an active stream gauging station since 1968.

The Coyote Creek Monitoring Station is located at the existing Army Corps of Engineers stream gage station (Stream Gage No. F354-R) below Spring Street in the lower San Gabriel River Watershed. Although this site is not required for monitoring per the NPDES Permit, the site was added to assist in determining mass loading for the San Gabriel River Watershed. At this location, the upstream tributary area is 150 square miles (extending into Orange County). The sampling site was chosen to avoid backwater effects from the San Gabriel River. Coyote Creek, at the gauging station, is a concrete lined trapezoidal channel. The Coyote Creek sampling location has been an active stream

gauging station since 1963.

2.3.1.2 Stormwater Sample Collection Methods

Grab and composite sample collection methods, defined below, are used to collect samples.

- Grab Sample - a discrete, individual sample within a short period of time. This method is used to collect samples for constituents that have very short holding times and specific collection or preservation needs. For example, samples for coliforms are taken directly into a sterile container to avoid non-resident bacterial contamination.
- Composite Sample - a mixed or combined sample created by combining a series of discrete samples (aliquots) of specific volume. Composite sampling is ideally conducted over the duration of the storm event.

Grab samples are collected during the initial portion of the storm event and then taken to the laboratory.

Flow composite storm samples are obtained using an automated sampler to collect samples at flow-paced intervals. Samples collected at each station are combined in the laboratory to create a single flow-weighted sample for analysis.

It should be noted that only composite samples have been collected at the Coyote Creek Monitoring Station since the 1995-1996 storm season because the monitoring station was not required under the 1996 Permit.

2.3.2 Comparison of Mass Emissions Concentrations to the Ocean Plan, Basin Plan, and California Toxics Rule

It should be noted that, except for bacteria indicators, there are no numerical water quality standards that apply to stormwater or nonpoint source pollution. Current federal and state numerical standards apply only to point source pollution, such as sanitary sewage, industrial and point source discharges to the ocean and other water bodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff. An exceedence of values should not indicate violation nor noncompliance with the plans. Furthermore, the sampling results used to produce Tables 4 and 5 (see Appendix) are

detected values before dilution, a factor allowed by the Ocean Plan. Both the annual mean and median of the analyses of some 209 constituents sampled were compared to the water quality objectives outlined in the California Ocean Plan, the Los Angeles Basin Plan, and the California Toxics Rule. For stormwater bacteria indicators, the log mean of the Most Probable Number per 100 ml was compared to the objectives of AB411.

Table 4 shows constituents whose annual mean or median virtually exceeded the water quality objectives described above at the San Gabriel Monitoring Station. Eleven chemical constituents were identified as constituents of concern from the comparison. Total coliform and fecal coliform, and enterococcus are included due to their exceedance of AB411.

Table 5 contains constituents that exceeded the water quality objectives at the Coyote Creek Monitoring Station. A total of thirteen constituents were identified as constituents of concern, including three bacteria indicators.

2.3.3 Long-term Trend Analysis

A long-term trend analysis was performed for the water quality constituents selected through a screening procedure over the period from 1995 to 2000. Tables 6 and 7 (see Appendix) show summaries of statistical analysis results from water quality data collected from the San Gabriel River Monitoring Station and the Coyote Creek Monitoring Station, respectively.

Tables 4 and 6 show that the bacteria indicator standards for total and fecal coliform were exceeded every year at the San Gabriel Monitoring Station. The prominent virtual exceedances occurred with cyanide and total dissolved solids. The tables also show that the 1997-1998 storm season, the El Niño season, contributed the most virtual exceedances (twelve constituents exceeded the water quality objectives). It should be noted that there were no virtual exceedances by nutrients (compounds of nitrogen and phosphorus) of the three water quality objectives. The following represents a summary of water quality trends at the San Gabriel Monitoring Station:

Total Coliform

A peak median concentration was observed in the 1995-1996 storm season. Although there has been a drastic reduction in total coliform, its populations still exceed the water quality objective limits.

Fecal Coliform

The highest median concentration was observed in the 1995-1996 storm season. Significant reduction in fecal coliform concentrations has been noted since the 1995-1996 storm season with an isolated peak occurring in the 1997-1998 storm season. Nevertheless, all mean and median concentrations are largely above the water quality objective limits throughout the entire monitoring period.

Fecal Enterococcus

The data show a general trend of reduction on fecal enterococcus concentrations since the 1995-1996 storm season. It should be noted that there were not enough data available for the statistical analysis between the 1996-1997 and 1997-1998 storm seasons.

Total Dissolved Solids

The median concentrations do not show any significant change or trend over the entire monitoring period, except for an isolated peak in the 1998-1999 storm season.

Turbidity

The highest median concentration occurred in the 1997-1998 storm season, exceeding the Ocean Plan water quality objective limit. Median concentrations were in compliance with the Ocean Plan objective for the rest of the monitoring period.

Total Copper

Median concentrations exceeded the Ocean Plan water quality objective for the first three storm seasons. Between the 1998-1999 and 1999-2000 storm seasons, there was a significant reduction of total copper, and both mean and median concentrations during this period were below the Ocean Plan objective.

Dissolved Zinc

Only one of mean concentrations exceeded the California Toxics Rule limit for saltwater in the 1997-1998 storm season. There were not enough water quality data available for analysis in the 1995-1996, 1996-1997 and 1999-2000 storm seasons.

Other Metals

The data show that the median concentrations of total aluminum, dissolved copper, dissolved lead, total lead, and total zinc generally complied with the water quality objective limits over the monitoring period, except for the 1997-1998 storm season.

Bis(2-ethylhexyl)phthalate
Both mean and median concentrations exceeded the Ocean Plan water quality objective limit for the first three storm seasons. Between the 1998-1999 and 1999-2000 storm seasons there were not enough water quality data available for the analysis.

Tables 2 and 4 show that the bacteria indicator data were not available except for the 1995-1996 storm season at the Coyote Creek monitoring station. The prominent virtual exceedances occurred with dissolved and total copper and Bis(2-ethylhexyl)phthalate. The tables also show that the 1995-1996 storm season contributed to the most virtual exceedances (Ten constituents exceeded the water quality objectives). The following represents a summary of water quality trends at the Coyote monitoring station:

Bacteria Indicators
Median concentrations of total coliform, fecal coliform and fecal enterococcus largely exceeded the Basin Plan, Ocean Plan and AB411 objective limits in the 1995-1996 storm season. There was no water quality data available for the analysis from the 1996-1997 storm season to the 1999-2000 storm season because grab samples were not collected during this period.

Total Dissolved Solids
The median concentrations exceed the Basin Plan objective twice over the monitoring period. They do not show any particular trend.

Turbidity
The data show median concentrations generally complied with the Ocean Plan objective, except that the high median concentration exceeded the objective limit in the 1997-1998 storm season.

Total Aluminum
Peak concentrations were observed between the 1996-1997 and 1997-1998 storm seasons, exceeding the Basin Plan water quality objective; however, both mean and median concentrations dropped below the objective limit for the remaining monitoring period.

Dissolved Copper
Median concentrations exhibit an increasing trend for the first three storm seasons with a decreasing trend thereafter. Both mean and median concentrations exceeded the California Toxics Rule objective limits from the 1997-1998 storm season to the 1999-2000 storm season.

Total Copper

The data show both mean and median concentrations generally exceed the Ocean Plan objective limit, except that the concentrations observed in the 1999-2000 storm season were below the objective limit.

Dissolved Lead
The median concentrations exceeded the California Toxics Rule for freshwater twice over the entire monitoring period. Not enough water quality data was available for the statistical analysis for the rest of the monitoring period.

Total Lead
The median concentration observed in the 1995-1996 storm season was below the Ocean Plan objective. Between the 1996-1997 and 1997-1998 storm seasons, the median concentrations displayed a sharply increasing trend with the concentrations above the objective limit. Not enough water quality data was available for the statistical analysis for the remaining monitoring period.

Dissolved Zinc
The highest mean and median concentrations occurred in the 1997-1998 storm season, exceeding the California Toxics Rule objective limits; however, this appeared to be only temporary and median concentrations plunged below the objective limits in the next storm season.

Total Zinc
Escalation in total zinc concentrations was noticed for the first three storm seasons. However, the concentrations exhibit a rapid decreasing trend between the 1998-1999 and 1999-2000 storm seasons.

Bis(2-ethylhexyl)phthalate
The trend fluctuated slightly with no significant change until the 1999-2000 storm season. Not enough data from the storm season was available to perform the statistical analysis. The median concentrations exceed the Ocean Plan objective limit for the first three storm seasons.

2.4 Significant Storm Water Issues Within the WMA

A modified list of significant stormwater issues within the WMA identified in the Los Angeles Regional Water Quality Control Board's (Regional Board) Watershed Management Initiative Chapter, is as follows:

- Reservoir sluicing and reservoir sediment,

- Trash in upper watershed,
- Mining/stream modifications,
- Urban and storm water runoff quality,
- Nonpoint source loading from nurseries and horse stables, and
- Currently scheduled Total Maximum Daily Loads (TMDLs) for the next 6-years are: nutrients, coliform, and metals.

3.0 Watershed Management Plan

3.1 Source Control Strategies

3.1.1 Non-structural Controls - regulatory policies/programs to minimize threats to quality of stormwater and urban runoff.

Permittees within this WMA have adopted the SQMP, jointly developed under the 1996 NPDES Permit, in its entirety as effective and comprehensive procedures for controlling pollution runoff. The Permittees within this WMA are implementing all applicable requirements of the SQMP. Through the extensive effort to meet all the Permit requirements, the Permittees within this WMA have made significant progress in reducing urban runoff pollution. The Permittees within this WMA anticipate further success as SQMP requirements are carried forward and reinforced in future years. The SQMP serves as guidance and requirements under this WMAP.

LACDPW has updated the Development Planning and Public Agency Activities Model Program of the SQMP to reflect the recent approval of a Standard Urban Stormwater Mitigation Plan (SUSMP) requirements. An executive summary of the SQMP has also been added to the beginning of each individual model program of the SQMP. Additional revisions to all model programs will be made following the adoption of the 2001 NPDES Permit.

Under the next NPDES permit, the Permittees wthin this WMA anticipate that additional efforts will be focused on controlling nutrients, coliform, and metals. The Permittees within this WMA anticipate working with the Regional Board staff to develop and implement a plan for the TMDLs to monitor and control these pollutants to the maximum extent practicable.

3.1.2 Structural Controls - any existing and proposed projects to reduce/minimize pollutants of stormwater and urban runoff.

Table 3 Improvement Projects for Stormwater and Urban Runoff

Permittee	Projects:
LACDPW	Current projects: • Installed a low flow diversion in Alamitos Bay Pump Station. Future/Proposed Projects: • Plan on installing catch basin inserts in all maintenance yards' catch basins, Catch Basin Debris Excluders in selected catch basins, and in-line storm water clean-up devices in selected storm drains, and • Investigate the construction of permanent roof cover for existing and new material storage areas and fuel dispensing islands in some of their field facilities.
Caltrans	Current Projects: • Installed two different types of drain inlet inserts at Foothill Maintenance Station, • Installed one Bio strip at I-605/SR91, • Installed three Bio Swales at I-605/SR91, Cerritos Maintenance Station, and I-605/Del Amo Avenue, • Installed an infiltration basin at I-605/SR91, • Installed two extended detention basins at I-5/I-605 Intersection and I-605/SR91 Intersection, • Installed three media filters at Eastern Regional Maintenance Station, Foothill Maintenance Station, and Termination Park and Ride, and • Installed a multi-chambered treatment trains at Via Verde Park and Ride. Future/Proposed Projects: • Designed a Multi-Chambered Treatment Train at their Metro Maintenance Station.

3.2 Recommended Studies

Over the next five years, the Permittees within this WMA anticipate providing guidance on the scope of work for any studies related to receiving water impacts. In particular, Permittees within this WMA anticipate that future studies may address the following issues:

i. The removal efficiency vs. cost comparison for all adopted Performance Standards to assist in effectively focusing resources,
ii. The pollutant removal efficiencies of all structural devices required for

new development to assist in properly sizing devices and in excluding ineffective ones,

iii. An evaluation of the current vs. "natural state" of the San Gabriel River's sediment loading, sediment discharge periods, sediment gradation, and environmental impact taking into account factors such as paved areas and riparian corridor restriction,

iv. Investigate regional solutions to address stormwater quality (i.e. use of spreading grounds, retention basins, and other similar activities), and

v. Studies that evaluate the actual impact of pollutants, and pollutant levels, on the beneficial uses of receiving waters.

3.3 Funding Resources

A variety of different grant funding sources are available to assist in implementing the NPDES Permit. They can generally be categorized into specific grant programs and on-going grant programs, or legislative appropriations.

3.3.1 Specific Grant Programs

These are usually bond issues or legislative funded programs administered by state, local agencies or conservancies. The most recent of these is Proposition 13. The majority of funds not specifically identified and budgeted by the state are being administered through competitive grant programs by the following state agencies:

i. State Water Resources Control Board. The State Board is in turn delegating certain responsibilities to the Regional Boards. For more information, please see their website, http://www.swrcb.ca.gov/prop13/index.html.

ii. Resources Agency. This large "umbrella" state agency has either assigned or had appropriated/designated certain funding to the various departments, boards and commissions, conservancies, and special programs. This agency has just recently been legislatively charged with the responsibility to develop a comprehensive listing of the available funding sources, including federal, state, local, and private, for water quality improvements. It is to be posted on the internet by

November 1, 2002. For more information, see their website, http://ceres.ca.gov/cra

iii. Department of Water Resources. This Department within the Resources Agency has funding available for water replenishment projects. For more information, please see their website, http://wwwdwr.water.ca.gov/WaterBond2000

3.3.2 On-Going Grant Programs

i. The state agencies noted above also have on-going grant programs. Their websites are excellent information sources.

ii. Federal Government. There are many funding sources for water quality improvements. The sources are too numerous to list, however there is an excellent website at the Federal EPA that lists the federal and other sources. The site is: http://www.epa.gov/OWOW/watershed/wacademy/fund.html

3.3.3 Legislative Appropriations

Local jurisdictions can also work with stakeholders (Table 8) and elected representatives to pass legislation that funds water quality improvements. This can be done at both the local and national levels. Bond issues are another local and state method to fund improvements.

4.0 References

Los Angeles County Department of Public Works, *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report*, July 31, 2000

Los Angeles County Department of Public Works, *Los Angeles County 1999-2000 Stormwater Monitoring Report*, July 11, 2000

California Department of Fish and Game, California Natural Diversity Database, Wildlife & habitat Data Analysis Branch, Data Date 11/6/00

Woodward-Clyde and Psomas and Associates, *Evaluation of Land Use Monitoring Stations*, 1996

Michelle Miller, *A Watershed Management Plan: Steps to Protect Your Water Supply*, http://www.epa.gov/OWOW/watershed/Proceed/miller.html

Regional Board, *Watershed Management Initiative Chapter, Executive Summary*, January 2000

Significant Ecological Areas in the Santa Clarita Valley, http://www.scope.org/scope/sea/index.html

5.0 Appendix

Table 4. Comparison of Annual Mean and Median Concentrations to Objectives (San Gabriel Monitoring Station)

Class Constituent	DL	Units	Guidelines and Standards					San Gabriel River					
			Ocean Plan[g]	Basin Plan[g]	AB 411	California Toxics Rule (freshwater)[d]	California Toxics Rule (saltwater)[d]	1995-96	1996-97	1997-98	1998-99	1999-2000	Total
Total Rainfall (in.)						-	-	13.11	8	28.8	6.2	12.41	
Cyanide	0.01	mg/l	0.004[a]	0.2		0.0052	0.001	X	X	X	X	-	4
Total Coliform	20	MPN/100ml	1000[b]	70	10,000 (Instantaneous)			X	X	X	X	X	5
Fecal Coliform	20	MPN/100ml	200[b]	200	400 (Instantaneous)			X	X	X	X	X	5
Fecal Enterococcus	20	MPN/100ml	24[c]		104			X	-	-	X	X	3
Total Dissolved Solids	2.0	mg/l		250				X	X		X	X	4
Turbidity	0.1	NTU	75[b]							X		X	2
Total Aluminum	100	mg/l		1000				-		X			1
Dissolved Copper	5	mg/l				9	3.1	-		X	-	-	1
Total Copper	5	mg/l	12[e]					X	X	X			3
Dissolved Lead	5	mg/l				2.5	8.1	-	-	X	-	-	1
Total Lead	5	mg/l	8[e]					-	X	X	-	-	2
Dissolved Zinc	50	mg/l				120	81	-	-	X		-	1
Total Zinc	50	mg/l	80[e]						X	X		-	2
Bis(2-ethylhexyl)phthalate	1	mg/l	3.5[b]					X	X	X	-	-	3
Total								7	8	12	5	5	37

X = Greater than objective. Except for indicator bacteria, there are no numerical water quality standards that apply to stormwater or "non-point source" pollution. Current federal and state numerical standards apply only to "point source pollution," such as sanitary sewage, industrial and commercial discharges to the ocean and other waterbodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff and any exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, a direct comparison of the sampling results with the Ocean Plan standards cannot be made since the results presented in the table are detected values before dilution, a factor allowed by the Ocean Plan.

^ = Rain gage not active

~ = Statistically invalid data, not enough samples or data above detection limit collected

NS = Not Sampled

Blank = No Exceedance

DL = Detection Limit

a) Criteria based on daily maximum

b) Criteria based on 30-day average

c) Criteria for the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, 1,12-benzoperylene, benzo(a)pyrene, chrysene, dibenzo(ah)anthracene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene

d) Criteria continuous concentration which equals the highest concentration of pollutant to which aquatic life can be exposed for an extended period time (4 days) without deleterious effects.

e) Criterion expressed in the total recoverable form.

f) Criteria maximum concentration which equals the highest concentration of pollutant to which aquatic life can be exposed for a short period time without deleterious effects.

g) Except for indicator bacteria, there are no numerical water quality standards that apply to stormwater or "non-point source" pollution. Current federal and state numerical standards apply only to "point source pollution," such as sanitary sewage, industrial and commercial discharges to the ocean, and other waterbodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff, and any exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, a direct comparison of the sampling results with the Ocean Plan standards cannot be made since the results presented in the table are detected values before dilution, a factor allowed by the Ocean Plan.

h) Detection limits have changed throughout the monitoring process. Only data matching the current detection limit is displayed in this table. The Data Included Since field indicates the first year of the storm season with the current detection limit.

Table 5. Comparison of Annual Mean and Median Concentrations to Objectives (Coyote Creek Monitoring Station)

Class Constituent	DL	Units	Guidelines and Standards					Coyote Creek					
			Ocean Plan[g]	Basin Plan[g]	AB 411	California Toxics Rule (freshwater)[d]	California Toxics Rule (saltwater)[d]	1995-96	1996-97	1997-98	1998-99	1999-2000	Total
Total Rainfall (in.)								^	6.06	23.03	6.64	5.29	
Total Coliform	20	MPN/100ml	1000[b]	70	10,000 (Instantaneous)			X	NS	NS	NS	NS	1
Fecal Coliform	20	MPN/100ml	200[b]	200	400 (Instantaneous)			X	NS	NS	NS	NS	1
Fecal Enterococcus	20	MPN/100ml	24[b]		104			X	-	-	-	-	1
Total Dissolved Solids	2.0	mg/l		250				X			X	X	3
Turbidity	0.1	NTU	75[b]					X		X	X		3
Total Aluminum	100	mg/l		1000				-	X	X			2
Dissolved Copper	5	mg/l				9	3.1	X		X	X	X	4
Total Copper	5	mg/l	12[a]					X	X	X	X		4
Dissolved Lead	5	mg/l				2.5	8.1	-		X	-	-	1
Total Lead	5	mg/l	8[a]					X	X	X	-	-	3
Dissolved Zinc	50	mg/l				120	81		-	X		-	1
Total Zinc	50	mg/l	80[a]					X	X	X			3
Bis(2-ethylhexyl)phthalate	1	mg/l	3.5[b]					X	X	X	X	-	4
Total								10	5	9	5	2	31

X = Greater than objective. Except for indicator bactena, there are no numerical water quality standards that apply to stormwater or "non-point source" pollution. Current federal and state numerical standards apply only to "point source pollution," such as sanitary sewage, industrial and commercial discharges to the ocean, and other waterbodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff, and any exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, a direct comparison of the sampling results with the Ocean Plan standards cannot be made since the results presented in the table are detected values before dilution, a factor allowed by the Ocean Plan

^ = Rain gage not active

- = Statistically invalid data, not enough samples or data above detection limit collected

NS = Not Sampled

Blank = No Exceedance

DL = Detection Limit

a) Criteria based on daily maximum

b) Criteria based on 30-day average

c) Criteria for the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, 1,12-benzoperylene, benzo(a)pyrene, chrysene, dibenzo(ah)anthracene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene.

d) Criteria continuous concentration which equals the highest concentration of pollutant to which aquatic life can be exposed for an extended period time (4 days) without deleterious effects.

e) Criterion expressed in the total recoverable form.

f) Criteria maximum concentration which equals the highest concentration of pollutant to which aquatic life can be exposed for a short period time without deleterious effects

g) Except for indicator bactena, there are no numerical water quality standards that apply to stormwater or "non-point source" pollution. Current federal and state numerical standards apply only to "point source pollution," such as sanitary sewage, industrial and commercial discharges to the ocean, and other waterbodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff, and any exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, a direct comparison of the sampling results with the Ocean Plan standards cannot be made since the results presented in the table are detected values before dilution, a factor allowed by the Ocean Plan

h) Detection limits have changed throughout the monitoring process. Only data matching the current detection limit is displayed in this table. The Data Included Since field indicates the first year of the storm season with the current detection limit

Table 6. Summary of Statistical Analysis Results of Water Quality Data (San Gabriel Monitoring Station)

			San Gabriel River																									
			1995-96						1996-97						1997-98						1998-99						1999-2000					
Constituent	DL	Units	No of Samples	No of Non-detects	Percent Detects	Mean	Median	CV	No of Samples	No of Non detects	Percent Detects	Mean	Median	CV	No of Samples	No of Non detects	Percent Detects	Mean	Median	CV	No of Samples	No of Non-detects	Percent Detects	Mean	Median	CV	No of Samples	No of Non detects	Percent Detects	Mean	Median	CV
Cyanide	0 01	mg/l	4	3	25	0 010	0 005	1 47	4	3	25	0 010	0 005	0 95	9	6	33	0 025	0 005	2 11	12	4	67	0 038	0 010	2 08	9	9	0	SID	SID	SID
Total Coliform	20	MPN/100ml	5	0	100	3,500,000	2,400,000	0 88	4	0	100	401,250	135,000	1 51	9	0	100	3,062,222	500,000	1 68	12	1	92	513,166	200,000	1 93	9	0	100	263,222	280,000	0 51
Fecal Coliform	20	MPN/100ml	5	0	100	1,388,000	1,800,000	0 74	4	0	100	76,950	3,360	1 93	9	0	100	2,406,888	110,000	2 22	12	1	92	40,795	1,260	2 17	9	0	100	73,844	28,000	1 38
Fecal Enterococcus	20	MPN/100ml	5	0	100	922,400	220,000	1 06	1	0	100	SID	SID	SID	0	0	SID	SID	SID	SID	8	0	100	16,670	1,060	2 32	9	0	100	18,418	18,000	0 64
Total Dissolved Solids	2 0	mg/l	4	0	100	301	286	0 09	4	0	100	288	284	0 29	9	0	100	249	242	0 25	13	0	100	460	468	0 40	10	0	100	267	231	0 40
Turbidity	0 1	NTU	5	0	100	43	22	1 22	4	0	100	66	24	1 27	9	0	100	248	129	1 16	13	0	100	42	27	0 88	10	0	100	88	66	0 90
Total Aluminum	100	µg/l	0	0	SID	SID	SID	SID	4	3	25	815	50	1 88	11	0	100	4481	3520	0 78	13	1	92	236	204	0 58	10	0	100	401	338	0 68
Dissolved Copper	5	µg/l	5	5	0	SID	SID	SID	4	3	25	2 7	2 5	0 13	11	3	73	13	13	0 77	13	12	8	SID	SID	SID	10	9	10	SID	SID	SID
Total Copper	5	µg/l	5	2	60	11	14	0 76	4	1	75	18	13	1 02	11	0	100	24	22	0 55	13	1	92	7 3	6 7	0 38	10	1	90	7 4	7 5	0 36
Dissolved Lead	5	µg/l	5	5	0	SID	SID	SID	4	4	0	SID	SID	SID	11	6	45	10	2 5	1 07	13	13	0	SID	SID	SID	10	10	0	SID	SID	SID
Total Lead	5	µg/l	5	5	0	SID	SID	SID	4	1	75	10	6 4	1 03	11	3	73	16	10	0 87	13	13	0	SID	SID	SID	10	9	10	SID	SID	SID
Dissolved Zinc	50	µg/l	5	5	0	SID	SID	SID	4	4	0	SID	SID	SID	11	6	45	99	25	0 86	13	10	23	32	25	0 40	10	10	0	SID	SID	SID
Total Zinc	50	µg/l	5	3	40	44	25	0 80	4	2	50	96	40	1 29	11	0	100	186	173	0 44	13	5	62	50	51	0 46	10	10	0	SID	SID	SID
Bis(2-ethylhexyl)phthalate	1	µg/l	4	1	75	17	28	1 02	4	1	75	17	5 0	1 48	11	1	91	17	15	0 63	2	1	50	SID	SID	SID	0	0	SID	SID	SID	SID

CV = Coefficient of variation
DL = Detection Limit
SID = Statistically invalid Data, not enough data above detection limit collected
See Table 4 3 for water quality objectives

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Table 7. Summary of Statistical Analysis Results of Water Quality Data
(Coyote Creek Monitoing Station)

			Coyote Creek																									
			1995-96					1996-97					1997-98					1998-99					1999-2000					
Constituent	DL	Units	No of Samples	No of Non-detects	Percent Detects	Mean	Median	CV	No of Samples	No of Non-detects	Percent Detects	Mean	Median	CV	No of Samples	No of Non-detects	Percent Detects	Mean	Median	CV	No of Samples	No of Non-detects	Percent Detects	Mean	Median	CV	No of Samples	No of Non-detects	Percent Detects	Mean	Median	CV
Total Coliform	20	MPN/100ml	5	1	80	5,320,000	5,000,000	1.02	0	0	S I D	S I D	S I D	S I D	0	0	S I D	S I D	S I D	S I D	7	0	100	S I D	S I D	S I D	0	0	S I D	S I D	S I D	S I D
Fecal Coliform	20	MPN/100ml	5	0	100	4,044,000	1,600,000	1.88	0	0	S I D	S I D	S I D	S I D	0	0	S I D	S I D	S I D	S I D	2	0	100	S I D	S I D	S I D	0	0	S I D	S I D	S I D	S I D
Fecal Enterococcus	20	MPN/100ml	5	1	80	470,000	940,000	1.46	0	0	S I D	S I D	S I D	S I D	0	0	S I D	S I D	S I D	S I D	1	0	100	S I D	S I D	S I D	0	0	S I D	S I D	S I D	S I D
Total Dissolved Solids	2.0	mg/l	5	0	100	349	342	0.34	4	0	100	172	174	0.13	10	0	100	233	180	0.75	13	0	100	386	302	0.94	12	0	100	286	253	0.62
Turbidity	0.1	NTU	5	0	100	77	65	0.63	4	0	100	42	35	0.73	10	0	100	185	105	1.14	14	0	100	77	65	0.71	12	0	100	83	56	0.80
Total Aluminum	100	ug/l	0	0	S I D	S I D	S I D	S I D	4	1	75	1883	1230	0.89	10	0	100	3147	2705	0.83	14	0	100	630	299	1.74	12	2	83	278	237	0.68
Dissolved Copper	5	ug/l	5	4	20	4.8	2.5	1.02	4	3	25	2.4	2.5	0.13	10	1	90	31	20	0.83	14	8	57	9.2	8.6	0.51	12	6	50	8.8	3.8	0.80
Total Copper	5	ug/l	5	1	80	25	24	0.63	4	0	100	84	23	0.70	10	0	100	43	28	0.89	14	0	100	14	12	0.63	12	1	92	10	9	0.46
Dissolved Lead	5	ug/l	5	5	0	S I D	S I D	S I D	4	3	25	2.4	2.8	0.11	10	4	60	20	13	1.30	14	14	0	S I D	S I D	S I D	12	12	0	S I D	S I D	S I D
Total Lead	5	ug/l	5	2	60	9.8	2.5	1.28	4	1	75	19	10	0.98	10	4	60	35	17	1.41	14	12	14	S I D	S I D	S I D	12	10	17	S I D	S I D	S I D
Dissolved Zinc	50	ug/l	5	3	40	39	25	0.48	4	4	0	S I D	S I D	S I D	10	4	60	234	145	1.16	14	11	21	34	25	0.57	12	12	0	S I D	S I D	S I D
Total Zinc	50	ug/l	5	1	80	88	80	0.56	4	0	100	89	63	0.85	10	0	100	344	286	0.62	14	5	64	67	62	0.82	12	9	25	36	25	0.58
Bis(2 ethylhexyl)phthalate	1	ug/l	5	1	80	17	27	1.04	4	1	75	17	7.7	0.99	9	1	89	17	11	1.02	4	2	50	17	20	0.83	1	1	0	S I D	S I D	S I D

C.V. = Coefficient of variation
DL = Detection Limit
S I D = Statistically Invalid Data, not enough data above detection limit collected
See Table 4.3 for water quality objectives

Table 8 WATERSHED MANAGEMENT
STAKEHOLDER LIST

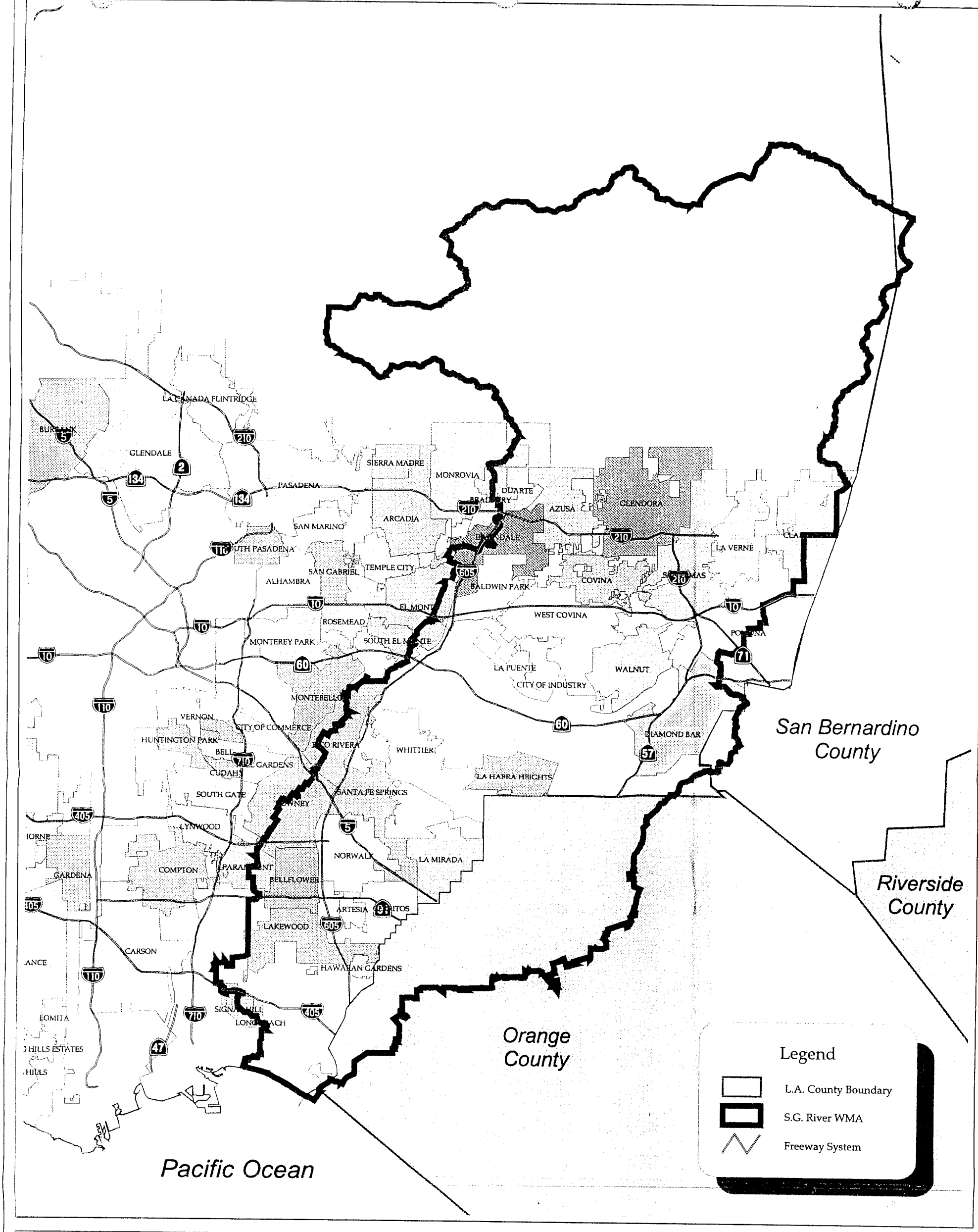
Stakeholders	Jurisdiction	WATERSHED INTERESTS						
		ANT	BAL	DOM	LAR	MAL	SC	SGR
Artesia	City							X
Azusa	City							X
Baldwin Park	City							X
Bellflower	City							X
Bradbury	City							X
Cerritos	City							X
Claremont	City							X
Covina	City							X
Diamond Bar	City							X
Downey	City				X			X
Duarte	City							X
Glendora	City							X
Hawaiian Gardens	City							X
Industry	City							X
Irwindale	City							X
La Habra Heights	City							X
La Mirada	City							X
La Puente	City							X
La Verne	City							X
Lakewood	City							X
Long Beach	City				X			X
Norwalk	City							X
Pico Rivera	City							X
Pomona	City							X
San Dimas	City							X
Santa Fe Springs	City							X
Seal Beach	City							X
Walnut	City							X
West Covina	City							X
Whittier	City							X
Southern California Edison	Commercial		X	X	X	X		X
American Land Conservancy	Conservancy							X
California State Coastal Conservancy	Conservancy				X		X	X
Claremont Wildlands Conservancy	Conservancy							X
Covina & Walnut Creek Conservancy	Conservancy							X
Foothills Wildlife Conservancy	Conservancy				X			X
Glendora Community Conservancy	Conservancy							X
Glendora Wildlands Conservancy	Conservancy							X
Monrovia Mountains Conservancy	Conservancy				X			X
Mountains Recreation and Conservation Authority	Conservancy				X			X
San Dimas Foothills Conservancy	Conservancy							X
San Gabriel & Lower Los Angeles Rivers & Mountains Conservancy	Conservancy				X			X
San Gabriel Mountains Regional Conservancy	Conservancy							X
Santa Monica Mountains Conservancy	Conservancy				X			X
Sierra Madre Mountains Conservancy	Conservancy				X			X
Tonner Canyon Wilderness Conservancy	Conservancy							X
Gateway Cities	Council of Government		X	X	X	X		X
San Gabriel Valley	Council of Government				X			X
Southern California Association of Governments	Council of Government		X	X	X			X
County of Los Angeles Department of Parks and Recreation	County	X	X	X	X	X	X	X
County of Los Angeles Department of Public Works	County	X	X	X	X	X	X	X
County of Los Angeles Department of Regional Planning	County	X	X	X	X	X	X	X
County of Los Angeles Department of Water and Power	County	X	X	X	X	X	X	X
County of Los Angeles Fire Department	County	X	X	X	X	X	X	X
County of Los Angeles Sanitation Districts	County	X	X	X	X	X	X	X
Metropolitan Transportation Authority	County	X	X	X	X	X	X	X
Orange County	County							X
California Exotic Pest	Environmental		X	X		X		X
California Native Plant Society	Environmental	X	X	X	X	X	X	X
El Dorado Nature Center	Environmental				X			X
Equestrian Trails Incorporated	Environmental		X	X		X		X
Fly Fishers Club of Orange County	Environmental							X
Friends of the San Gabriel River	Environmental							X
Heal the Bay	Environmental		X	X	X	X		X
LA Bicycle Advisory Comm	Environmental		X	X	X	X		X
LA City Bicycle Coalition	Environmental		X	X	X	X		X
LA County Bicycle Coalition	Environmental		X	X	X	X		X
Los Cerritos Wetlands Task Force	Environmental							X
North East Trees	Environmental	X	X	X	X	X	X	X
Plant Council (look up)	Environmental		X	X		X		X
Preservation Authority (look up)	Environmental		X	X		X		X
Puente Hills Landfill Native Habitat (look up)	Environmental							X
Sierra Club- LA Chapter	Environmental		X	X	X	X		X
Surfrider Foundation	Environmental		X	X	X	X		X
TreePeople	Environmental	X	X	X	X	X	X	X
Environmental Protection Agency	Federal	X	X	X	X	X	X	X
National Environmental Policy Act	Federal		X	X	X	X		X
National Marine & Fisheries Service	Federal	X	X	X	X	X	X	X
National Parks Service	Federal	X	X	X	X	X	X	X
National Resource Conservation	Federal	X	X	X	X	X	X	X
United States Army Corp of Engineers	Federal	X	X	X	X	X	X	X
United States Department of the Interior National Park Service	Federal	X	X	X	X	X	X	X
United States Fish and Wildlife Service	Federal	X	X	X	X	X	X	X
United States Forest Service - Angeles National Forest	Federal	X	X	X	X	X	X	X
Water Quality Authority Board	Federal		X	X		X		X
Air Quality Management District	Local		X	X	X	X		X
Monrovia Nursery Company	Local							X
Pasadena Department of Water & Power	Local							X
Raymond Basin Management Board (water proveyor?)	Local							X
Resource Conservation District of the San Gabriel Mountains	Local							X
City Police	Local		X	X	X	X		X
Police Departments	Local		X	X		X		X
Sheriffs Departments	Local		X	X		X		X
American Institute of Architects	Organization		X	X	X	X		X
Central Basin Water Association	Organization							X
Chino Basin Watermaster	Organization							X
Committee of Nine/San Gabriel River Water Committee	Organization							X
LA/SG Rivers Watershed Council	Organization				X			X
Main San Gabriel Basin Watermaster	Organization							X
Mountains Restoration Trust (look up)	Organization							X
National Audubon Society	Organization		X	X	X	X		X
Pomona Valley Protective Assoc. (association/associates)?	Organization							X
San Gabriel River Water Committee	Organization							X
San Gabriel River Watermaster	Organization							X
San Gabriel Valley Water Association	Organization							X
Southeast Water Coalition	Organization							X
Trust for Public Land	Organization		X	X	X	X		X
John L. Hunter & Associates	Private Firm							X
PS Enterprises	Private Firm							X
San Gabriel Hydroelectric Associates	Private Firm							X
Hanson Aggregates	Sand/Gravel							X
Southdown, Inc.	Sand/Gravel							X
United Rock Products	Sand/Gravel							X

Table 8 WATERSHED MANAGEMENT
STAKEHOLDER LIST

Stakeholders	Jurisdiction	WATERSHED INTERESTS						
		ANT	BAL	DOM	LAR	MAL	SC	SGR
Vulcan Materials/CalMat Division	Sand/Gravel						X	X
Assemblymember Alan Lowenthal, 54	State Assembly District		X	X				X
Assemblymember Bob Margett,59	State Assembly District				X			X
Assemblymember Carl Washington, 52	State Assembly District				X			X
Assemblymember Martin Gallegos, 57	State Assembly District				X			X
Assemblymember Robert Pacheco, 60	State Assembly District							X
Assemblymember Sally Havice, 56	State Assembly District				X			X
Assemblymember Thomas M. Calderon, 58	State Assembly District				X			X
Assemblymember Vacant, 61	State Assembly District							X
Congressmember David Dreier, 28	State Congressional District				X			X
Congressmember Edward R. Royce, 39	State Congressional District							X
Congressmember Gary G. Miller, 41	State Congressional District							X
Congressmember Grace F. Napolitano, 34	State Congressional District				X			X
Congressmember Matthew G. Martinez, 31	State Congressional District				X			X
Congressmember Stephen Horn, 38	State Congressional District				X			X
California Conservation Corp	State Departments		X	X	X	X		X
California Department of Fish and Game	State Departments	X	X	X	X	X	X	X
California Department of Parks and Recreation	State Departments	X	X	X	X	X	X	X
California Department of Transportation	State Departments	X	X	X	X	X	X	X
California Department of Water Resources	State Departments	X	X	X	X	X	X	X
California Environmental Protection Agency	State Departments	X	X	X	X	X	X	X
California Environmental Quality Act	State Departments	X	X	X	X	X	X	X
Southern California Association of Governments	State Departments	X	X	X	X	X	X	X
State Department of Parks & Recreation	State Departments	X	X	X	X	X	X	X
State Department of Water Resources	State Departments	X	X	X	X	X	X	X
State Soils Conservation	State Departments	X	X	X	X	X	X	X
SWRCB-Regional Water Quality Control Board, LA Region	State Departments	X	X	X	X	X	X	X
Senator Betty Karnette, 27	State Senate District		X	X	X			X
Senator Hilda L. Solis, 24	State Senate District				X			X
Senator Martha Escutia, 30	State Senate District				X			X
Senator Nell Soto, 32	State Senate District							X
Senator Richard Mountjoy, 29	State Senate District				X			X
Senator Teresa Hughes, 25	State Senate District		X	X	X			X
Azusa Agricultural Water Company	Water Purveyor							X
Azusa Valley Water Company	Water Purveyor							X
Azusa Water District	Water Purveyor							X
California-American Water Company	Water Purveyor		X	X		X		X
Central & West Basin MWD	Water Purveyor		X	X		X		X
Covina Irrigating Company	Water Purveyor							X
Metropolitan Water Districts	Water Purveyor		X	X	X	X		X
San Gabriel Valley Municipal District	Water Purveyor							X
San Gabriel Valley Water Company (are they active?)	Water Purveyor							X
San Gabriel Water Association	Water Purveyor							X
Southern California Water Company (are they active?)	Water Purveyor							X
Three Valleys Municipal Water District	Water Purveyor							X
United Water Conservation District	Water Purveyor		X	X		X	X	X
Upper San Gabriel Valley Municipal District	Water Purveyor							X
Water Replenishment District	Water Purveyor		X	X		X		X

ANT: Antelop Valley
BAL: Ballona Creek
DOM: Dominguez Channel/L.A. Harbor
LAR: Los Angeles River
MAL: Malibu Creek
SC: Santa Clara River
SGR: San Gabriel River

R0000237



LOS ANGELES COUNTY PUBLIC WORKS
Public Service That Works

San Gabriel River Watershed Management Area Plan

Figure 1. Watershed Boundary

N W E S

2 0 2 4 Miles

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September 11, 2000

R0000238

San Bernardino County

Riverside County

Orange County

Pacific Ocean

Legend

- L.A. County Boundary
- S.G. River WMA
- Sub-Basins
- Flow Direction
- Major Channels

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

San Gabriel River Watershed Management Area Plan

Figure 2. Sub-Basins and Flow Directions

N W E S

2 0 2 4 Miles

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R0000239

September 11, 2000

San Bernardino County

Riverside County

Orange County

Pacific Ocean

Legend

- L.A. County Boundary
- S.G. River WMA
- Freeway System
- Contour Lines

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

San Gabriel River Watershed Management Area Plan

Figure 3. Contours

N W E S

2 0 2 4 Miles

R0000240

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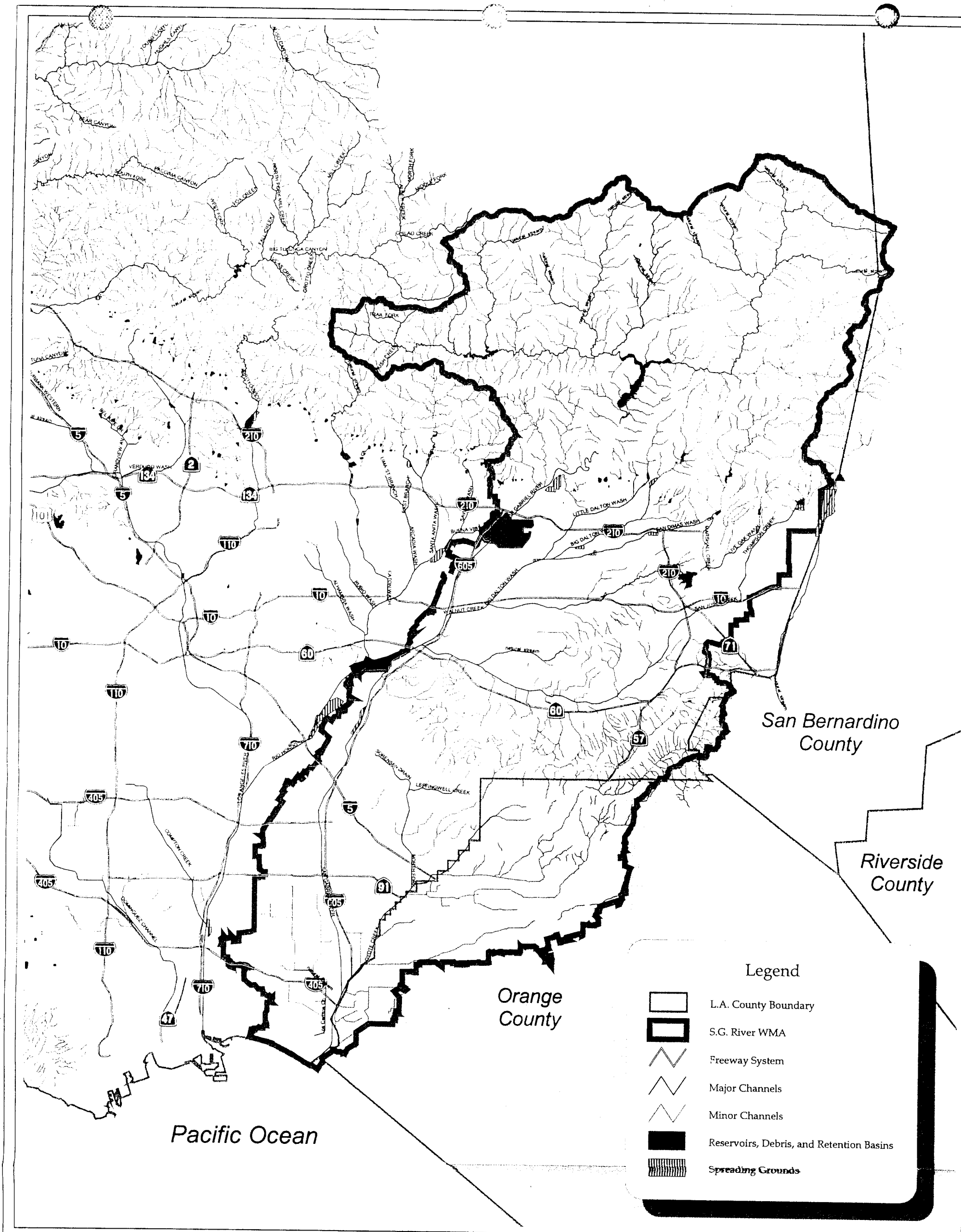
September 18, 2000



LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

San Gabriel River Watershed Management Area Plan

Figure 4. Drainage Facilities

R0000241

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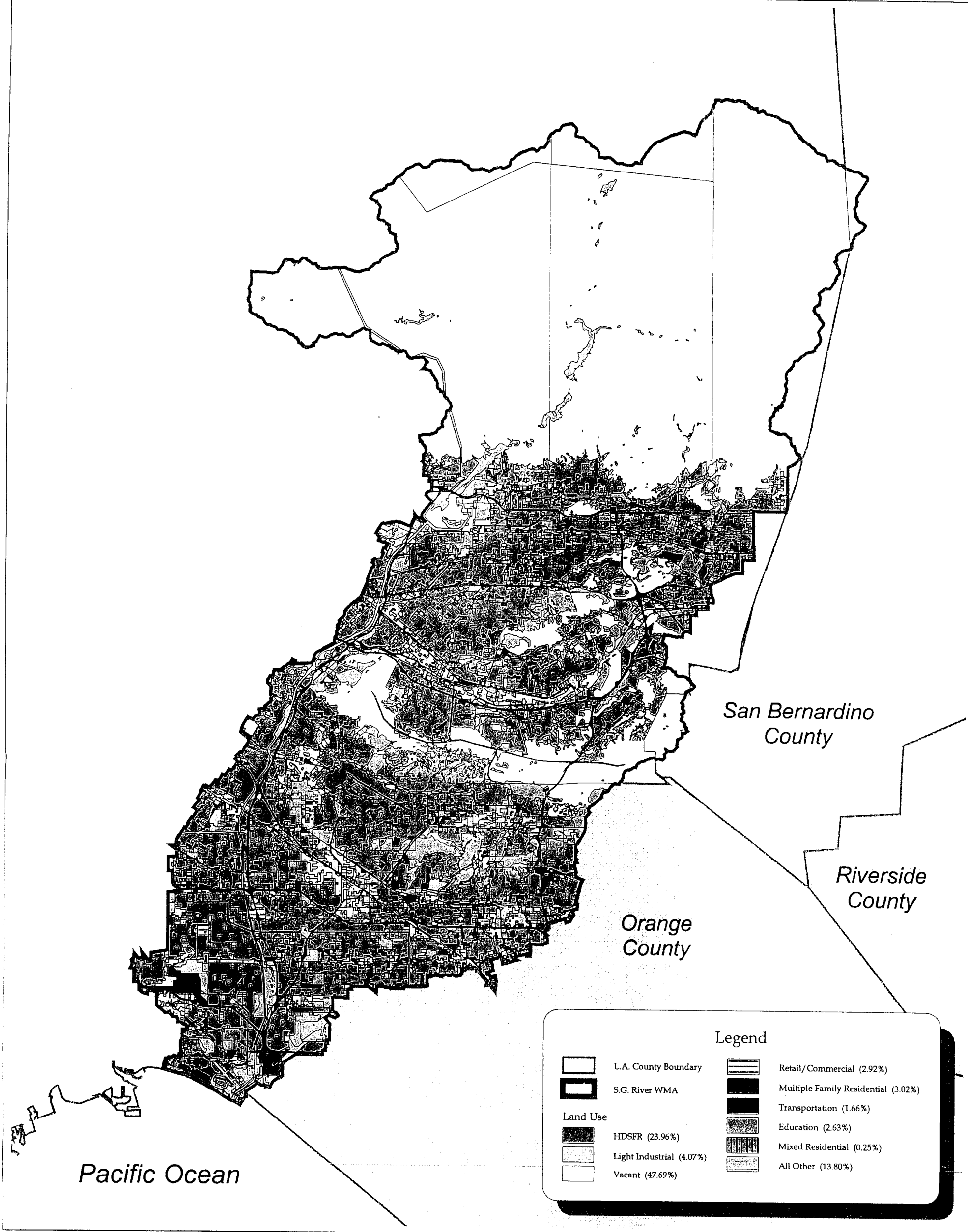
September 11, 2000



LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

San Gabriel River Watershed Management Area Plan

Figure 5. Land Use

N W E S

2 0 2 4 Miles

R0000242

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September 11, 2000

San Bernardino County

Riverside County

Orange County

Pacific Ocean

Legend

L.A. County Boundary

S.G. River WMA

Soil Types

- ALTAMONT CLAY LOAM
- CHINO SILT LOAM
- DIABLO CLAY LOAM
- HANFORD FINE SANDY LOAM
- HANFORD GRAVELLY SANDY LOAM
- HANFORD SILT LOAM
- LITTLE ROCK CREEK
- MONTEZUMA CLAY ADOBE
- OAKLEY FINE SAND
- PLACENTIA LOAM
- RAMONA CLAY LOAM
- RAMONA LOAM
- RAMONA SANDY LOAM
- SANTA CLARA RIVER
- SANTA MONICA MOUNTAINS
- TUJUNGA FINE SANDY LOAM
- UPPER LOS ANGELES RIVER
- UPPER SAN GABRIEL RIVER
- YOLO CLAY LOAM
- YOLO FINE SANDY LOAM
- YOLO GRAVELLY SANDY LOAM
- YOLO LOAM
- YOLO SANDY LOAM

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

San Gabriel River Watershed Management Area Plan

Figure 6. Soil

R0000243

N W E S

2 0 2 4 Miles

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September 19, 2000

Nevin's Barberry

Thread-Leaved Brodiaea

San Bernardino County

Least Bell's Vireo

Riverside County

Orange County

Legend

- Freeway System
- Primary Streets

Federally Listed As Threatened and Endangered Species

- CALIFORNIA LEAST TERN
- COASTAL CALIFORNIA GNATCATCHER
- LEAST BELL'S VIREO
- NEVIN'S BARBERRY
- SALT MARSH BIRD'S-BEAK
- SANTA ANA SUCKER
- SLENDER-HORNED SPINEFLOWER
- THREAD-LEAVED BRODIAEA

Data Source: California Natural Diversify Database Wildlife and Habitat Data Analysis Branch, Department of Fish and Game, November 2000

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

San Gabriel River Watershed Management Area Plan

Figure 7a. Federally Listed As Threatened and Endangered Species Locations

RE0000244

N W E S

2 0 2 4 Miles

P:\eppub\water\gis\projects\wmaps\SG_River_WMA.apr

December 12, 2000

Thread-Leaved Brodiaea

Nevin's Barberry

Western Yellow-Billed Cuckoo

Least Bell's Vireo

California Least Tern

Legend

Freeway System

Primary Streets

State Listed As Threatened and Endangered Species

- BELDING'S SAVANNAH SPARROW
- CALIFORNIA LEAST TERN
- LEAST BELL'S VIREO
- NEVIN'S BARBERRY
- SALT MARSH BIRD'S-BEAK
- SLENDER-HORNED SPINEFLOWER
- THREAD-LEAVED BRODIAEA
- WESTERN YELLOW-BILLED CUCKOO

Data Source: California Natural Diversify Database
Wildlife and Habitat Data Analysis
Branch, Department of Fish and
Game, November 2000

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

San Gabriel River Watershed Management Area Plan

Figure 7b. State Listed As Threatened and Endangered Species Locations

R0000245

N W E S

2 0 2 4 6 Miles

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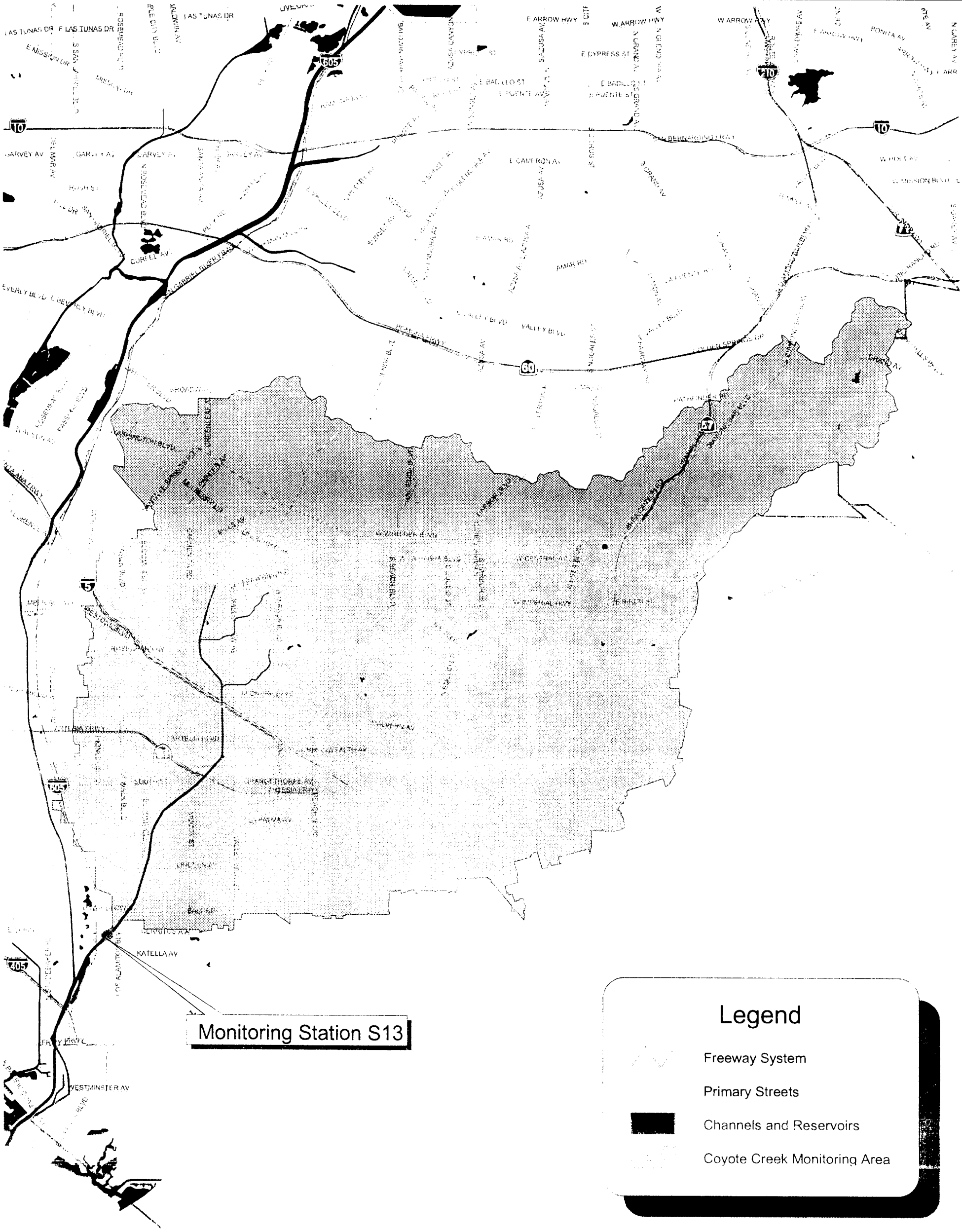
December 12, 2000



LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

San Gabriel River Watershed Management Area Plan

Figure 8. Mass Emission Monitoring Station S13

R0000246

N W E S

0.8 0 0.8 1.6 2.4 Miles

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December 13, 2000

Monitoring Station S14

Legend

- Freeway System
- Primary Streets
- Channels and Reservoirs
- San Gabriel River Monitoring Area

LOS ANGELES COUNTY PUBLIC WORKS
Public Service That Works

San Gabriel River Watershed Management Area Plan

Figure 9. Mass Emission Monitoring Station S14

R0000247

N W E S

1 0 1 2 3 4 Miles

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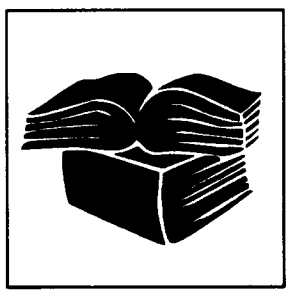
December 12, 2000

Stormwater Quality Management Plan (SQMP)

Public Information and Participation Program

Industrial and Commercial
Educational Program



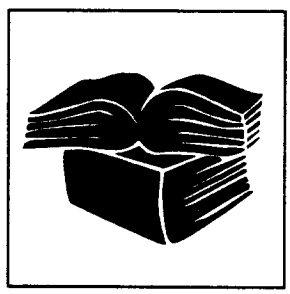
URS Corporation
Camp Dresser & McKee Inc.
Consensus Planning
Psomas and Associates
Larry Walker Associates
Geoff Brosseau

FEBRUARY 2001

Stormwater Quality Management Plan (SQMP)

Public Information and Participation Program

Industrial and Commercial
Educational Program



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FEBRUARY 2001

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R0000250

ES.1 Overview

On July 15, 1996, the Los Angeles Regional Water Quality Control Board (Regional Board) issued a municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit (Permit) to the County of Los Angeles and 85 cities (Permittees). This Permit contains a requirement for Permittees to develop and implement within their jurisdiction a Storm Water Management Program (SWMP). The Countywide Storm Water Management Plan (CSWMP) is the unified plan consisting of model programs developed under the Storm Water Management Program requirements as established by the Permit. These model programs are aimed to reduce pollutant discharges to the maximum extent practicable for attaining water quality objectives and protecting beneficial uses of receiving waters in Los Angeles County.

In the 2001 NPDES permit, the CSWMP has been renamed to the Stormwater Quality Management Plan (SQMP). For the remainder of this document, the acronym SQMP is used.

The Permit required the Permittees to develop a model program to address each of the following:

- Illicit Connections and Illicit Discharges,
- Development Planning,
- Development Construction,
- Public Agency Activities, and
- Public Information and Participation

Each model program is a "stand-alone" document that describes one of these five elements of the SQMP. Record-keeping and reporting requirements are also associated with each model program. This Executive Summary describes the primary requirements of each of the model programs comprising the SQMP. The remainder of this document is the SQMP element referred to as the Industrial and Commercial Educational Program, which was approved by the Regional Board in April 1998.

ES.2 Model Illicit Connections / Illicit Discharge Elimination Program

Part 2.II of the Permit contains requirements specifically for the identification and elimination of illicit connections and illicit discharges to the municipal separate storm sewer system (MS4), generally referred to in this document as "storm drain system." The Permit requirements include five components for the elimination of illicit connections and illicit discharges. Those five components are:

- Illicit connection elimination,
- Illicit discharge elimination,
- Best management practices (BMPs) program for designated non-stormwater discharges,
- Public reporting of illicit discharge and disposal practices, and
- Hazardous waste reporting program.

Illicit Connection Elimination

The goal of this component is to detect and eliminate illicit connections in order to reduce pollutants discharged through such connections to the maximum extent practical. The objectives are to:

- Conduct storm drain system field screening for illicit connections during scheduled infrastructure maintenance by maintenance personnel.
- Determine the source and nature of suspected illicit discharges by investigating connections to the storm drain system.

The model program also describes a methodology that Permittees may use in prioritizing areas of their jurisdiction for investigation. Once the illicit connection/discharge has been investigated, one of the following actions must occur:

- If the discharge is determined to consist only of exempted non-stormwater, the connection will be allowed to remain and will no longer be considered an illicit connection. Permittees may elect to issue a permit for the connection or allow the connection to remain if information on the connection is documented; or
- The discharger will be required to obtain an NPDES permit; or
- The connection will be terminated through voluntary action or enforcement proceedings.

Permittees may prioritize potential problem areas for detection and investigation efforts under this program component, using the methodology defined in this model program.

Illicit Discharge Elimination

The goal of this component is to detect and eliminate illicit discharges from entering the storm drain system to reduce pollutants from such discharge to the maximum extent practicable. The objectives are to:

- Investigate, contain, and clean up incidental spills reported by the public, other agencies or observed by Permittee field staff during the course of their normal daily activities,
- Eliminate through voluntary termination or enforcement action prohibited non-stormwater discharges to the storm drain system, and
- Investigate to determine the nature and source of the discharge and eliminate through voluntary termination or enforcement action suspected prohibited non-storm discharges in the storm drain system.

BMPs for Designated Non-Stormwater Discharges

The Permit required the City of Los Angeles to conduct a study on pollutants entering storm drains from street and sidewalk washing operation to:

(i.) Characterize discharges from municipal street washing and sidewalk washing

(ii.) Assess the impacts of such activities and

(iii.) Recommend appropriate BMPs to control any adverse impacts.

The City of Los Angeles completed the study and prepared a report entitled, "A Study of Pollutants Entering Storm Drains from Street and Sidewalk Washing Operations in Los Angeles, California." The Regional Board approved recommended BMPs for street and sidewalk washing activities.

Public Reporting

The goal of this component is to promote, publicize and facilitate public reporting of illicit discharges and illicit disposal practices. Permittees must implement a system for complainant documentation and a follow up response for calls received from the public regarding potential illicit discharges and illicit disposal practices.

Reporting Hazardous Substances Entering the Storm Drain System

The goal of this component is to facilitate appropriate reporting of hazardous substances entering the storm drain system as a result of an illicit discharge. The Permittees must implement a reporting program to document quantities of hazardous substances entering the storm drain system.

ES.3 MODEL DEVELOPMENT PLANNING PROGRAM

"Development" Projects encompass those projects that are subject to a planning and permitting review process by a Permittee. A "Development" Project may be new development, redevelopment, renovation, remodeling, rehabilitation, infill, or other terms that may be used in a Permittee's ordinances and/or building code. The planning and design of public facilities have similar requirements described in the Model Public Agency Activities Program, another component of the Countywide Storm Water Management Plan.

The fundamental concept of this program component is to identify development that may significantly impact stormwater quality and to then to include permanent BMPs in the project's design. Development projects that may significantly impact stormwater quality are Planning "Priority" Projects. Other projects are deemed "Exempt" from these program requirements.

Each Permittee will implement a development-planning program that includes the following components:

- System for determining the appropriate category (Priority or Exempt) for a Development Project;
- Recommended list of BMPs to be considered, and as appropriate, implemented for Development Projects;
- Process to ensure that Planning Priority Projects incorporate the Standard Urban Storm Water Mitigation Plans using the recommended list of BMPs;
- Guidelines for California Environmental Quality Act (CEQA) compliance;
- Guidelines for the revision of General Plan elements to include watershed and stormwater quality management considerations, when General Plan elements are being significantly rewritten; and
- Developer information program that provides general guidance on the Permittee's development planning program, and specific guidance on BMP selection and the Standard Urban Storm Water Mitigation Plans.

A checklist and flowchart are included in the Model Development Planning Program to assist Permittees in determining whether a project is Priority or Exempt.

ES.4 MODEL DEVELOPMENT CONSTRUCTION PROGRAM

Permittees must also implement a program to manage stormwater and urban runoff associated with construction activities within their jurisdictions. The Model Development Construction Program addresses:

- Development and implementation of construction site BMPs;
- Implementation of procedures to verify Notice of Intent (NOI) filing with the State Water Resources Control Board and completion of stormwater pollution prevention plan (SWPPP) for projects subject to the California General Construction Permit, and
- Implementation of a construction inspection program.

Construction Site BMPs

A Development Construction Project is defined as projects for which site activities such as clearing, grading, excavation, road construction, structure construction, or structure demolition results in the disturbance of soil.

In certain situations, where impact to stormwater quality is a greater threat, Development Construction Projects should be given greater scrutiny to ensure that minimum requirements are met. These projects which present a greater threat to water quality, *but are not subject to the California General Permit for Storm Water Discharges Associated with Construction Activity*[1] are called Construction Priority Projects.

Unless specifically exempted, all Development Construction Projects will be required to implement BMPs to meet minimum water quality protection requirements. As a condition for issuing a grading or building permit, applicants for covered Development Construction Projects shall be required to certify that they understand and will comply with the minimum BMPs requirements related to construction site runoff.

Projects Subject to the General Construction Permit

Developers of construction sites subject to the General Construction Permit are required to prepare and implement a Storm Water Pollution Prevention Plan (state SWPPP). Before issuing building or grading permits, Permittees will require applicants to demonstrate that a Notice of Intent (NOI) has been filed with the State Water Resources Control Board (SWRCB), and that a state SWPPP has been prepared for projects subject to the General Construction Permit.

Requirements for Construction Priority Projects

Prior to receiving a building or grading permit, applicants for Construction Priority Projects must prepare a local stormwater pollution prevention plan (local SWPPP) covering construction materials and waste

[1] A project is subject to the General Construction Permit if it disturbs 5 acres or more of soil, or the project results in the disturbance of less than 5 acres but is part of a larger common plan of development or sale that exceeds 5 acres.

management control, and must certify that they will implement the local SWPPP year-round. Applicants for Construction Priority projects must also prepare and implement a Wet Weather Erosion Control Plan (WWECP) if the project will leave soil disturbed during the rainy season (November 1 through April 15).

Site Inspection and Enforcement

Each Permittee will implement site inspection procedures to assess whether the minimum requirements for Development Construction Projects are being achieved and appropriate BMPs are being implemented. Site inspections will also determine if local SWPPPs are being implemented at projects where they apply. Developers and/or contractors will also be required to conduct and document self-inspections of their construction site. Each Permittee will also develop and implement enforcement procedures to require that corrective actions be undertaken when the requirements are not met.

ES.5 MODEL PUBLIC AGENCY ACTIVITIES PROGRAM

Part IV.C of the Permit contains requirements specifically for public agency activities and facilities. Components of the Public Agency Activities Model Program describe measures to be taken by Permittees to reduce stormwater impacts from public agency activities and facilities such as sanitary sewer systems, public construction activities, vehicle maintenance and material storage facilities, recreation facilities, stormwater drainage systems, streets and roads, etc.

Sewage Systems Operations

This program component is applicable to all Permittees who own and operate a sewage collection system. Although sewage systems themselves are not a regular source of stormwater pollution, raw sewage contains pollutants that can pose a serious threat to both human health and the quality of receiving waters if they enter the storm drain system through incidents such as spills, leaks, or overflows. The goal of this program is to reduce the impact of Permittee-owned sewage system operations on stormwater quality.

The objectives of this program component are to:

- Keep any sewage overflows or leaks from entering the storm drain system or receiving waters.
- Identify and repair sewage system blockages, exfiltrations, overflows and implement procedures for investigating the causes.
- Notify public health authorities in cases where threats to public health exist.

Public Construction Activities Management

This program component is applicable to all Permittees who construct or contract to construct public facilities, including infrastructure. The program component requires the use of temporary best management practices (BMPs) to reduce the discharge of pollutants from public construction sites. In addition, public agency facilities with the potential for having a significant effect on stormwater quality when completed by virtue of their size, nature of on-site activities, or other factors must incorporate permanent BMPs in the planning and design of the project.

The objectives of this program component are to:

- Select and incorporate appropriate construction control measures for stormwater quality management from construction sites.
- Conduct and inspection program, including enforcement procedures as necessary, to verify that the construction control measures are implemented and performed effectively throughout the construction period.

Vehicle Maintenance / Material Storage Facilities Management

This program component is applicable to all Permittees who own and operate vehicle maintenance or materials storage facilities. Activities at these facilities may generate waste, spills and leaks that could potentially reach the storm drain system and receiving waters. The goal of this program is to make stormwater quality a consideration when conducting activities at municipal facilities.

The objectives of this program component are to:

- Identify and evaluate sources of pollutants from public vehicle maintenance/material storage facilities that may affect the quality of stormwater discharge from the facility.
- Identify and implement site-specific best management practices to reduce or prevent pollutants in stormwater discharges.

Landscape and Recreational Facilities Management

This program component is applicable to all Permittees who own and operate recreational facilities. Maintenance practices at parks and recreation facilities generally include fertilizer and pesticide applications, vegetation maintenance and disposal, swimming pool chemical maintenance and draining, and trash and debris management. All of these activities have the potential to contribute pollutants to the storm drain system. If improperly managed, potential pollutants can be transported in runoff (stormwater and non-stormwater discharges) to the storm drain system and subsequently to receiving waters. The goal of the program for landscape and recreational facilities management is to make the stormwater quality a consideration when conducting operation and maintenance activities.

The objectives of this program component are to:

- Minimize the discharge of pesticides, herbicides and fertilizers to the storm drain system and receiving waters.
- Prevent the disposal of landscape waste into the storm drain system.
- Minimize the trash, debris and other pollutants from entering Permitee-owned recreational water bodies.
- Discharge municipal swimming pool water in a manner that will not contribute pollutants to receiving waters.

Storm Drain Operation and Management

The storm drain system functions primarily to collect and convey surface runoff to receiving waters during storms in order to prevent flooding. A common municipal activity includes the maintenance of the storm drain system to maintain hydraulic function as intended during storms. The goal of this program is to reduce the impact of storm drain operation and maintenance activities on stormwater quality.

The objectives of this program component are to:

- Inspect and clean catch basins annually and keep appropriate records.
- Remove trash and debris annually from open channels and properly dispose of these materials to prevent them from being washed to receiving waters.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained and cleaned up, or eliminated.
- Review maintenance activities to verify that they minimize the amount of pollutants discharged to receiving waters.

Streets and Roads Maintenance

Streets and roads may collect litter and debris from nearby activities, as well as from vehicular traffic. During the course of routine maintenance waste materials are often generated. The goal of this component is to reduce the impact of Permittee street and road operations and maintenance on stormwater quality.

The objectives of this program component are to:

- Sweep curbed streets to reduce the discharge of pollutants associated with activities occurring in street and road rights-of-way.
- Minimize the discharge of pollutants associated with the maintenance of streets and roads.

Parking Facilities Management

Permittees who own parking lots with more than 25 parking spaces located in areas with potential exposure to stormwater must have a parking facilities management plan. The goal of this component is to reduce the impact of these parking facilities on the quality of stormwater discharges and receiving waters. The object of this program component is to remove debris from parking facilities to reduce the amount of material that comes into contact with stormwater.

Public Industrial Activities

Industrial activities, whether private or public, have the potential to discharge pollutants to the storm drain system. Many industrial facilities are subject to the California General Industrial Activities Storm Water Permit (General Industrial Permit) for control of stormwater pollution. The goal of the General Industrial Permit is to reduce the impact of industrial facilities on stormwater quality. This provision of the Permit may procedurally simplify and reduce the cost of Permittees' compliance for their industrial facilities (Phase 1) by providing the option to obtain coverage under the Permit in lieu of the General Industrial Permit.

The objective of this program component is to comply with all requirements and conditions contained in the General Industrial Permit.

Emergency Procedures

Each Permittee must consider the impact of discharges to the storm drain system during emergency repairs of essential public services and infrastructure, and response to natural disasters. The goal is to reduce the impact of emergency response activities on receiving waters, to the extent possible, without compromising public health and safety.

The objectives of this program component are to:

- Recognize that public health and safety are the highest priority when conducting emergency response activities.
- Protect surface water quality by incorporating appropriate BMPs into emergency response activities to the extent possible.

ES.6 Model Public Information and Participation Program

The purpose of the Stormwater/Urban Runoff Public Information and Participation Program (Five-Year Public Education Plan) is to provide the framework for a comprehensive educational stormwater and urban runoff outreach approach that will reach as many Los Angeles County residents as possible. The Five-Year Public Education Plan is research-based, broad-based with overarching themes, flexible, adaptable, and simplistic in order to produce behavior change.

Groups of residents differ significantly in terms of the amount of pollution they contribute, their demographics and lifestyle, attitudes related to stormwater pollution, and probability of changing their behaviors. By better understanding the general County resident population, resources may be directed to those segments of the population that pose the greatest threat to stormwater quality and who represent the greatest opportunity to respond to a public education campaign.

Some key strategies developed for successful implementation of the education model include:

- Creating Overarching Approach – A unified overall public education approach sets a "tone" for the program and once established helps target audiences identify the program with its pollution prevention message.
- Building Partnerships – Integrate County and city programs, cooperate with environmental groups, co-Permittees, and other public and business groups to disseminate public education program materials and special events information.
- Unify Pollution Prevention Efforts – Link all pollution prevention efforts (such as recycling, used oil and household waste) under a single agenda rather than under multiple prevention splinter programs.

- Develop "How To" Instructions – Provide specific guidelines supported by simple easy to remember tasks and concise "how to" instructions for pollution prevention actions that residents and business may incorporate into their everyday routines.
- Monitoring and Evaluation System – Establish an evaluation system to measure program effectiveness by assessing the number of people who show increased awareness, intent and/or actions in reducing stormwater pollution. Re-evaluate and enhance program components on continually based on program effectiveness.
- Multiple Audience Impact – Develop program materials and activities that may be implemented and have impact on more than one audience at a time.

The Model Public Information and Participation Program also includes reporting requirements for Permittees to support the Annual Program Report to the Regional Board. These reporting requirements include the documentation of information such as:

- Number of media outlets contacted to run public service announcements (PSAs),
- Dollar value and number of media buys.
- Audience of the media PSAs,
- List of local businesses enlisted to place non-traditional advertising (point-of-purchase displays, product neck hangers, etc.)
- Numbers and types of stormwater pollution prevention materials distributed, and
- Whether there is an increase in the number of illicit discharge reports to the Permittee.

The municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit (Permit) issued to Los Angeles County and 85 cities by the Los Angeles Regional Water Quality Control Board on July 15, 1996 contains a requirement for Permittees to develop and implement an Industrial/Commercial Educational Program. This document provides guidance that Permittees can follow to implement their own Industrial/Commercial Educational Program in compliance with the Permit.

Part 2.V.B of the Permit requires Permittees to conduct specific activities related to industrial/commercial education, as shown in Table 1. They must collect information on industrial/commercial facilities, conduct educational site visits at those facilities, incorporate information from an approved BMP list into their outreach measures, and report quarterly on the facilities visited. This document is not a model program, but is provided as guidance to assist Permittees with the implementation of their programs. Only the list of BMPs, discussed later in Section 3.2, will be submitted to, reviewed and approved by the Regional Board staff (Executive Officer) and can be changed by approval of the Executive Officer.

Table 1
Permit Requirements -Industrial/Commercial Educational Program

Permit Section	Requirement	Compliance Date
2.V.B.1.b	Collect information on industrial/commercial facilities within jurisdiction and submit to Principal Permittee.	Must complete by May 1998 for industrial, motor vehicle, gas stations, and restaurants. (Not later than one year after Principal Permittee provides the database format to the Permittees.) For additional SIC groups: Not later than one year after Watershed Management Committee (WMC) designation.
2.V.B.3.a	Begin to implement an industrial/commercial facility educational site visit program.	Upon Regional Board approval of BMP checklist, and in accordance with the applicable schedule.
2.V.B.3.b	Distribute and discuss applicable BMPs during educational site visit.	Upon Regional Board approval of BMP checklist.
2.V.B.3.c	Submit list of facilities visited to the Principal Permittee.	Quarterly

The requirement to implement an Industrial/Commercial Educational Program is based on the two primary objectives listed below, set forth in the Federal Clean Water Act amendments of 1987, which established the framework for regulating stormwater discharges from municipal, industrial and construction activities under the NPDES system:

- Effectively prohibit non-stormwater discharges (unless NPDES permitted, specifically exempted, or proven not to be a significant source of pollutants).
- Reduce the discharge of pollutants from storm drainage systems to the maximum extent practicable (MEP).

To meet this statutory objective, the federal regulatory requirements for municipal Permittees include implementing a comprehensive program to control pollutants in stormwater discharges to municipal systems from certain industrial facilities.

To meet this statutory objective, the federal regulatory requirements for municipal Permittees include implementing a comprehensive program to control pollutants in stormwater discharges to municipal systems from certain industrial facilities.

The Permit names specific groups of facilities that must be included in the educational site visit program. These groups of facilities include:

- All industrial groups regulated under Phase 1 of the federal stormwater program (Phase 1 facilities), discussed in Section 2.1.
- Motor vehicle repair shops, motor vehicle body shops, motor vehicle parts and accessories facilities, gas stations, and restaurants, discussed in Section 2.2.
- Additional groups of industrial/commercial facilities as specified by the WMCs, discussed in Section 2.3.

2.1 PHASE 1 FACILITIES

Facilities listed in the Permit are described in the federal regulations under the following 10 categories:

i. Facilities subject to stormwater effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR Subchapter N)

ii. Manufacturing facilities

iii. Mining and oil and gas facilities

iv. Hazardous waste treatment, storage, or disposal facilities

v. Landfills, land application sites, and open dumps that receive industrial waste

vi. Recycling facilities

vii. Steam electric generating facilities

viii. Transportation facilities

ix. Sewage treatment plants

xi. Certain facilities if materials are exposed to stormwater

In California, these facilities are regulated under the California General Industrial Stormwater Permit (General Industrial Permit). The State Water Resources Control Board and the nine Regional Water Quality Control Boards are responsible for enforcing the General Industrial Permit.

2.2 OTHER SPECIFIC FACILITIES

In addition to Phase 1 facilities, the Permit names three groups of specific facilities:

- Vehicle repair shops, vehicle body shops, vehicle parts and accessories
- Gasoline stations
- Restaurants

2.3 OTHER FACILITIES DESIGNATED BY THE WMC

Each WMC may identify additional SIC industrial/commercial groups that will receive educational site visits from Permittees in the watershed. Criteria the WMCs will use are listed in Part 2.1.C.3.g of the Permit.

Each Permittee will implement an Industrial/Commercial Educational Program, which includes the following components:

- Source Identification
- Source Control Measures
- Educational Site Visits

A brief summary of the program components follows. A Permittee may petition the Executive Officer to substitute this program with an alternative, equally effective industrial/commercial educational program.

3.1 SOURCE IDENTIFICATION

Permittees must collect information to identify industrial/commercial facilities within the local jurisdiction. The procedures include:

- Collect information on all industrial/commercial facilities targeted in the Permit, using the database format developed by the Principal Permittee.
- Submit initial required information to the Principal Permittee by May 1998.

Guidance to collect the facility information and the database format that must be used are included as Appendix A.

3.2 SOURCE CONTROL MEASURES

Permittees must incorporate the Best Management Practices (BMPs) information on effective stormwater pollution control, as approved by the Regional Board, into educational site visit outreach measures. The lists of BMPs and guidance to using them are included as Appendix B.

3.3 EDUCATIONAL SITE VISITS

Permittees must conduct industrial/commercial educational site visits at all facilities identified in the Permit. The purpose of the site visits will be solely educational. The procedures include:

- Conduct educational site visits at each facility at the frequency specified in Table 2.
- Consult with a representative of the facility to explain applicable stormwater regulations.
- Distribute and discuss applicable BMP and educational materials.
- Where applicable, notify industrial facilities of requirements under the General Industrial Permit.
- Follow up with facilities, as necessary, to provide advice in complying with local legal authority.
- Submit a list of facilities visited each quarter to the Principal Permittee.

Guidance to conduct the site visits is included as Appendix C.

Table 2
Schedule of Educational Site Visits

Facilities	Site Visit Frequency (Number of contacts / time period)
Industrial groups i through ix regulated under Phase I of the federal stormwater program.	1 / 24 months At least twice in the five-year permit term
Industrial group xi regulated under Phase I of the federal stormwater program because materials are exposed to stormwater [1].	1 / 5 years
All motor vehicle repair shops, motor vehicle body shops, motor vehicle parts and accessories facilities, gas stations, and restaurants.	1 / 24 months At least twice in the five-year permit term
Facilities selected by WMCs	1 / 36 months

(1) A phone call, mailed out educational materials, or other method to inform facilities of General Industrial Permit requirements may be used in lieu of a site visit.

Appendix A
Source Identification Guidance

Appendix A
Source Identification Guidance

The Permit requires each Permittee to develop information on all industrial/commercial facilities targeted by the Permit, and listed in Table A-1, that are within their jurisdiction. Note that these are industrial facilities subject to the General Industrial Permit, as well as other selected commercial facilities. The list includes certain categories of facilities such as wastewater treatment plants, landfills, large transportation yards, and airports that are subject to the General Industrial Permit and may be publicly-owned by Permittees, but does *not* include public facilities such as municipal maintenance yards that may contain industrial types of activity. Permittee-owned facilities are not subject to the Industrial/Commercial Educational Program. Requirements for these public facilities are discussed in a separate model program document titled *Public Agency Activities*.

Each Permittee must collect the initial information on these facilities and provide the data to the Principal Permittee (County) by May 1998. At a minimum, Permittees must collect the information required by the database format described in Section A.1. This database format was provided to all Permittees on disk for ease of use and reporting. The County compiled the information into a single database in June 1998. The database will serve as a reference resource for the public, business, industry, local government, the Regional Board, and other public agencies. Permittees will conduct educational site visits of all of these facilities.

Many Permittees may already have a database established, or have much of this initial information compiled from various department programs. Resources for identifying the facilities include:

- the State Water Resources Control Board (SWRCB) database of businesses covered by the General Industrial Permit
- hazardous materials inventories maintained by the fire or environmental health departments
- lists of businesses subject to the local wastewater utility's industrial pretreatment program
- city business license records
- commercially available business listings (e.g., the Dun & Bradstreet database)
- the Yellow Pages

An important parameter to help determine if a facility is subject to this program is its Standard Industrial Classification (SIC) code. For this reason, Table A-1 includes the SIC codes for all facilities named in this Permit. Guidance to help identify facilities subject to the General Industrial Permit is provided in Section A.2.

Table A-1
SIC Codes of Industrial/Commercial Facilities Targeted by the Permit

Categories	SIC Codes (exceptions in parentheses)	Industry/Commercial Types
I. 40 CFR Subchapter N	Included below.	Included below.
ii. Manufacturing	24 (2434) 26 (265 & 267) 28 (283) 29 311 32 (323) 33 3441 373	Lumber & wood Paper Chemicals Petroleum refining Leather Stone, clay, glass Primary metal Fabricated structural. metal Ship & boat
iii. Mining/Oil	10 12 13 14	Metal Coal Oil & gas Nonmetallic minerals
iv. Hazardous Waste TSD	4953	Refuse systems
v. Landfills, etc.	4953	Refuse systems
vi. Recycling	5015 5093	Motor vehicle parts, used Scrap & waste
vii. Steam Electric Generation	4911	Steam electric generation
viii. Transportation	40 41 42 (4221-25) 43 5171 44 45	Railroad Local transit Motor freight USPS Petroleum bulk stations Water Air
ix. Sewage Treatment	4952	Sewage treatment
xi. Other Manufacturing Exposed to Stormwater	20 21 22 23 2434 25 265 267 27 283 285 30 31 (311) 323 34 (3441) 35 36 37 (373) 38 39 4221-25	Food Tobacco Textile Apparel Wood kitchen cabinet Furniture Paperboard Converted paper/board Printing/publishing Drugs Paints, varnishes, lacquers Rubber Leather Glass Fabricated metal Indust./comm. machinery Electronic Transportation Instruments, photo, med. Misc. manufacturing Warehousing

Categories	SIC Codes (exceptions in parentheses)	Industry/Commercial Types
Vehicle repair shops, vehicle body shops, vehicle parts and accessories	7532 7533 7534 7536 7537 7538 7539 5013 5014	Top, body, upholstery repair and paint Auto exhaust system repair Tire retreading and repair Auto glass replacement Auto transmission repair General auto repair Auto repair, not elsewhere classified Motor vehicle supplies and new parts Tires and tubes
Gasoline stations	5541	Gasoline service stations
Restaurants	5812	Eating places

A.1 DATABASE FORMAT

A.1.1 Overview of the Database

To facilitate the collection, aggregation and reporting of the industrial and commercial facilities within each jurisdiction, the following database content is recommended. The database is divided into two sections: "Required" data and "optional" data. Each Permittee will collect the required information and forward to the County a digital copy of the updated database on a quarterly basis. The optional information as shown in this database design *may* be collected as appropriate by each Permittee, but is *not* required in the quarterly submissions. In addition, any other information collected by each Permittee is not required to be submitted.

Submissions to the County shall be in electronic format. Permittees will utilize the database format and application provided by the County. Special arrangements will be made for those Permittees who can not utilize the application provided by the County due to hardware or software complications. The following sections describe the required and optional database contents for the industrial/commercial educational program.

A.1.2 Required Information

The following information will be collected and forwarded to the County on a quarterly basis as required by the Permit.

Required Database Information

1. Name of facility
2. Facility street address
3. City
4. 5 digit zip code
5. Watershed Management Area
6. Primary SIC code

7. NPDES stormwater permit coverage status, if applicable
8. Permittee responsible for visiting facility
9. Date of site visit

A more detailed database design including fields, field description and format is included in Table A-2. It is intended that the County-supplied format and application will provide some level of data validation during entry and updating. This will provide better overall data consistency and facilitate quicker data aggregation for reporting to the Regional Water Quality Control Board.

Table A-2
Required Database Fields

Field	Field Name	Field Description	Format
1	FACILITY[1]	Name of facility	C(32)
2	STR_NUM	Street number of facility address	I(5)
3	STR_FRAC	Street number fraction (if any)	F(3.2)
4	STR_PREF	Street direction prefix (if any)	C(1)
5	STR_NAME	Street name	C(24)
6	STR_SUFF	Street type suffix	C(3)
7	UNIT_NUM	Unit or suite number of facility	C(5)
8	CITY	City	C(24)
9	ZIP	5 digit zip code	I(5)
10	WMA[2]	Watershed Management Area	I(1)
11	SIC	Primary SIC	I(4)
12	NOI_FLAG[3]	Permit coverage	C(1)
13	PERMTE	Permittee responsible for facility	C(24)
14	VIS_DATE	Date of site visit	DATE

Notes
(1) FACILITY is designated to represent the "Doing Business As" name
(2) WMA - Watershed Management Area - valid entries
1 = Malibu Creek/Rural Santa Monica Bay
2 = Ballona Creek/Urban Santa Monica Bay
3 = Los Angeles River
4 = Dominquez Creek/Los Angeles Harbor
5 = San Gabriel River
6 = Santa Clara River
(3) NOI_FLAG - Permit Coverage Field - valid entries = Yes, No, Unknown, or Individual Stormwater Permit

A.1.3 Optional Information

The following information is optional and is *not* required to be forwarded to the County or reported to the Regional Board. It is provided only to assist those Permittees who wish to track additional information for their own internal program use. Permittees may have the need or desire to add their own additional data pertinent to the educational site visits. Each is encouraged to track whatever information is important for their purposes. A more detailed database design, including fields, field description and format, is included in Table A-3.

Optional Database Information

1. Contact person at facility
2. Phone number for contact person
3. Mailing address for facility (if different)
4. Mailing address city
5. Mailing address 5 digit zip code
6. Secondary SIC
7. Name of person visiting facility
8. Date for next facility visit
9. Reason for next visit
10. Comments field

Table A-3
Optional Database Fields

Field	Field Name	Field Description	Format
15	FN_CONT	First name of contact person	C(10)
16	LN_CONT	Last name of contact person	C(15)
17	PH_NUM	Phone number for contact person	I(10)
18	MST_NUM	Mailing address street number	I(5)
19	MST_FRAC	Mailing address street number fraction	F(3.2)
20	MST_PREF	Mailing street direction prefix (if any)	C(1)
21	MST_NAM	Mailing address street name	C(24)
22	MST_SUFF	Mailing address street type suffix	C(3)
23	MUN_NUM	Mailing address unit or suite no.	C(5)
24	MCITY	Mailing address city	C(24)
25	MZIP	Mailing address 5 digit zip code	I(5)
26	SIC2[1]	Secondary SIC	I(4)
27	SIC3[1]	Additional SIC	I(4)
26	FN_INSP	First name of person visiting facility	C(10)
27	LN_INSP	Last name of person visiting facility	C(15)
28	NXT_DATE[2]	Date for next facility visit	DATE
29	NXT_REAS[3]	Reason for next visit	I(1)
30	VST_FLAG[4]	Flag to indicate site visits complete	C(1)
31	COMMNTS	Comments field	LONG

Notes

(1) SIC2, SIC3: secondary and additional SIC to indicate additional activities occur onsite

(2) NXT-DATE: date for next facility visit will be set based on reason for next site visit and will be checked against the permit required frequency depending on facility. Valid entries will be set to: 3,6,9,12,18,24, or 36 months or other user specified date.

(3) NXT_REASON: reason for next visit - valid entries will be set to a predefined list of "other," with "other□ " being described in the comments field. Valid entries are: 1 = Permit defined frequency; 2 = Additional technical help requested; 3 = Contact person not in attendance; 4 = Other

(4) +VST_FLAG flag to indicate site visits complete - this field will be set automatically when the required number of visits as defined in the permit have been accomplished for the facility.

A.2 GUIDANCE TO IDENTIFY INDUSTRIAL FACILITIES

In April 1992 the American Public Works Association (APWA) Storm Water Task Force prepared an overview of the NPDES General Permit for Storm Water Discharges Associated with Industrial Activity. The overview was developed to assist businesses, municipalities and other interested parties in understanding the permit and in identifying the facilities subject to the regulations.

The overview prepared by APWA Storm Water Task Force can be found in Appendix B of the *California Storm Water Best Management Practice Handbooks. Industrial/Commercial* (1993). Copies of the California Storm Water Best Management Practice Handbooks can be purchased at:

Los Angeles County Department of Public Works
Cashiers Office
900 S. Fremont Avenue
Alhambra, California 91803
Telephone No.: 626.458.6959

Appendix B
BMP Lists For Industrial/Commercial Site Visits

Appendix B
BMP Lists For Industrial/Commercial Site Visits

The Permit requires the Principal Permittee, in consultation with the Permittees, to develop BMP lists for each group of facilities that requires educational site visits. These groups of facilities include:

- All industrial groups regulated under Phase 1 of the Federal stormwater program (Phase 1 Facilities)
- Motor vehicle repair shops, motor vehicle body shops, motor vehicle parts and accessories facilities, gas stations, and restaurants (Other Specific Facilities).

The BMPs must:

- Address multiple pollutants.
- Initially focus on pollutant source minimization, education, good housekeeping, and site design alternatives.
- Target source areas and activities with the highest potential to generate substantial pollutant loads.

The BMP lists are included as Appendix B1 (Phase 1 Facilities) and Appendix B2 (Other Specific Facilities). These BMP lists must be incorporated into outreach measures conducted during the educational site visits. This may include using them as fact sheets to hand out to appropriate facilities, incorporating their information into educational materials, or using them to increase the knowledge of staff who will be conducting the site visits.

There is no expectation on the part of the Regional Board, nor does the Permit require, that such lists be completed by a Permittee during the course of conducting an educational site visit at a facility. In addition, there is no expectation on the part of the Regional Board that these lists be utilized by Permittees at their own municipal facilities. BMPs appropriate for municipal facilities are described in the Model Public Agency Activities Program. Permittees must comply with the requirements of that model program at their own municipal facilities.

The BMP lists are *not* required to be implemented by all facilities but are only *suggested* BMPs. They are provided as guidance to help facility owners develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Some facilities may be subject to other state or federal environmental protection programs such as the Resource Conservation and Recovery Act (RCRA) and the Underground Storage Tank (UST) program. Implementing the BMPs suggested in this document does not replace a facility's requirement to comply with these other programs.

Generally, source controls will be easier and less costly for facilities to implement in the near term. These types of controls include good housekeeping activities, employee training, and methods to reduce the source of pollutants by substituting products, reducing their use, and using/storing them inside. Structural controls may need to be carefully considered to ensure they are appropriate and cost-effective. For some activities, however, such as land disturbing activities, structural controls may be the primary solution.

B.1 PHASE 1 FACILITIES

In California, the *General Industrial Storm Water Permit* (General Industrial Permit) is the stormwater regulatory document for industrial facilities. On September 29, 1995, USEPA issued the *NPDES Storm*

Water Multi-Sector General Permit for Industrial Activities (Multi-Sector Permit) to serve as a general permit for industrial facilities in most other areas of the United States. The Multi-Sector Permit provides lists of typical activities, pollutant sources, pollutants, and suggested BMPs for industrial facilities, breaking them out into 29 "sectors" of industrial activity. The lists of BMPs in the Multi-Sector Permit were developed following an extensive survey of facilities, a review of existing Stormwater Pollution Prevention Plans, and additional discussion and review. With this in rnind, the list of BMPs in Appendix B1 was taken directly from the Multi-Sector Permit. The BMPs were edited slightly to put them in a common format. Care was taken to avoid interpreting the BMP, adding to or deleting from its intent. For additional guidance on pollutant sources, special considerations and references, please see the original Multi-Sector Permit.

B.2 OTHER SPECIFIC FACILITIES

The BMP lists for these facilities are arranged into three sections: Vehicle Service Facilities, Gasoline Stations, and Restaurants. The BMP lists represent a compilation of activities developed by other stormwater management programs and wastewater agencies. The basis for the vehicle service facility BMPs is the document *Your Shop Can Make a Difference! What vehicle service shops can do to protect water quality in the Bay and Delta* (Bay Area Stormwater Management Agencies Association and Bay Area Dischargers Association, 1995). The Gasoline Station BMPs are based on the document *Retail Gasoline Outlet BMPs* (California Storm Water Quality Task Force, March 1997). These BMPs are very detailed due to extensive refinement over several years by state task forces and committees that included industry representatives. The bases for the restaurant BMPs are a wide range of documents created throughout Los Angeles County.

B.3 BMP LIST INDEX

Table B-1 is an index to all BMP lists, their categories and SIC codes.

Table B-1
Index of BMP Lists for Industrial/Commercial Facilities

EPA Sectors	SIC Codes (exceptions in parentheses)	Industry Types/Sector Title
A	24 (2434)	Timber Products Facilities
B	26	Paper and Allied Products Mfg Facilities
C	28 (283)	Chemicals and Allied Products Mfg Facilities
D	29	Asphalt Paving and Roofing Materials Manufacturers and Lubricant Manufacturers
E	32	Glass, Clay, Concrete, and Gypsum Product Facilities
F	33	Primary Metals Facilities
G	10	Metal Mining Facilities
H	12	Coal Mines and Coal Mining-Related Facilities
I	13	Oil & Gas Extraction Facilities
J	14	Mineral Mining and Processing Facilities
K	4953	Hazardous Waste Treatment, Storage or Disposal Facilities
L	4953	Landfills and Land Application Sites
M	5015	Automobile Salvage Yards
N	5093	Scrap & Waste Recycling

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EPA Sectors	SIC Codes (exceptions in parentheses)	Industry Types/Sector Title
O	4911	Steam Electric Power Generating Facilities
P	40 41 42 43 5171	Vehicle and Equipment Maintenance Areas at Land Transportation Facilities
Q	44	Vehicle and Equipment Maintenance Areas at Water Transportation Facilities
R	373	Ship & Boat Building or Repairing Yards
S	45	Vehicle and Equipment Maintenance and Deicing Areas at Air Transportation Facilities
T	4952	Treatment Works
U	20 21	Food and Kindred Products Facilities
V	22 23	Textile Mills, Apparel, and Other Fabric Product Manufacturing Facilities
W	2434 25	Wood and Metal Furniture and Fixture Manufacturing Facilities
X	27	Printing and Publishing Facilities
Y	30 39	Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries
Z	31	Leather Tanning and Finishing Facilities
AA	34	Fabricated Metal Products Industry
AB	35 (357) 37 (373)	Facilities that Manufacture Transportation Equip., Industrial, or Commercial Machinery
AC	357 38 36	Manufacturers of Electronic and Electrical Equipment
SIC Codes (exceptions in parentheses)		**Commercial Types**
5013 5014 5541 7532-7534 7536-7539		Vehicle Service Facilities
5812		Restaurants

Appendix B1
BMPs for Phase 1 Facilities

Timber Products Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Log, Lumber, and Other Wood Product Storage Areas

- ❑ Divert storm water around storage areas with ditches, swales and/or berms.
- ❑ Locate storage areas on stable, well-drained soils with slopes of 2-5 percent.
- ❑ Line storage areas with crushed rock or gravel or porous pavement to promote infiltration, minimize discharge and provide sediment and erosion control.
- ❑ Stack materials to minimize surface areas of materials exposed to precipitation.
- ❑ Practice good housekeeping measures such as frequent removal of debris.
- ❑ Provide collection and treatment of runoff with containment basins, sedimentation ponds and infiltration basins.
- ❑ Use ponds for collection, containment and recycle for log spraying operations.
- ❑ Use silt fence and rip rap check dams in drainage ways.

Residue Storage Areas

- ❑ Locate stored residues away from drainage pathways and surface waters.
- ❑ Avoid contamination of residues with oil, solvents, chemically treated wood, trash, etc.
- ❑ Limit storage time of residues to prevent degradation and generation of leachates.
- ❑ Divert storm water around residue storage areas with ditches, swales and/or berms.
- ❑ Assemble piles to minimize surface areas exposed to precipitation.
- ❑ Spray surfaces to reduce windblown dust and residue particles.
- ❑ Place materials on raised pads of compacted earth, clay, shale, or stone to collect and drain runoff.
- ❑ Cover and/or enclose stored residues to prevent contact with precipitation using silos, van trailers, shed, roofs, buildings or tarps.
- ❑ Limit slopes of storage areas to minimize velocities of runoff which may transport residues.
- ❑ Provide collection and treatment of runoff with containment basins, sedimentation ponds and infiltration basins.
- ❑ Use silt fence and rip rap check dams in drainage ways.

Loading and Unloading and Material Handling Areas

- ❑ Provide diversion berms and dikes to limit run on.
- ❑ Cover loading and unloading areas.
- ❑ Enclose material handling systems for wood wastes.
- ❑ Cover materials entering and leaving areas.
- ❑ Provide good housekeeping measures to limit debris and to provide dust control.
- ❑ Provide paved areas to enable easy collection of spilled materials.

Chemical Storage Areas

- ❑ Provide secondary containment around chemical storage areas.
- ❑ Inventory of fluids to identify leakage.
- ❑ Locate storage areas away from high traffic areas and surface waters.
- ❑ Develop spill prevention, containment and countermeasure (SPCC) plans and implement.
- ❑ Cover and/or enclose chemical storage areas.
- ❑ Provide drip pads to allow for recycling of spills and leaks.

Wood Surface Protection and Preserving Activities

- ❑ Extend drip time in process areas before moving to storage areas.
- ❑ Pave and berm areas used by equipment that has come in contact with treatment chemicals.
- ❑ Dedicate equipment that is used for treatment activities to that specific purpose only to prevent the tracking of treatment chemicals to other areas on the site.
- ❑ Locate treatment chemical loading and unloading areas away from high traffic areas where tracking of the chemical may occur.
- ❑ Provide drip pads under conveyance equipment from treatment process areas.
- ❑ Provide frequent visual inspections of treatment chemical loading and unloading areas during and after activities occur to identify any spills or leaks needing clean-up.
- ❑ Cover and/or enclose treatment areas.
- ❑ Provide containment in treated wood storage areas.
- ❑ Cover storage areas to prevent contact of treated wood products with precipitation.
- ❑ Elevate stored, treated wood products to prevent contact with run on/runoff.

Paper and Allied Products Manufacturing Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Outdoor Loading and Unloading

- ❑ Confine loading/unloading activities to a designated response and control area.
- ❑ Avoid loading/unloading materials in the rain.
- ❑ Cover loading/unloading area/or conduct these activities indoors.
- ❑ Develop and implement spill plans.
- ❑ Use berms or dikes around area page 50850.
- ❑ Inspect containers for leaks or damage prior to loading.
- ❑ Use catch buckets, drop cloths, and other spill prevention measures where liquid materials are loaded/unloaded.
- ❑ Provide paved areas to enable easy collection of spilled materials.

Raw and/or Waste Material Storage Areas

- ❑ Confine storage to a designated area.
- ❑ Store materials inside.
- ❑ Cover storage areas with a roof or tarp.
- ❑ Use dikes or berms for storage tanks and drum storage.
- ❑ Cover dumpsters used for waste paper and other materials.
- ❑ Store materials on concrete pads to allow for recycling and spills of leaks.
- ❑ Expedite recycling process for exposed scrap paper.
- ❑ Develop and implement spill plans.
- ❑ Provide paved areas to enable easy collection of spilled materials.
- ❑ Provide good housekeeping (i.e., dust and debris collection) where cyclones are utilized.

Log, Lumber and Other Wood Product Storage Areas

- ❑ Divert storm water around storage areas with ditches, swales, and/or berms.
- ❑ Practice good housekeeping measures such as frequent removal of debris.
- ❑ Line storage areas with crushed rock or gravel or porous pavement to promote infiltration, minimize discharge and provide sediment and erosion control.
- ❑ Use ponds for collection, containment and recycle for log spraying operations.

Chemical and Allied Products Manufacturing Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Good Housekeeping

- ❑ Schedule regular pickup and disposal of garbage and waste materials or other measures to dispose of waste. Individuals responsible for waste management and disposal should be informed of the procedures established under the plan.
- ❑ Routinely inspect for leaks and conditions of drums, tanks and containers. Ensure that spill cleanup procedures are understood by employees.
- ❑ Keep an up to date inventory of all materials present at the facility. While preparing the inventory, all containers should be clearly labeled. Hazardous containers that require special handling, storage, use and disposal considerations should be clearly marked and readily recognizable.
- ❑ Maintain clean ground surfaces by using brooms, shovels, vacuum cleaners or cleaning machines. Employee training should address procedures for equipment and containers cleaning and washing. The training should emphasize the human hazards and the potential environmental impacts from the discharges of washwaters.
- ❑ Facilities should consider evaluating existing security systems such as fencing, lighting, vehicular traffic control, and securing of equipment and to prevent accidental or intentional entry which could cause a discharge of pollutants to waters of the United States.

Material Handling and Storage Areas

- ❑ For areas where liquid or powdered materials are stored, facilities should consider providing either diking, curbing, or berms.
- ❑ For all other outside storage areas including storage of used containers, machinery, scrap and construction materials, and pallets, facilities should consider preventing or minimizing storm water runon to the storage area by using curbing, culverting, gutters, sewers or other forms of drainage control.
- ❑ For all storage areas, roofs, covers or other forms of appropriate protection should be considered to prevent exposure to weather. In areas where liquid or powdered materials are transferred in bulk from truck or rail cars, permittees should consider appropriate measures to minimize contact of material with precipitation.
- ❑ Permittees should consider providing for hose connection points at storage containers to be inside containment areas and drip pans to be used in areas which are not in a containment area, where spillage may occur (e.g., hose reels, connection points with rail cars or trucks) or equivalent measures.
- ❑ In areas of transfer of contained or packaged materials and loading/unloading areas, permittees should consider providing appropriate protection such as overhangs or door skirts to enclose trailer ends at truck loading/unloading docks or an equivalent.
- ❑ In order to prevent facilities from discharging contaminated storm water from areas where precipitation is contained, contained areas should be restrained by valves or other positive means to prevent the discharge of a spill or leak. Containment units may be emptied by pumps or ejectors; however, these should be manually activated. Flapper type drain valves should not be used to drain containment areas. Valves used for the drainage of containment areas should, as far as is practical, be of manual, open or closed design. If facility drainage is not engineered as above, the final discharge point of all in-facility sewers should be equipped to prevent the discharge in the event of an uncontrolled spill of materials.
- ❑ Use storm water management practices to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site.
- ❑ For areas with a potential for significant soil erosion, use permanent stabilization practices to stabilize disturbed areas. The measures will minimize the amount of sediment materials in the discharge.

Asphalt Paving and Roofing Materials Manufacturers and Lubricant Manufacturers

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Material Storage, Handling, and Processing

- ❑ Cover material storage and handling areas with an awning tarp or roof.
- ❑ Practice good stockpiling practices such as: storing materials on concrete or asphalt pads; surrounding stockpiles with diversion dikes or curbs; and revegetating areas used for stockpiling in order to slow runoff.
- ❑ Use curbing, diking or channelization around material storage, handling and processing areas to divert run on around areas where it can come into contact with material stored or spilled on the ground.
- ❑ Utilize secondary containment measures such as dikes or berms around asphalt storage tanks and fuel oil tanks.
- ❑ Use dust collection systems (i.e., baghouses) to collect airborne particles generated as a result of material handling operations or aggregate drying.
- ❑ Properly dispose of waste materials from dust collection systems and other operations.
- ❑ Remove spilled material and dust from paved portions of the facility by shoveling and sweeping on a regular basis.
- ❑ Utilize catch basins to collect potentially contaminated storm water.
- ❑ Implement spill plans to prevent contact of runoff with spills of significant materials.
- ❑ Clean material handling equipment and vehicles to remove accumulated dust and residue.
- ❑ Use a detention pond or sedimentation basin to reduce suspended solids.
- ❑ Use an oil/water separator to reduce the discharge of oil/ grease.

Glass, Clay, Cement, Concrete, and Gypsum Product Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Storing Dry Bulk Materials

- ❑ Store materials in an enclosed silo or building. Materials may include sand, gravel, clay, cement, fly ash, kiln dust, and gypsum.
- ❑ Cover material storage piles with a tarp or awning.
- ❑ Divert run on around storage areas using curbs, dikes, diversion swales or positive drainage away from the storage piles.
- ❑ Install sediment basins, silt fence, vegetated filter strips, or other sediment removal measures downstream/downslope.
- ❑ Only store washed sand and gravel outdoors.

Handling Bulk Materials

- ❑ Use dust collection systems (e.g., bag houses) to collect airborne particles generated as a result of handling operations.
- ❑ Remove spilled material and settled dust from paved portions of the facility by shoveling and sweeping on a regular basis.
- ❑ Periodically clean material handling equipment and vehicles to remove accumulated dust and residue.
- ❑ Install sediment basins, silt fence, vegetated filter strips, or other sediment removal measures downstream/downslope.

Mixing Operations

- ❑ Use dust collection systems (e.g., bag houses) to collect airborne particles generated as a result of mixing operations.
- ❑ Remove spilled material and settled dust from the mixing area by shoveling and sweeping on a regular basis.
- ❑ Clean exposed mixing equipment after mixing operations are complete.
- ❑ Install sediment basins, silt fence, vegetated filter strips, or other sediment removal measures downstream/downslope.

Vehicle and Equipment Washing

- ❑ Designate vehicle and equipment wash areas that drain to recycle ponds or process wastewater treatment systems.
- ❑ Train employees on proper procedure for washing vehicles and equipment including a discussion of the appropriate location for vehicle washing.
- ❑ Conduct vehicle washing operation indoors or in a covered area.
- ❑ Clean wash water residue from portions of the site that drain to storm water discharges.

Dust Collection

- ❑ Maintain dust collection system and baghouse. Properly remove and recycle or dispose of collected dust to minimize exposure of collected dust to.

Pouring and Curing Pre-cast Concrete Products

- ❑ Pour and cure precast products in a covered area.
- ❑ Clean forms before storing outdoors.

Primary Metals Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Metal Product Stored Outside Such as Returns, Scrap Metal, Turnings, Fines, Ingots, Bars, Pigs, Wire

- ❑ Store all wastes indoors or in sealed drums, covered dumpsters, etc.
- ❑ Minimize raw material storage through effective inventory control.
- ❑ Minimize run on from adjacent properties and stabilized areas to areas with exposed soil with diversion dikes, berms, curbing, concrete pads, etc.

Outdoor Storage or Handling of Fluxes

- ❑ Store fluxes in covered hoppers, silos, or indoors and protect from wind-blown losses.
- ❑ Stabilize areas surrounding storage and material handling areas and establish schedule for sweeping.

Storage Piles, Bins, or Material Handling of Coke or Coal

- ❑ Where possible store coke and coal under cover or indoors and protect from wind-blown losses.
- ❑ Prevent or divert run on from adjacent areas with swales, dikes, or curbs.
- ❑ Minimize quantities of coke or coal stored onsite through implementation of effective inventory control.
- ❑ Trap particulates originating in coke or coal storage or handling areas with filter fabric fences, gravel outlet protection, sediment traps, vegetated swales, buffer strips of vegetation, catch-basin filters, retention/detention basins or equivalent.

Storage or Handling of Casting Sand

- ❑ Store raw sand in silos, covered hoppers, or indoor whenever possible.
- ❑ Prevent or divert run on from adjacent areas with swales, dikes, or curbs.
- ❑ Minimize quantities of sand stored onsite through implementation of effective inventory control.
- ❑ Tarp or otherwise cover piles.
- ❑ Trap particulates originating in coke or coal storage or handling areas with filter fabric fences, gravel outlet protection, sediment traps, vegetated swales, buffer of vegetation, catch-basin filters, retention/detention basins or equivalent.

Vehicle Fueling and Maintenance

- ❑ See the fact sheet AVehicle and Equipment Maintenance Areas at Land Transportation Facilities.

Outdoor Storage Tanks or Drums of Gas, Diesel, Kerosene, Lubricants, Solvents

- ❑ Store tanks and drums inside when possible.
- ❑ Establish regular inspection of all tanks and drums for leaks, spills, corrosion, damage, etc.
- ❑ Utilize effective inventory control to reduce the volume of chemicals stored onsite.
- ❑ Prevent run on to and runoff from tank and drum storage areas, provide adequate containment to hold spills and leaks.
- ❑ Prepare and train employees in dealing with spills and leaks properly, use dry clean-up methods when possible.

Slag or Dross Stored or Disposed of Outside in Piles or Drums

- ❑ Collect waste waters used for granulation of slag.
- ❑ Store slag and dross indoors, under cover, or in sealed containers.
- ❑ Establish regular disposal of slag or dross to minimize quantities stored and handled onsite.
- ❑ Minimize run on to slag storage areas with diversion dikes, berms, curbing, vegetated swales.
- ❑ Trap particulates originating in slag storage areas with filter fabric fences, gravel outlet protection, sediment traps, vegetated swales, buffer strips of vegetation, catch-basin filters, retention/detention basins or equivalent.

Fly Ash, Particulate Emissions, Dust Collector Sludges and Solids, Baghouse Dust

- ❑ Store all dusts and sludges indoors to prevent contact with storm water or losses due to wind.
- ❑ Establish regular disposal schedule to minimize quantities of pollutants stored and handled onsite.

Storage and Disposal of Waste Sand or Refractory Rubble in Piles Outside

- ❑ Move piles under cover or tarps whenever possible.
- ❑ Establish regular disposal schedule to minimize quantities stored onsite.
- ❑ Stabilize areas of waste product storage and perform regular sweeping of area.

Scrap Processing Activities (Shredding Etc.)

- ❑ See the fact sheet AScrap and Waste Recycling Facilities.

Machining Waste Stored Outside or Exposed to Storm Water-fines, Turnings, Oil, Borings, Gates, Sprues, Scale

- ❑ Store all wastes indoors or in sealed drums, covered dumpsters, etc.
- ❑ Stabilize areas of waste product storage and perform regular sweeping and cleaning of any residues.
- ❑ Consider using booms, oil/water separators, sand filters, etc. for outfalls draining areas where oil is potentially present.
- ❑ Minimize run on from adjacent properties and stabilized areas to areas with exposed soil with diversion dikes, berms, curbing, concrete pads, etc.

Obsolete Equipment Stored Outside

- ❑ Where possible, dispose of unused equipment properly, or move indoors.
- ❑ Cover obsolete equipment with a tarp or roof.
- ❑ Consider using booms, oil/water separators, sand filters, etc. for outfalls draining areas where oil is potentially present.
- ❑ Minimize runoff coming into contact with old equipment through berms, curbs, or placement on a concrete pad.

Material Losses from Handling Equipment Such as Conveyors, Trucks, Pallets, Hoppers, Etc.

- ❑ Schedule frequent inspections of equipment for spills or leakage of fluids, oil, or fuel.
- ❑ Inspect for collection of particulate matter on and around equipment and clean. Where possible cover these areas to prevent losses to wind and precipitation.
- ❑ Store pallets, hoppers, etc. which have residual materials on them under cover, with tarps, or inside.

Losses During Charging of Coke Ovens or Sintering Plants

- ❑ Cover any exposed areas related to furnace charging/material handling activities.
- ❑ Stabilize areas around all material handling areas and establish regular sweeping.
- ❑ Route runoff from particulate generating operations to sediment traps, vegetated swales, buffer strips of vegetation, catch-basin filters, retention/detention basins or equivalent.

Particulate Emissions from Blast Furnaces, Electric Arc Furnaces, Induction Furnaces and Fugitive Emissions from Poorly Maintained or Malfunctioning Baghouses, Scrubbers, Electrostatic Precipitators, Cyclones

- ❑ Establish schedule for inspection and maintenance of all pollution control equipment-check for any particulate deposition from leaks, spills, or improper operation of equipment and remedy.
- ❑ Route runoff from particulate generating operations to sediment traps, vegetated swales, buffer strips of vegetation, catch-basin filters, retention/detention basins or equivalent.

Storage of Products Outside after Painting, Pickling, or Cleaning Operations

- ❑ Store all materials inside or under cover whenever possible.
- ❑ Prevent run on to product storage areas through curbs, berms, dikes, etc.
- ❑ Consider using booms, oil/water separators, sand filters, etc. for outfalls draining areas where oil is potentially present.
- ❑ Remove residual chemicals from intermediate or finished products before storage or transport outside.

Casting Cooling or Shakeout Operations Exposed to Precipitation or Wind

- ❑ Perform all pouring, cooling, and shakeout operations indoors in areas with roof vents to trap fugitive particulate emissions.
- ❑ Recycle into process as much casting sand as possible.

Landfilling or Open Pit Disposal of Wastes Onsite

- ❑ See the fact sheet ALandfills and Land Application Sites.≡

Losses of Particulate Matter from Machining Operations (Grinding, Drilling, Boring, Cutting). Through Deposition or Storage of Products Outside.

- ❑ Store all intermediate and finished products inside or under cover.
- ❑ Consider using booms, oil/water separators, sand filters, etc. for outfalls draining areas where oil is potentially present.
- ❑ Clean products of residual materials before storage outside.
- ❑ Stabilize storage areas and establish sweeping schedule.

Areas of the Facility with Unstabilized Soils Subject to Erosion.

- ❑ Minimize run on from adjacent properties and stabilized areas to areas with exposed soil with diversion dikes, berms, vegetated swales, etc.
- ❑ Stabilize all high traffic areas including all vehicle entrances, exits, loading, unloading, and vehicle storage areas.
- ❑ Conduct periodic sweeping of all traffic areas.
- ❑ Trap sediment originating in unstabilized areas. Filter fabric fences, gravel outlet protection, sediment traps, vegetated swales, buffer strips of vegetation, catch-basin filters, retention/detention basins or equivalent.
- ❑ Inspect and maintain all BMPs on a regular basis.
- ❑ Provide employee training on proper installation and maintenance of sediment and erosion controls.

Improper Connection of Floor, Sink, or Process Wastewater Drains.

- ❑ Inspect and test all floor, sink, and process wastewater drains for proper connection to sanitary sewer and remove any improper connections to storm sewer or waters of the United States.

Metal Mining Facilities; Coal Mines and Coal Mining-Related Facilities; Mineral Mining and Processing Facilities

Land Disturbance Activities

Land-disturbed Area	*Discharge Diversions*	*Conveyance Systems*	*Runoff Dispersion*	*Sediment Control and Collection*	*Vegetation*	*Containment*	*Treatment*
Haul Roads and Access Roads	Dikes, curbs, berms	Channels, gutters, culverts, rolling dips, road sloping, roadway water deflectors	Check dams, rock outlet protection, level spreaders, stream alteration, drop structures	Gabions, riprap, native rock retaining walls, straw bale barriers, sediment traps/catch basins, vegetated buffer strips	Seeding, willow cutting establishment		
Pits, Quarries, or Underground Mines.	Dikes, curbs, berms	Channels, gutters	Serrated slopes, benched slopes, contouring, stream alteration	Sediment settling ponds, straw bale barrier, siltation berms	Seeding	Plugging and grouting	Chemical/ physical treatment
Overburden, Waste Rock and Raw Material Piles	Dikes, curbs, berms	Channels, gutters	Serrated slopes, benched slopes, contouring, stream alteration	Plastic matting, plastic netting, erosion control blankets, mulch-straw, compaction, sediment/settling ponds, silt fences, siltation berms	Topsoiling, seedbed preparation, seeding	Capping	Chemical/ physical treatment, artificial wetlands
Reclamation	Dikes, curbs, berms	Channels, gutters	Check dams, rock outlet protection, level spreaders, serrated slopes, benched slopes, contouring, drain fields, stream alteration, drop structures	Gabions, riprap, native rock retaining walls, biotechnical stabilization, straw bale barriers, sediment traps/catch basins, vegetated buffer strips, silt fences, siltation berms, brush sediment barriers	Topsoiling, seedbed preparation, seeding, willow cutting establishment	Capping, plugging and grouting	Chemical/ physical treatment, wetlands

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Oil and Gas Extraction Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

General Activities

- ❑ Utilize diking and other forms of containment and diversion around storage tanks, drums of oil, acid, production chemicals, and liquids, reserve pits, and impoundments.
- ❑ Use diking and other forms of containment and diversion around material handling and processing areas.
- ❑ Use porous pads under drum and tank storage areas.
- ❑ Use covers and/or lining for waste reserve and sludge pits to avoid overflows and leaks.
- ❑ Use drip pans, catch basins, or liners during handling of materials such as tank bottoms.
- ❑ Reinject or treat produced water instead of discharging it.
- ❑ Limit the amount of land disturbed during construction of access roads and facilities.
- ❑ Employ spill plans for pipelines, tanks, drums, etc.
- ❑ Recycle oily wastes, drilling fluids and other materials onsite, or dispose of properly.
- ❑ Take wastes offsite to be disposed of instead of burying them.
- ❑ Use oil water separators.

Hazardous Waste Treatment, Storage, or Disposal Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Outdoor Unloading and Loading

- ❑ Confine loading/unloading activities to a designated area.
- ❑ Consider performing loading/unloading activities indoors or in a covered area.
- ❑ Consider covering loading/unloading area with permanent cover (e.g., roofs) or temporary cover (e.g., tarps).
- ❑ Close storm drains during loading/unloading activities in surrounding areas.
- ❑ Avoid loading/unloading materials in the rain.
- ❑ Inspect the unloading/loading areas to detect problems before they occur.
- ❑ Inspect all containers prior to loading/unloading of any raw or spent materials.
- ❑ Consider berming, curbing, or diking loading/ unloading areas.
- ❑ Use dry clean-up methods instead of washing the areas down.
- ❑ Train employees on proper loading/unloading techniques.

Landfills and Land Application Sites

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Land Disturbance Activities

- ❑ Stabilize soils with temporary seeding, mulching, and geotextiles; leave vegetative filter strips along streams.
- ❑ Implement structural controls such as dikes, swales, silt fences, filter berms, sediment traps and ponds, outlet protection, pipe slope drains, check dams, and terraces to convey runoff, to divert storm water flows away from areas susceptible to erosion, and to prevent sediments from entering water bodies.
- ❑ Frequently inspect all stabilization and structural erosion control measures and perform all necessary maintenance and repairs.
- ❑ Stabilize haul roads and entrances to landfill with gravel or stone.
- ❑ Construct vegetated swales along road.
- ❑ Clean wheels and body of trucks or other equipment as necessary to minimize sediment tracking (but contain any wash waters [process wastewaters]).
- ❑ Frequently inspect all stabilization and structural erosion control measures and perform all necessary maintenance and repairs.

Application of Fertilizers, Pesticides, and Herbicides

- ❑ Observe all applicable Federal, State, and local regulations when using these products.
- ❑ Strictly follow recommended application rates and methods (i.e., do not apply in excess of vegetative requirements).
- ❑ Have materials such as absorbent pads easily accessible to clean up spills.

Exposure of Chemical Material Storage Areas to Precipitation

- ❑ Provide barriers such as dikes to contain spills.
- ❑ Provide cover for outside storage areas.
- ❑ Have materials such as absorbent pads easily accessible to clean up spills.

Exposure of Waste at Open Face

- ❑ Minimize the area of exposed open face as much as is practicable.
- ❑ Divert flows around open face using structural measures such as dikes, berms, swales, and pipe slope drains.
- ❑ Frequently inspect erosion and sedimentation controls.

Waste Tracking Onsite

- ❑ Clean wheels and exterior of trucks or other equipment as necessary to minimize waste tracking (but contain any wash waters [process wastewaters]).

Uncontrolled Leachate

- ❑ Frequently inspect leachate collection system and landfill for leachate leaks.
- ❑ Maintain landfill cover and vegetation.
- ❑ Maintain leachate collection system

Automobile Salvage Yards

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Dismantling and Vehicle Maintenance

- ❑ Drain all fluids from vehicles upon arrival at the site.
- ❑ Segregate the fluids and properly store or dispose of them.
- ❑ Maintain an organized inventory of materials used in the maintenance shop.
- ❑ Keep waste streams separate (e.g., waste oil and mineral spirits). Nonhazardous substances that are contaminated with a hazardous substance is considered a hazardous substance.
- ❑ Recycle anti-freeze, gasoline, used oil, mineral spirits, and solvents.
- ❑ Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers properly.
- ❑ Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries).
- ❑ Drain oil filters before disposal or recycling.
- ❑ Store cracked batteries in a non-leaking secondary container.
- ❑ Promptly transfer used fluids to the proper container. Do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers.
- ❑ Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets.
- ❑ Plug floor drains that are connected to the storm or sanitary sewer. If necessary, install a sump that is pumped regularly.
- ❑ Inspect the maintenance area regularly for proper implementation of control measures.
- ❑ Filtering storm water discharges with devices such as oil-water separators.
- ❑ Train employees on proper waste control and disposal procedures.

Outdoor Vehicle, Equipment, and Parts Storage

- ❑ Use drip pans under all vehicles and equipment waiting for maintenance and during maintenance.
- ❑ Store batteries on impervious surfaces. Curb, dike or berm this area.
- ❑ Confine storage of parts, equipment and vehicles to designated areas.
- ❑ Cover all storage areas with a permanent cover (e.g., roofs) or temporary cover (e.g., canvas tarps).

Vehicle, Equipment and Parts Washing Areas

- ❑ Avoid washing parts or equipment outside.
- ❑ Use phosphate-free biodegradable detergents.
- ❑ Consider using detergent-based or water-based cleaning systems in place of organic solvent degreasers.
- ❑ Designate an area for cleaning activities.
- ❑ Contain steam cleaning washwaters or discharge under an applicable NPDES permit.
- ❑ Ensure that washwaters drain well.
- ❑ Inspect cleaning area regularly.
- ❑ Install curbing, berms or dikes around cleaning areas.
- ❑ Train employees on proper washing procedures.

Liquid Storage in Above Ground Containers

- ❑ Maintain good integrity of all storage containers.
- ❑ Install safeguards (such as diking or berming) against accidental releases at the storage area.
- ❑ Inspect storage tanks to detect potential leaks and perform preventive maintenance.
- ❑ Inspect piping systems (pipes, pumps, flanges, couplings, hoses, and valves) for failures or leaks.
- ❑ Train employees on proper filling and transfer procedures.

Improper Connection with Storm Drains

- ❑ Plug all floor drains if it is unknown whether the connection is to storm drain or sanitary sewer systems.
- ❑ Alternatively, install a sump that is pumped regularly.
- ❑ Perform dye testing to determine if interconnections exist between sanitary water system and storm drain system.
- ❑ Update facility schematics to accurately reflect all plumbing connections.
- ❑ Install a safeguard against vehicle washwaters and parts cleaning waters entering the storm drain unless permitted.
- ❑ Maintain and inspect the integrity of all underground storage tanks; replace when necessary.
- ❑ Train employees on proper disposal practices for all material.

Scrap and Waste Recycling Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Inbound Recyclable and Waste Material Control

- ❑ Provide public education brochures on acceptable recyclable materials.
- ❑ Educate curbside pick-up drivers on acceptable materials. Reject unacceptable materials at the source.
- ❑ Employee training.
- ❑ Provide totally-enclosed drop-off containers for public.
- ❑ Establish program to encourage suppliers of scrap, waste and other salvageable materials to drain residual fluids prior to arrival at the facility.
- ❑ Establish acceptance program for handling, storage and disposal of lead-acid batteries.
- ❑ Establish procedures for rejecting or handling, storing and disposal of hazardous wastes and other nonhazardous residual fluids.
- ❑ Establish procedures to properly handle industrial turnings and cuttings and prohibiting cutting oils and metallic fines from coming in contact with runoff.
- ❑ Identify inspector training requirements.

Outside Scrap Material Storage: Liquids

- ❑ Conduct inspections for fluids, e.g., oils, transmission fluids, antifreeze, brake fluid, and fuels. Establish handling/ storage/disposal procedures for these materials.
- ❑ Drain and collect liquids in a designated area.
- ❑ Provide covered storage or impervious areas with curbing/berms or other appropriate containment.
- ❑ Store liquid materials in covered areas or impervious areas with curbing/berms or other appropriate measure.
- ❑ Establish spill prevention procedures.
- ❑ Provide adequate supply of materials for dry clean up of spills or leaks.
- ❑ Prevent runoff into liquid storage areas. Store liquid wastes in materially compatible containers.
- ❑ Minimize/eliminate the accumulation of liquid wastes.
- ❑ Establish procedures if hazardous wastes are discovered after material accepted.
- ❑ Conduct periodic inspections of storage areas.
- ❑ Conduct preventative maintenance of BMPs as necessary.

Outside Scrap Material Storage: Bulk Solid Materials

- ❑ Store only processed materials, i.e., baled plastic and aluminum and glass cullet.
- ❑ Provide containment pits with sumps pumps that discharge to sanitary sewer system. Prevent discharge of residual fluids to storm sewer.
- ❑ Provide dikes and curbs around bales of waste paper.
- ❑ Use tarpaulins or covers over bales of wastepaper.
- ❑ Conduct regularly scheduled sweeping of storage areas to minimize particulate buildup.
- ❑ Minimize runoff from coming into areas where significant materials are stored, e.g., diversion structures such as curbing, berms, containment trenches, surface grading, and elevated concrete pads or other equivalent measure.
- ❑ Use adsorbents to collect leaking or spills of oil, fuel, transmission and brake fluids, e.g., dry absorbent, drip pans.
- ❑ Install media filters such as catch basin filters and sand filters.
- ❑ Install oil/water separator in storage areas with vehicle transmissions and engines. Locate spill plans under stored vehicles.
- ❑ Provide non-recyclable waste storage bins and containers.
- ❑ Conduct periodic inspections.
- ❑ Conduct preventative maintenance as necessary.
- ❑ Provide equipment operator training to minimize damage to controls, e.g., curbing and berms.

Storage Other: Lightweight Materials

- ❑ Store equivalent of the average daily volume of recyclable materials indoors.
- ❑ Provide good housekeeping.
- ❑ Disconnect all floor drains from storm sewer system.
- ❑ Prohibit illicit discharges and illegal dumping to floor drains that are connected to the storm sewer.
- ❑ Direct tipping floor washwaters to sanitary sewer system if permitted by local sanitary authority.
- ❑ Identify/provide supplier training or information bulletins on requirements for acceptance of lightweight materials.
- ❑ Encourage supplier participation in program to minimize/eliminate, as practicable, volume of semisolid and liquid residues in recyclable materials, e.g., residual fluids in aluminum and plastic containers.
- ❑ Provide covered storage, container bins or equivalent for lighter-weight materials such as glass, plastics, aluminum cans, paper, cardboard.
- ❑ Minimize/eliminate residue from bottles, containers, etc. from coming in contact with runoff. Establish dry clean up methods.
- ❑ Establish procedures and employee training for the handling, storage and disposal of residual fluids from small containers.
- ❑ Prohibit washdown of tipping floor areas.
- ❑ Provide good housekeeping to eliminate particulate and residual materials buildup. Establish cleaning schedule for high traffic areas.
- ❑ Provide covered disposal containers or equivalent for residual waste materials.
- ❑ Eliminate floor drains discharging to storm sewer.

Residual Non-recyclable Materials

- ❑ Store residual non-recyclable materials in covered containers for transport to a proper disposal facility.
- ❑ Bale residual non-recyclable materials and cover with tarpaulin or equivalent.

Recyclable Material Processing

- ❑ Conduct processing operations indoors. Clean up residual fluids.
- ❑ Conduct routine preventive maintenance on all processing equipment.
- ❑ Schedule frequent good housekeeping to minimize particulate and residual materials buildup.

Scrap Processing Operations

- ❑ Provide training to equipment operators on how to minimize exposure of runoff to scrap processing areas.
- ❑ Schedule frequent cleaning of accumulated fluids and particulate residue around all scrap processing equipment.
- ❑ Schedule frequent inspections of equipment for spills or leakage of fluids, oil, fuel, hydraulic fluids.
- ❑ Conduct routine preventive maintenance of equipment per original manufacturer's equipment (OME) recommendations. Replace worn or malfunctioning parts.
- ❑ Site process equipment on elevated concrete pads or provide runoff diversion structures around process equipment, berms, containment trenches or surface grading or other equivalent measure. Discharge runoff from within bermed areas to a sump, oil/ water separator, media filter or discharge to sanitary sewer.
- ❑ Conduct periodic maintenance and clean out of all sumps, oil/water separators, media filters.
- ❑ Dispose of residual waste materials properly (e.g., according to RCRA).
- ❑ Provide curbing, dikes, and berms around scrap processing equipment to prevent contact with runoff.
- ❑ Where practicable, locate process equipment (e.g., balers, briquetters, small compactors) under an appropriate cover.
- ❑ Provide cover over hydraulic equipment and combustion engines. Provide dry clean up materials, e.g., dry-adsorbents, drip pans, absorbent booms, etc. to prevent contact of hydraulic fluids, oils, fuels, etc., with storm water runoff.
- ❑ Provide alarm, pump shutoff, or sufficient containment for hydraulic reservoirs in the event of a line break.
- ❑ Stabilize high traffic areas (e.g., concrete pads, gravel, pavement) around processing equipment, where practicable.
- ❑ Provide site gages or overfill protection devices for all liquid and fuel storage reservoirs and tanks.
- ❑ Establish spill prevention and response procedures, including employee training.
- ❑ Provide containment bins or equivalent for shredded material, especially lightweight materials such as fluff (preferably at the discharge of these materials from the air classification system).

Supplies for Process Equipment

- ❑ Locate storage drums containing liquids, including oils and lubricants indoors. Alternatively, site palletized drums and containers on an impervious surface and provide sufficient containment around the materials. Provide sumps, oil/water separators, if necessary.
- ❑ Conduct periodic inspections of containment areas and containers/drums for corrosion.
- ❑ Perform preventive maintenance of BMPs, as necessary.
- ❑ Instruct employees on proper material handling and storage procedures.

Scrap Lead Acid Battery Program

- ❑ Establish inspection and acceptance procedures for scrap lead-acid batteries.
- ❑ Provide supplier training on acceptance practices for scrap batteries.
- ❑ Provide employee training on the safe handling, storage and disposition of scrap batteries.
- ❑ Separate all scrap batteries from other scrap materials.
- ❑ Store scrap batteries under cover or equivalent.
- ❑ Establish procedures for the storage, handling, disposition of cracked or broken batteries in accordance with applicable Federal regulations, e.g., RCRA.
- ❑ Establish procedures to collect and dispose of leaking battery acid according to Federal regulations, e.g., RCRA.
- ❑ Provide covered storage or equivalent to prevent exposure to either precipitation or runoff.

Vehicle and Equipment Maintenance

- ❑ Avoid washing equipment and vehicles outdoors.
- ❑ Eliminate outdoor maintenance areas.
- ❑ Establish an inventory of materials used in the maintenance shop that could become a potential pollutant source with storm water runoff, e.g., fuels, solvents, oils, lubricants.
- ❑ Store and dispose of oily rags, filters (oil and air), batteries, engine coolant, transmission fluid, use oil, brake fluid, and solvents in a manner that minimizes potential contact with runoff and in compliance with State and Federal regulations.
- ❑ Label and track recycling of waste materials, e.g., batteries, solvent, used oil.
- ❑ Drain oil filters before disposal or recycling.
- ❑ Drain all fluids from all parts or components that will become scrap material or secondhand parts.
- ❑ Store liquid waste materials in compatible containers.
- ❑ Store and dispose used batteries in accordance with scrap lead acid battery program.
- ❑ Disconnect all floor drains connected to storm sewer system.
- ❑ Prohibit non-storm water discharges, e.g., dumping of used liquids down floor drains and washdown of maintenance areas.
- ❑ Provide employee training on appropriate storage and disposal of waste materials.
- ❑ Provide good housekeeping measures.
- ❑ Conduct inspections of work areas for compliance with BMPs.

Fueling

- ❑ Establish spill prevention and clean-up procedures.
- ❑ Provide dry-absorbent materials or equivalent.
- ❑ Provide employee training, i.e., avoid topping off fuel tanks.
- ❑ Divert runoff from fueling areas.
- ❑ Use spill and overflow protection devices.
- ❑ Provide high level alarm on fuel storage tanks.
- ❑ Minimize/eliminate runoff onto fueling areas.
- ❑ Reduce exposure of fueling areas to precipitation by covering the fueling area.
- ❑ Provide dry adsorbents to clean up fuel spills.
- ❑ Conduct periodic inspections of fueling areas.
- ❑ Provide curbing or posts around fuel pumps to prevent collisions during vehicle ingress and egress.

Vehicle and Equipment Washing

- ❑ Avoid washing vehicles and equipment outdoors.
- ❑ Use biodegradable, phosphate free detergents.
- ❑ Recycle wash water.
- ❑ Provide vehicle wash rack with dedicated trap.
- ❑ Use autoshut-off valves on washing equipment.

Outdoor Vehicle Parking and Storage

- ❑ Use drip pans under all equipment and vehicles waiting maintenance.
- ❑ Cover vehicle and equipment storage areas.
- ❑ Conduct inspections of storage and parking areas for leaks and filled drip pans.
- ❑ Provide employee training.

Vehicle and Equipment Painting (where applicable)

- ❑ Keep paint and solvents away from traffic areas.
- ❑ Conduct sanding and painting in nonexposed areas, e.g., under cover, in accordance with OSHA standards.
- ❑ Cleanup accumulated particulate matter.
- ❑ Minimize overspraying parts.
- ❑ Dispose or recycle paint, solvents and thinner properly.
- ❑ Provide training to employees.
- ❑ Conduct periodic inspections of paint spraying areas.

Erosion and Sediment Control

- ❑ Minimize runon from adjacent properties, e.g., diversion dikes, berms, or equivalent.
- ❑ Trap sediment at downgradient locations and outlets serving unstabilized areas. This may include filter fabric fences, gravel outlet protection, sediment traps, vegetated or riprap swales, vegetated strips, diversion structures, catch- basin filters, retention/detention basins or equivalent.
- ❑ Runoff containing oil and grease may include the use of absorbent booms or sand filters in front of outlet structures or other equivalent measures.
- ❑ Stabilize all high traffic areas, including all vehicle entrances and exit points.
- ❑ Conduct periodic sweeping of all traffic areas.
- ❑ Conduct inspections of BMPs.
- ❑ Perform preventative maintenance as needed on BMPs.
- ❑ Provide employee training on the proper installation and maintenance of erosion and sediment controls.

Activities Specific to Liquid Waste Recycling Facilities

Individual Drum/Container Storage

- ❑ Ensure container/drums are in good condition. Store waste materials in materially compatible drums.
- ❑ Use containers that meet National Fire Protection Association (NFPA) guidelines.
- ❑ Put individual containers on pallets. Limit stack height of individual containers/drums. Provide straps, plastic wrap, or equivalent around stacked containers to provided stability.
- ❑ Label/mark drums. Segregate hazardous and flammable wastes. Comply with NFPA guidelines for segregation of flammable wastes.
- ❑ Provide adequate clearance to allow material movement and access by material handling equipment.
- ❑ Provide semipermanent or permanent cover over wastes.
- ❑ Provide adequate clearance between stored materials to allow movement and handling.
- ❑ Establish clean up procedures, including the use of dry adsorbents, in the event of spills or leaks.
- ❑ Prohibit washing down of material storage areas.
- ❑ Disconnect or seal all floor drains from storm sewer system.
- ❑ Develop spill prevention, countermeasures and control (SPCC) procedures for all liquid container storage areas. Ensure employees are familiar with SPCC procedures. Schedule/conduct periodic employee training.
- ❑ Provide secondary containment, dikes, berms, containment trench, sumps, or other equivalent measure, in all storage areas.

Bulk Liquid Storage

- ❑ Use welded pipe connections versus flange connections. Inspect all flange gaskets for deterioration.
- ❑ Apply corrosion inhibitors to exposed metal surfaces.
- ❑ Provide high level alarms for storage tanks.
- ❑ Provide redundant piping, valves, pumps, motors, as necessary, at all pumping stations.
- ❑ Provide manually activated shutoff valves in the event of spill. Install visible and/or audible alarms in the event of a spill.
- ❑ Install manually activated drainage values, or equivalent, versus flapper-type drain values.
- ❑ Provide adequate security against vandalism and tampering.
- ❑ Provide secondary containment around all bulk storage tanks, including berms, dikes, surface impoundments or equivalent. Ensure surfaces of secondary containment areas are adequately sealed to prevent leaks.
- ❑ Provide stationary boxes around all return and fill stations to eliminate/minimize hose drainage and minor waste transfer spills.

Waste Transfer Areas

- ❑ Provide secondary containment or equivalent measures around all liquid waste transfer facilities.
- ❑ Provide cover over liquid waste transfer areas.
- ❑ Establish clean up procedures for minor spills including the use of dry adsorbents.

Inspections

- ❑ Conduct inspections of all material storage, handling and transfer areas.
- ❑ Document signs of corrosion, worn parts or components on pumps and motors, leaking seals and gaskets.
- ❑ Conduct periodic nondestructive testing (NDT) of all bulk storage tanks for signs of deteriorating structural integrity.

Preventive Maintenance

- ❑ Conduct periodic preventive maintenance of all structural controls, replace worn parts on components on valves, pumps, motors per manufacturer's recommendations.

Vehicle Maintenance (if applicable)

- ❑ Establish an inventory of materials used in the maintenance shop that could become a potential pollutant source with storm water runoff, e.g., fuels, solvents, oils, lubricants.
- ❑ Store and dispose of oily rags, filters (oil and air), batteries, engine coolant, transmission fluid, use oil, brake fluid, and solvents in a manner that minimizes potential contact with runoff and in compliance with State and Federal regulations.
- ❑ Label and track recycling of waste materials, e.g., batteries, solvent, used oil.
- ❑ Drain oil filters before disposal or recycling.
- ❑ Drain all fluids from all parts or components that will become scrap material or secondhand parts.
- ❑ Store liquid waste materials in compatible containers.
- ❑ Store and dispose used batteries in accordance with scrap lead acid battery program.
- ❑ Disconnect all floor drains connected to storm sewer system.
- ❑ Prohibit non-storm water discharges, e.g., dumping of used liquids down floor drains and washdown of maintenance areas.
- ❑ Provide employee training on appropriate storage and disposal of waste materials.
- ❑ Provide good housekeeping measures.
- ❑ Conduct inspections of work areas for compliance with BMPs.

Vehicle Cleaning (if applicable)

- ❑ Avoid washing vehicles and equipment outdoors.
- ❑ Use biodegradable, phosphate free detergents.
- ❑ Recycle wash water
- ❑ Provide vehicle wasn rack with dedicated sediment trap.
- ❑ Use autoshut-off valves on washing equipment.

Training

- ❑ Provide employee training on proper material handling and storage procedures. Require familiarization with applicable SPCC measures.

Steam Electric Power Generating Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Fugitive Dust Emissions

- ❑ Consider establishing procedures to minimize offsite tracking of coal dust. To prevent offsite tracking the facility may consider specially designed tires, or washing vehicles in a designated area before they leave the site, and controlling the wash water.

Delivery Vehicles

- ❑ Develop procedures for the inspection of delivery vehicles arriving on the plant site, and ensure overall integrity of the body or container.
- ❑ Develop procedures to control leakage or spillage from vehicles or containers, and ensure that proper protective measures are available for personnel and environment.

Fuel Oil Unloading Areas

- ❑ Use containment curbs in unloading areas.
- ❑ During deliveries station personnel familiar with spill prevention and response procedures may be present to ensure that any leaks or spills are immediately contained and cleaned up.
- ❑ Use spill and overflow protection (drip pans, drip diapers, and/or other containment devices should be placed beneath fuel oil connectors to contain any spillage that may occur during deliveries or due to leaks at such connectors).

Chemical Loading/Unloading Areas

- ❑ Use containment curbs at chemical loading/unloading areas to contain spills.
- ❑ During deliveries station personnel familiar with spill prevention and response procedures may be present to ensure that any leaks or spills are immediately contained and cleaned up.
- ❑ Where practicable chemical loading/unloading areas should be covered, and chemicals should be stored indoors.

Miscellaneous Loading/Unloading Areas

- ❑ Consider covering the loading area.
- ❑ Minimize storm water runon to the loading area by grading, berming, or curbing the area around the loading area to direct storm water away from the area.
- ❑ Locate the loading/unloading equipment and vehicles so that leaks can be controlled in existing containment and flow diversion systems.

Liquid Storage Tanks

- ❑ Use protective guards around tanks.
- ❑ Use containment curbs.
- ❑ Use spill and overflow protection (drip pans, drip diapers, and/or other containment devices should be placed beneath chemical connectors to contain any spillage that may occur during deliveries or due to leaks at such connectors).
- ❑ Use dry cleanup methods.

Large Bulk Fuel Storage Tanks

- ❑ Comply with applicable State and Federal laws, including Spill Prevention Control and Countermeasures (SPCC).
- ❑ Use containment berms.

Oil/Chemical Storage

- ❑ The structural integrity of all above ground tanks, pipelines, pumps and other related equipment should be visually inspected on a weekly basis.
- ❑ All repairs deemed necessary based on the findings of the inspections should be completed immediately to reduce the incidence of spills and leaks occurring from such faulty equipment.

Oil Bearing Equipment in Switchyards

- ❑ Consider level grades and gravel surfaces to retard flows and limit the spread of spills.
- ❑ Collect storm water runoff in perimeter ditches.

Residue Hauling Vehicles

- ❑ Inspect all residue hauling vehicles for proper covering over the load, adequate gate sealing and overall integrity of the body or container.
- ❑ Vehicles without load covers or adequate gate sealing, or with poor body or container conditions may be repaired as soon as practicable.

Ash Loading Areas

- ❑ Reduce and/or control the tracking of ash or residue from ash loading areas. Where practicable, clear the ash building floor and immediately adjacent roadways of spillage, debris and excess water before each loaded vehicle departs.

Areas Adjacent to Disposal Ponds or Landfills

- ❑ Develop procedures to reduce ash residue which may be tracked on to access roads traveled by residue trucks or residue handling vehicles.
- ❑ Reduce ash residue on exit roads leading into and out of residue handling areas.

Landfills, Scrapyards, and General Refuse Sites

- ❑ See the fact sheet AScrap and Waste Recycling Facilities.

Vehicle Maintenance Activities

- ❑ See the fact sheet AVehicle and Equipment Maintenance Areas at Land Transportation Facilities.

Material Storage Areas

- ❑ Consider flat yard grades, runoff collection in graded swales or ditches, erosion protection measures at steep outfall sites (e.g., concrete chutes, riprap, stilling basins), covering lay down areas, storing the materials indoors, covering the material with a temporary covering made of polyethylene, polyurethane, polypropylene, or hypalon.
- ❑ Storm water runon may be minimized by constructing an enclosure or building a berm around the area.

Vehicle and Equipment Maintenance Areas at Land Transportation Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Fueling

- ❑ Use spill and overflow protection.
- ❑ Minimize runon of storm water into the fueling area by grading the area such that storm water only runs off.
- ❑ Reduce exposure of the fuel area to storm water by covering the area.
- ❑ Use dry cleanup methods for fuel area rather than hosing the fuel area down.
- ❑ Use proper petroleum spill control.
- ❑ Perform preventive maintenance on storage tanks to detect potential leaks before they occur.
- ❑ Inspect the fueling area to detect problems before they occur.
- ❑ Train employees on proper fueling techniques.

Vehicle and Equipment Maintenance

- ❑ Maintain an organized inventory of materials used in the maintenance shop.
- ❑ Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers properly.
- ❑ Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries).
- ❑ Drain oil filters before disposal or recycling.
- ❑ Drain and contain all fluids from wrecked vehicles and Aparts≅ cars.
- ❑ Store cracked batteries in a nonleaking secondary container.
- ❑ Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers.
- ❑ Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets.
- ❑ Plug floor drains that are connected to the storm or sanitary sewer. Alternatively, install a sump that is pumped regularly.
- ❑ Inspect the maintenance area regularly for proper implementation of control measures.
- ❑ Train employees on proper waste control and disposal procedures.

Outdoor Vehicle and Equipment Storage and Parking

- ❑ Use drip pans under all vehicles and equipment waiting for maintenance.
- ❑ Cover the storage area with a roof.
- ❑ Inspect the storage yard for filling drip pans and other problems regularly.
- ❑ Train employees on procedures for storage and inspection items.

Locomotive Sanding Areas

- ❑ Cover sand storage piles.
- ❑ Install sediment traps.
- ❑ Install curbs or dikes around storage piles to minimize storm water runon.

Painting Areas

- ❑ Keep paint and paint thinner away from traffic areas to avoid spills.
- ❑ Spray paint in an Occupational Safety and Health Act (OSHA) approved hood.
- ❑ Use effective spray equipment that delivers more paint to the target and less over-spray.
- ❑ Avoid sanding in windy weather and collect and dispose of waste properly.
- ❑ Recycle paint, paint thinner, and solvents.
- ❑ Inspect painting procedures to ensure that they are conducted properly.
- ❑ Train employees on proper sanding, painting, and spraying techniques.

Vehicle or Equipment Washing Areas

- ❑ Avoid washing parts or equipment outside.
- ❑ Use phosphate-free biodegradable detergents.
- ❑ Designate an area for cleaning activities.
- ❑ Contain and recycle washwaters.
- ❑ Ensure that washwaters drain well.
- ❑ Inspect cleaning area regularly.
- ❑ Train employees on proper washing procedures.

Liquid Storage in Above Ground Storage

- ❑ Maintain good integrity of all storage containers.
- ❑ Install safeguards (such as diking or berming) against accidental releases at the storage area.
- ❑ Inspect storage tanks to detect potential leaks and perform preventive maintenance.
- ❑ Inspect piping systems (pipes, pumps, flanges, couplings, hoses, and valves) for failures or leaks.
- ❑ Train employees on proper filling and transfer procedures.

Cold Weather Activities

- ❑ Minimize salt application.
- ❑ Use uncontaminated dirt or ash, if use is necessary.
- ❑ Train employees on proper salt, dirt, sand, or ash application.

Improper Connections to Storm Drain

- ❑ Plug all floor drains connected to storm drain or if connection is unknown. Alternatively, install a sump that is pumped regularly.
- ❑ Perform smoke or dye testing to determine if interconnections exist between sanitary water system and storm drain system.
- ❑ Update facility schematics to accurately reflect all plumbing connections.
- ❑ Install a safeguard against vehicle washwaters entering the storm sewer unless permitted.
- ❑ Maintain and inspect the integrity of all underground storage tanks; replace when necessary.
- ❑ Train employees on proper disposal practices for all materials.

Vehicle and Equipment Maintenance Areas at Water Transportation Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Pressure Washing

- ❑ Collect discharge water and remove all visible solids before discharging to a sewer system, or where permitted, to a drainage system, or receiving water.
- ❑ Perform pressure washing only in designated areas where wash water containment can be effectively achieved.
- ❑ Use no detergents or additives in the pressure wash water.
- ❑ Direct deck drainage to a collection system sump for settling and/or additional treatment.
- ❑ Implement diagonal trenches or berms and sumps to contain and collect wash water at marine railways.
- ❑ Use solid decking, gutters, and sumps at lift platforms to contain and collect wash water for possible reuse.

Surface Preparation Sanding, and Paint Removal.

- ❑ Enclose, cover, or contain blasting and sanding activities to the extent practical to prevent abrasives, dust, and paint chips from reaching storm sewers or receiving water.
- ❑ Where feasible, cover drains, trenches, and drainage channels to prevent entry of blasting debris to the system.
- ❑ Prohibit uncontained blasting or sanding activities performed over open water.
- ❑ Prohibit blasting or sanding activities performed during windy conditions which render containment ineffective.
- ❑ Inspect and clean sediment traps to ensure the interception and retention of solids prior to entering the drainage system.
- ❑ Sweep accessible areas of the drydock to remove debris and spent sandblasting material prior to flooding.
- ❑ Collect spent abrasives routinely and store under a cover to await proper disposal.

Painting

- ❑ Enclose, cover, or contain painting activities to the maximum extent practical to prevent overspray from reaching the receiving water.
- ❑ Prohibit uncontained spray painting activities over open water.
- ❑ Prohibit spray painting activities during windy conditions which render containment ineffective.
- ❑ Mix paints and solvents in designated areas away from drains, ditches, piers, and surface waters, preferably indoors or under cover.
- ❑ Have absorbent and other cleanup items readily available for immediate cleanup of spills.
- ❑ Allow empty paint cans to dry before disposal.
- ❑ Keep paint and paint thinner away from traffic areas to avoid spills.
- ❑ Recycle paint, paint thinner, and solvents.
- ❑ Train employees on proper painting and spraying techniques, and use effective spray equipment that delivers more paint to the target and less overspray.

Drydock Maintenance

- ❑ Clean and maintain drydock on a regular basis to minimize the potential for pollutants in the storm water runoff.
- ❑ Sweep accessible areas of the drydock to remove debris and spent sandblasting material prior to flooding.
- ❑ If hosing may be used as a removal method, collect wash water to remove solids and potential metals.
- ❑ Clean the remaining areas of the dock after a vessel has been removed and the dock raised.
- ❑ Remove and properly dispose of floatable and other low-density waste (wood, plastic, insulations, etc.).

Drydocking

- ❑ Use plastic barriers beneath the hull, between the hull and drydock walls for containment.
- ❑ Use plastic barriers hung from the flying bridge of the drydock, from the bow or stern of the vessel, or from temporary structures for containment.
- ❑ Weight the bottom edge of the containment tarpaulins or plastic sheeting during a light breeze.
- ❑ Use plywood and/or plastic sheeting to cover open areas between decks when sandblasting (scuppers, railings, freeing ports, ladders, and doorways).
- ❑ Install tie rings or cleats, cable suspension systems, or scaffolding to make implementation containment easier.

Nondrydock Containment

- ❑ Hang tarpaulin from the boat, fixed, or floating platforms to reduce pollutants transported by wind.
- ❑ Pave or tarp surfaces under marine railways.
- ❑ Clean railways before the incoming tide.
- ❑ Haul vessels beyond the high tide zone before work commences or halt work during high tide.
- ❑ Place plastic sheeting or tarpaulin underneath boats to contain and collect waste and spent materials and clean and sweep regularly to remove debris.
- ❑ Use fixed or floating platforms with appropriate plastic or tarpaulin barriers as work surfaces and for containment when work is performed on a vessel in the water to prevent blast material or paint overspray from contacting storm water or the receiving water.
- ❑ Sweep, rather than hose, debris present on the dock.

Engine Maintenance and Repairs

- ❑ Maintain an organized inventory of materials used in the maintenance shop.
- ❑ Dispose of greasy rag, oil filters, air filters, batteries, spent coolant, and degreasers properly.
- ❑ Label and track the recycling of waste material (i.e., used oil, spent solvents, batteries).
- ❑ Drain oil filters before disposal or recycling.
- ❑ Store cracked batteries in a non-leaking secondary container.
- ❑ Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers.
- ❑ Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets.
- ❑ Plug floor drains that are connected to the storm or sanitary sewer; if necessary, install a sump that is pumped regularly.
- ❑ Inspect the maintenance area regularly for proper implementation of control measures.
- ❑ Train employees on proper waste control and disposal procedures.

Material Handling: Bulk Liquid Storage and Containment.

- ❑ Store permanent tanks in a paved area surrounded by a dike system that provides sufficient containment for the larger of either 10 percent of the volume of all containers or 110 percent of the volume of the largest tank.
- ❑ Maintain good integrity of all storage tanks.
- ❑ Inspect storage tanks to detect potential leaks and perform preventive maintenance.
- ❑ Inspect piping systems (pipes, pumps, flanges, couplings, hoses, valves) for failures or leaks.
- ❑ Train employees on proper filling and transfer procedures.

Material Handling: Containerized Material Storage

- ❑ Store containerized materials (fuels, paints, solvents, etc. in a protected, secure location and away from drains.
- ❑ Store reactive, ignitable, or flammable liquids in compliance with the local fire code.
- ❑ Identify potentially hazardous materials, their characteristics, and use.
- ❑ Control excessive purchasing, storage, and handling of potentially hazardous materials.
- ❑ Keep records to identify quantity, receipt date, service life, users, and disposal routes.
- ❑ Secure and carefully monitor hazardous materials to prevent theft, vandalism, and misuse of materials.
- ❑ Educate personnel for proper storage, use, cleanup, and disposal of materials.
- ❑ Provide sufficient containment for outdoor storage areas the larger of either 10 percent of the volume of all containers or 110 percent of the volume of the largest tank.
- ❑ Use temporary containment where required by portable drip pans.
- ❑ Use spill troughs for drums with taps.

Material Handling Designated Material Mixing Areas

- ❑ Mix paints and solvents in designated areas away from drains, ditches, piers, and surface waters. Locate designated areas preferably indoors or under a shed.
- ❑ If spills occur,
    - stop the source of the spill immediately
    - contain the liquid until cleanup is complete
    - deploy oil containment booms if the spill may reach the water
    - cover the spill with absorbent material
    - keep the area well ventilated
    - dispose of cleanup materials properly
    - do not use emulsifier or dispersant

Shipboard Process Water Handling

- ❑ Keep process and cooling water used aboard ships separate from sanitary wastes to minimize disposal costs for the sanitary wastes.
- ❑ Keep process and cooling water from contact with spent abrasives and paint to avoid discharging these pollutants.
- ❑ Inspect connecting hoses for leaks.

Shipboard Sanitary Waste Disposal

- ❑ Discharge sanitary wastes from the ship being repaired to the yard's sanitary system or dispose of by a commercial waste disposal company.
- ❑ Use appropriate material transfer procedures, including spill prevention and containment activities.

Bilge and Ballast Water

- ❑ Collect and dispose of bilge and ballast waters that contain oils, solvents, detergents, or other additives to a licensed waste disposal company.

Ship and Boat Building or Repairing Yards

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Pressure Washing

- ❑ Collect discharge water and remove all visible solids before discharging to a sewer system, or where permitted, to a drainage system, or receiving water.
- ❑ Perform pressure washing only in designated areas where wash water containment can be effectively achieved.
- ❑ Use no detergents or additives in the pressure wash water.
- ❑ Direct deck drainage to a collection system sump for settling and/or additional treatment.
- ❑ Implement diagonal trenches or berms and sumps to contain and collect wash water at marine railways.
- ❑ Use solid decking, gutters, and sumps at lift platforms to contain and collect wash water for possible reuse.

Surface Preparation, Sanding, and Paint Removal

- ❑ Enclose, cover, or contain blasting and sanding activities to the extent practical to prevent abrasives, dust, and paint chips from reaching storm sewers or receiving water.
- ❑ Where feasible, cover drains, trenches, and drainage channels to prevent entry of blasting debris to the system.
- ❑ Prohibit uncontained blasting or sanding activities performed over open water.
- ❑ Prohibit blasting or sanding activities performed during windy conditions that render containment ineffective.
- ❑ Inspect and clean sediment traps to ensure the interception and retention of solids prior to entering the drainage system.
- ❑ Sweep accessible areas of the drydock to remove debris and spent sandblasting material prior to flooding.
- ❑ Collect spent abrasives routinely and store under a cover to await proper disposal.

Painting

- ❑ Enclose, cover, or contain painting activities to the maximum extent practical to prevent overspray from reaching the receiving water.
- ❑ Prohibit uncontained spray painting activities over open water.
- ❑ Prohibit spray painting activities during windy conditions which render containment ineffective.
- ❑ Mix paints and solvents in designated areas away from drains, ditches, piers, and surface waters, preferably indoors or under cover.
- ❑ Have absorbent and other cleanup items readily available for immediate cleanup of spills.
- ❑ Allow empty paint cans to dry before disposal.
- ❑ Keep paint and paint thinner away from traffic areas to avoid spills.
- ❑ Recycle paint, paint thinner, and solvents.
- ❑ Train employees on proper painting and spraying techniques, and use effective spray equipment that delivers more paint to the target and less overspray.

Drydock Maintenance

- ❑ Clean and maintain drydock on a regular basis to minimize the potential for pollutants in the storm water runoff.
- ❑ Sweep accessible areas of the drydock to remove debris and spent sandblasting material prior to flooding.
- ❑ If hosing may be used as a removal method, collect wash water to remove solids and potential metals.
- ❑ Clean the remaining areas of the dock after a vessel has been removed and the dock raised.
- ❑ Remove and properly dispose of floatable and other low-density waste (wood, plastic, insulations, etc.).

Drydocking

- ❑ Use plastic barriers beneath the hull, between the hull and drydock walls for containment.
- ❑ Use plastic barriers hung from the flying bridge of the drydock, from the bow or stern of the vessel, or from temporary structures for containment.
- ❑ Weight the bottom edge of the containment tarpaulins or plastic sheeting during a light breeze.
- ❑ Use plywood and/or plastic sheeting to cover open areas between decks when sandblasting (scuppers, railings, freeing ports, ladders, and doorways).
- ❑ Install tie rings or cleats, cable suspension systems, or scaffolding to make implementation containment easier.

Nondrydock Containment

- ❑ Hang tarpaulin from the boat, fixed, or floating platforms to reduce pollutants transported by wind.
- ❑ Pave or tarp surfaces under marine railways.
- ❑ Clean railways before the incoming tide.
- ❑ Haul vessels beyond the high tide zone before work commences or halt work during high tide.
- ❑ Place plastic sheeting or tarpaulin underneath boats to contain and collect waste and spent materials and clean and sweep regularly to remove debris.
- ❑ Use fixed or floating platforms with appropriate plastic or tarpaulin barriers as work surfaces and for containment when work is performed on a vessel in the water to prevent blast material or paint overspray from contacting storm water or the receiving water.
- ❑ Sweep, rather than hose, debris present on the dock.

Engine Maintenance and Repairs

- ❑ Maintain an organized inventory of materials used in the maintenance shop.
- ❑ Dispose of greasy rag, oil filters, air filters, batteries, spent coolant, and degreasers properly.
- ❑ Label and track the recycling of waste material (i.e., used oil, spent solvents, batteries).
- ❑ Drain oil filters before disposal or recycling.
- ❑ Store cracked batteries in a non-leaking secondary container.
- ❑ Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers.
- ❑ Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets.
- ❑ Plug floor drains that are connected to the storm or sanitary sewer; if necessary, install a sump that is pumped regularly.
- ❑ Inspect the maintenance area regularly for proper implementation of control measures.
- ❑ Train employees on proper waste control and disposal procedures.

Material Handling: Bulk Liquid Storage and Containment

- ❑ Store permanent tanks in a paved area surrounded by a dike system which provides sufficient containment for the larger of either 10 percent of the volume of all containers or 110 percent of the volume of the largest tank.
- ❑ Maintain good integrity of all storage tanks.
- ❑ Inspect storage tanks to detect potential leaks and perform preventive maintenance.
- ❑ Inspect piping systems (pipes, pumps, flanges, couplings, hoses, valves) for failures or leaks.
- ❑ Train employees on proper filling and transfer procedures.

Material Handling: Containerized Material Storage

- ❑ Store containerized materials (fuels, paints, solvents, etc. in a protected, secure location and away from drains.
- ❑ Store reactive, ignitable, or flammable liquids in compliance with the local fire code.
- ❑ Identify potentially hazardous materials, their characteristics, and use.
- ❑ Control excessive purchasing, storage, and handling of potentially hazardous materials.
- ❑ Keep records to identify quantity, receipt date, service life, users, and disposal routes.
- ❑ Secure and carefully monitor hazardous materials to prevent theft, vandalism, and misuse of materials.
- ❑ Educate personnel for proper storage, use, cleanup, and disposal of materials.
- ❑ Provide sufficient containment for outdoor storage areas the larger of either 10 percent of the volume of all containers or 110 percent of the volume of the largest tank.
- ❑ Use temporary containment where required by portable drip pans.
- ❑ Use spill troughs for drums with taps.

Material Handling Designated Material Mixing Areas

- ❑ Mix paints and solvents in designated areas away from drains, ditches, piers, and surface waters. Locate designated areas preferably indoors or under a shed.
- ❑ If spills occur,
    - stop the source of the spill immediately
    - contain the liquid until cleanup is complete
    - deploy oil containment booms if the spill may reach the water
    - cover the spill with absorbent material
    - keep the area well ventilated
    - dispose of cleanup materials properly
    - do not use emulsifier or dispersant

Shipboard Process Water Handling

- ❑ Keep process and cooling water used aboard ships separate from sanitary wastes to minimize disposal costs for the sanitary wastes.
- ❑ Keep process and cooling water from contact with spent abrasives and paint to avoid discharging these pollutants.
- ❑ Inspect connecting hoses for leaks.

Shipboard Sanitary Waste Disposal

- ❑ Discharge sanitary wastes from the ship being repaired to the yard's sanitary system or dispose of by a commercial waste disposal company.
- ❑ Use appropriate material transfer procedures, including spill prevention and containment activities.

Bilge and Ballast Water

- ❑ Collect and dispose of bilge and ballast waters that contain oils, solvents, detergents, or other additives to a licensed waste disposal company.

Vehicle and Equipment Maintenance and Deicing Areas at Air Transportation Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Aircraft, Ground Vehicle and Equipment Maintenance Areas

- ❑ Perform all maintenance activities indoors.
- ❑ Maintain an organized inventory of materials used.
- ❑ Drain all parts of fluids prior to disposal.
- ❑ Prohibit the practice of hosing down the apron or hangar floor.
- ❑ Use dry cleanup methods in the event of spills.
- ❑ Collect the storm water runoff from maintenance and/or service areas and provide treatment or recycling.

Aircraft, Ground Vehicle, and Equipment Cleaning Areas

- ❑ Perform all cleaning operations indoors.
- ❑ Collect the storm water runoff from the area and provide treatment or recycling.

Aircraft, Ground Vehicle, and Equipment Storage Areas

- ❑ The storage of aircraft, ground vehicles, and equipment awaiting maintenance may be confined to designated areas.
- ❑ Store aircraft and ground vehicles indoors.
- ❑ Use drip pans for the collection of fluid leaks.
- ❑ Consider perimeter drains, dikes or berms surrounding storage areas.

Material Storage Areas

- ❑ Storage units of all materials (e.g., used oils, hydraulic fluids, spent solvents and waste aircraft fuel) may be maintained in good condition, so as to prevent contamination of storm water, and plainly labeled (e.g., "used oil", "contaminated Jet A", etc.).
- ❑ Store materials indoors.
- ❑ Maintain a centralized storage areas for waste materials.
- ❑ Install berms and dikes around storage areas.

Airport Fuel System and Fueling Areas

- ❑ Where above ground storage timers are present, pollution prevention plan requirements should be consistent with requirements established in 40 CFR 112.7 guidelines for the preparation and implementation of a Spill Prevention Control and Countermeasure (SPCC) plan.

Deicing Operations

- ❑ Evaluate present chemical application rates to ensure against excessive over application. Devices which meter the amount of chemical being applied to runways help to prevent over application.
- ❑ Emphasize anti-icing operations which would preclude the need to deice; less chemical is required to prevent the formation of ice on a runway than is required to remove ice from a runway.
- ❑ Consider installing runway ice detection systems (RID) otherwise known as Apavement sensors≡ which monitor runway temperatures. Pavement sensors provide an indication of when runway temperatures are approaching freezing conditions, thus alerting operators of the need to conduct anti-icing operations.
- ❑ Deicing/anti-icing chemicals applied during extremely cold, dry conditions, are often ineffective since they do not adhere to the ice surface and may be scattered as a result of windy conditions or aircraft movement. In an effort to improve the efficiency of the application, operators should consider prewetting the deicing chemical to improve the adhesion to the iced surface.
- ❑ Consider using chemicals which have less of an environmental impact on receiving waters. Potassium acetate, has a lower oxygen demand than glycol, is nontoxic to aquatic habitat or humans, and was approved by the FAA for runway deicing operations in November, 1991 (AC No. 150/520030A CHG 1).
- ❑ Consider pretreating aircraft with hot water or forced air prior to the application of chemical deicer to reduce the amount of chemical deicer used during the operation.
- ❑ When deicing/anti-icing operations are conducted on aircraft during periods of dry weather, operators should ensure that storm water inlets are blocked to prevent the discharge of deicing/anti-icing chemicals to the storm sewer system. Mechanical vacuum systems or other similar devices can then be used to collect the spent deicing chemical from the apron surface for proper disposal to prevent those materials from later becoming a source of storm water contamination.
- ❑ Establishing a centralized deicing station would provide better control over aircraft deicing/anti-icing operations in that it enables operators to readily collect spent deicing/anti-icing chemicals.
- ❑ Once spent deicer/anti-icer chemicals are collected, operators can select from various methods of disposal such as disposal to sanitary sewer facility, retention and detention ponds, or recycling.

Treatment Works

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Preparation of Biological and Physical Treatment Process

- ❑ Use drip pans under drums and equipment where feasible.
- ❑ Store process chemicals inside buildings.
- ❑ Inspect the storage yard for filling drip pans and other problems regularly.
- ❑ Train employees on procedures for storing and inspecting chemicals.

Soil Amending and Grass Fertilizing

- ❑ Use the appropriate amount of fertilizer.
- ❑ Do not overfertilize.
- ❑ Train employee on proper fertilizing techniques.

Liquid Storage in Above Ground Storage Containers

- ❑ Maintain good integrity of all storage containers.
- ❑ Install safeguards (such as diking or berming) against accidental releases at the storage area.
- ❑ Inspect storage tanks to detect potential leaks and perform preventive maintenance.
- ❑ Inspect piping systems (pipes, pumps, flanges, couplings, hoses, and valves) for failures or leaks.
- ❑ Train employees on proper filling and transfer procedures.

Pest Control

- ❑ Minimize pesticide application.
- ❑ Only apply pesticide if needed.
- ❑ Train employees on proper pesticide application.

Sludge Drying Beds

- ❑ Ensure drying bed is draining properly (e.g., check for clogging); avoid overfilling drying bed; grade the land to divert flow around drying bed; berm, dike, or curb drying bed areas; cover drying beds.

Sludge Storage Piles

- ❑ Confine storage of sludge to a designated area as far from any receiving water body as possible; store sludge on an impervious surface (e.g., concrete pad); grade the land to divert flow around storage piles; berm, dike, or curb sludge storage piles; cover sludge storage piles.

Sludge Transfer

- ❑ Promptly remove any sludge spilled during transfer; conduct transfer operations over an impervious surface; avoid transferring sludge during rain events; grade the land to divert flow around transfer areas; berm, curb, or dike transfer areas; avoid locating transfer operations near receiving water bodies.

Incineration-Ash Impoundments/ Piles

- ❑ Line ash impoundments with clay (or other type of impervious material); ensure ash impoundments will hold maximum volume of ash and a 10-year, 24-hour rain event; curb, berm, or dike ash storage areas; avoid locating ash storage areas near receiving water bodies.

Miscellaneous

- ❑ Properly dispose of grit/scum; properly dispose of screens on a daily basis; maximize vegetative cover to stabilize soil and reduce erosion.

Food and Kindred Products Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Raw Material Unloading/Product Loading

- ❑ Ensure that a facility representative is present during unloading/loading activities.
- ❑ Inspect the unloading/loading areas to detect problems before they occur.
- ❑ Close storm drains during loading/unloading activities in surrounding area.
- ❑ Inspect all containers prior to unloading/loading of any raw or spent materials.
- ❑ Install backflow prevention devices on liquid transfer equipment.
- ❑ Inspect all connection equipment (e.g., hoses and couplings), and replace when necessary, before performing unloading/loading activities.
- ❑ Perform all unloading/loading activities in a covered and/or enclosed areas.
- ❑ Use drip pans when loading/unloading liquid product.
- ❑ Situate loading/unloading areas indoors or in a covered area.
- ❑ Use rubber seals in truck loading dock areas to contain spills indoors.
- ❑ Drain hoses back into truck, railcar, etc. after loading/unloading materials.
- ❑ Install high level alarm on tanks to prevent overfilling.
- ❑ Ensure that berms and dikes are built around the unloading/loading areas, if applicable.
- ❑ If outside or in covered areas, minimize run on of storm water into the unloading/loading areas by grading the areas to ensure that storm water runs off.
- ❑ Use dry cleanup methods for unloading/loading areas rather than washing the areas down.
- ❑ Train employees on proper unloading/loading techniques.
- ❑ Initiate an inventory control for all raw and spent materials.

Storage Containers: Liquid Storage

- ❑ Inspect the external condition (corrosion, leaks) of the containers.
- ❑ Inspect the general area around the containers.
- ❑ Ensure that beams and dikes are built around the containers.
- ❑ Cover and/or enclose.
- ❑ Bulkhead liquid storage tanks indoors (i.e., tank outlets located inside buildings).
- ❑ Ensure that all containers are closed (e.g., valves shut, lids and manways sealed, caps closed).
- ❑ Wash containers indoors before storing empty containers outdoors.
- ❑ If outside or in a covered area, minimize run on of storm water into a storage area by grading area to ensure that storm water runs Aoff≅ and not Aon≅.
- ❑ Train employees on proper storage techniques (e.g., filling and transferring contents).
- ❑ Maintain employee training on proper handling and transportation of materials.
- ❑ Maintain an inventory control of all raw and spent materials.
- ❑ Employ measures to protect against spillage from the overflows (e.g., high level sensors, alarms).

Storage Containers: Solid Storage

- ❑ Consider vacuum emission control systems for airborne dust and particulate matter.

Waste Management: Wastewater

- ❑ Perform treatment processes in-house, if possible.
- ❑ Inspect the outside pipe connections (couplings, valve seals and gaskets, flanges, etc.) of the treatment system for leaks, corrosion, and poor maintenance upkeep.

Waste Management: Solid Waste

- ❑ Inspect the general area around the solid waste (e.g., look for signs of leaching).
- ❑ Store waste so that it is physically contained (dumpsters, drums, bags).
- ❑ Store waste in an enclosed/covered area.
- ❑ If outside or in a covered area, minimize exposure to storm water by grading the area to ensure that storm water runs Aoff≅ and not Aon≅.
- ❑ Ensure hazardous waste disposal practices are performed in accordance with Federal, State, and local requirements.
- ❑ Route trash compactor leakage to treatment system or sanitary sewer.

Waste Management: Air Emissions

- ❑ Clean around vents and stacks to atmosphere from process and storage areas.
- ❑ Place tubs around vents and stacks for easy collection of settling particles.
- ❑ Inspect air emission control systems (e.g., baghouses) regularly and repair and replace as necessary.
- ❑ Route overflows/condensates from process vents to onsite treatment system or to the sanitary sewer.

Pest Control

- ❑ Follow manufacturers directions for application of pest control materials to site.
- ❑ Time application for dry weather conditions.
- ❑ Store partially full containers indoors or undercover.
- ❑ Apply insecticides during breeding months.
- ❑ Protect rat bait houses from storm water.

Improper Connections to the Storm Drain

- ❑ Perform smoke or dye testing to determine if interconnections exist between the sanitary sewer and storm drain.
- ❑ Plug all floor drains leading to storm drains.
- ❑ Update facility schematics to accurately reflect all plumbing connections.

General

- ❑ Offer employee incentives so that employees will develop cost effective, worker efficient BMPs.
- ❑ Request outside firm to conduct a storm water inspection/audit.
- ❑ Inspect material transfer lines/connections for leaks or signs of wear and repair or replace as necessary.

Activities for Specific Facilities:

Meat Products

- ❑ Inspect area around animal holding pens.
- ❑ Enclose/cover fowl hanging area.
- ❑ Enclose/cover the animal holding pens.
- ❑ Grade the areas around the animal holding pens to ensure storm water runs Aoff≡ and not Aon≡ to the holding pen.
- ❑ Train employees on proper material (i.e., hide, hair, feathers, animal parts) clean-up procedures around and within the animal holding pens.
- ❑ Store animal manure and other materials from clean-up activities in appropriate containers in an enclosed/covered area.
- ❑ Area for trailers holding empty bird cages should have storm water run on/runoff controls in place.
- ❑ Use mechanical sweepers around site to clean up fugitive feathers, dust, and manure.

Dairy Products

- ❑ Inspect area around aged/spoiled dairy products.
- ❑ Store aged/spoiled dairy products in enclosed area.
- ❑ Train employees on proper disposal methods for all aged/spoiled dairy products.
- ❑ Ensure that all aged/spoiled product (e.g., bottles, cartons, plastic containers) are disposed of in a proper manner (bagged, covered).

Canned Frozen and Preserved Fruits, Vegetables, and Frozen Specialties

- ❑ Inspect all fruit and vegetable storage areas.
- ❑ Store all fruits and vegetables in appropriate containers (e.g., bins, bushels, baskets, buckets) and in enclosed/covered areas.
- ❑ Store empty fruit and vegetable containers in an enclosed/covered area.
- ❑ Train employees on proper handling/disposal methods for fresh/rotten fruits and vegetables.
- ❑ Consider air emission control systems for all cooking processes to reduce particulate matter.
- ❑ Minimize fruit and vegetable storage time outdoors.

Grain Mills

- ❑ Inspect the general area around the grain storage.
- ❑ Store all grain in appropriate containers (e.g., silos, hoppers) in an enclosed/covered area.
- ❑ Train employees on grain handling procedures.
- ❑ Consider a vacuum control system in all grain mixing areas.

Bakery Products

- ❑ Inspect ingredient storage areas.
- ❑ Store all ingredients (e.g., corn sweeteners, flour, shortening, syrup, vegetable oils) in appropriate containers (e.g., tanks, drums, bags) in an enclosed/covered area.
- ❑ Remove flour/oil dust accumulation around ventilation exhaust systems.
- ❑ Install an air emission control system for all baking processes to reduce particulate matter.

Sugar and Confectionery

- ❑ Consider a vacuum control system in all granular and powdered processing areas.

Fats & Oils

- ❑ Inspect all fats and oils storage areas.
- ❑ Store all fats and oils, (e.g., butcher shop materials, hair, hide, tallow, bone meal, and offal) in enclosed/covered areas.
- ❑ Ensure all fats and oils are physically contained.

Beverages

- ❑ Ensure grain is stored in enclosed/covered area.
- ❑ Consider an air emission control system for all grain handling and brewing processes.
- ❑ Protect reusable beverage containers that are stored outdoors from storm water contact.

Textile Mills, Apparel, and Other Fabric Product Manufacturing Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Preparation (e.g., Desizing and Scouring).

- ❑ Waste stream reuse for typical bleach unit processing; recycle J-box or kier drain wastes to saturator.
- ❑ Make use of countercurrent washing.
- ❑ Use washer waste from scour operation for batch scouring.

Dyeing

- ❑ Perform analysis of spent dye baths for residual materials.
- ❑ Where feasible, obtain background information and data necessary before making product substitutions. This includes OSHA form 20 data and technical data.
- ❑ Be aware of potential problem chemicals, such as aryl phenol ethoxylates, chlorinated aromatics, chlorinated aromatics, and metals.
- ❑ Employ pad batch dyeing to eliminate the need for salts and chemical specialties from the dyebath, with associated reduction in cost and pollution source reduction.

Finishing

- ❑ Reuse residual portions of finish mixes as much as possible by adding back to them the required components to make up the next mix.
- ❑ Return noncontact cooling water and stream condensates to either a hot water holding tank or a clear well. If neither is available, segregate waste streams from sources which do not generally require treatment from other waste streams that do require treatment.

General Water Conservation Techniques

- ❑ Use "low liquor ratio" dyeing machines where practicable.
- ❑ Use of foam processing (mercerizing, bleaching, dyeing, finishing) where practicable as a water conservation process.

Chemical Screening and Inventory Control

- ❑ Employ prescreening practices to evaluate and consider chemicals on a wide range of environmental and health impact criteria.
- ❑ Develop and perform a routine raw material quality control program.
- ❑ Review and develop procedures for source reduction of metals.
- ❑ Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers.
- ❑ Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets.
- ❑ Plug floor drains that are connected to the storm or sanitary sewer; if necessary, install a sump that is pumped regularly.
- ❑ Inspect the maintenance area regularly for proper implementation of control measures.
- ❑ Train employees on proper waste control and disposal procedures.

Material Handling: Bulk Liquid Storage and Containment

- ❑ Store permanent tanks in a paved area surrounded by a dike system which provides sufficient containment for the larger of either 10 percent of the volume of all containers or 110 percent of the volume of the largest tank.
- ❑ Maintain good integrity of all storage tanks.
- ❑ Inspect storage tanks to detect potential leaks and perform preventive maintenance.
- ❑ Inspect piping systems (pipes, pumps, flanges, couplings, hoses, valves) for failures or leaks.
- ❑ Train employees on proper filling and transfer procedures.

Material Handling: Containerized Material Storage

- ❑ Store containerized materials (fuels, paints, solvents, etc.) in a protected, secure location and away from drains.
- ❑ Store reactive, ignitable, or flammable liquids in compliance with the local fire code.
- ❑ Label all materials clearly.
- ❑ Identify potentially hazardous materials, their characteristics, and use.
- ❑ Control excessive purchasing, storage, and handling of potentially hazardous materials.
- ❑ Keep records to identify quantity, receipt date, service life, users, and disposal routes.
- ❑ Secure and carefully monitor hazardous materials to prevent theft, vandalism, and misuse of materials.
- ❑ Educate personnel for proper storage, use, cleanup, and disposal of materials.
- ❑ Provide sufficient containment for outdoor storage areas for the larger of either 10 percent of the volume of all containers or 110 percent of the volume of the largest tank.
- ❑ Use temporary containment where required by portable drip pans.
- ❑ Use spill troughs for drums with taps.

Material Handling: Designated Material Mixing Areas

- ❑ Mix solvents in designated areas away from drains, ditches, and surface waters.
- ❑ If spills occur,
  - stop the source of the spill immediately
  - contain the liquid until cleanup is complete
  - deploy oil containment booms if the spill may reach the water
  - cover the spill with absorbent material
  - keep the area well ventilated
  - dispose of cleanup materials properly
  - do not use emulsifier or dispersant

Wood and Metal Furniture and Fixture Manufacturing Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Outdoor Unloading and Loading

- ❑ Confine loading/unloading activities to a designated area.
- ❑ Perform all loading/unloading activities in a covered or enclosed area.
- ❑ Close storm drains during loading/unloading activities in surrounding areas.
- ❑ Avoid loading/unloading materials in the rain.
- ❑ Inspect all containers prior to loading/unloading of any raw or spent materials.
- ❑ Berm, curb, or dike loading/unloading areas.
- ❑ Use dry clean-up methods instead of washing the areas down.
- ❑ Train employees on proper loading/unloading techniques.

Outdoor Material Storage

- ❑ Confine storage of raw materials, parts, and equipment to designated areas.
- ❑ Train employees on proper waste control and disposal.
- ❑ Berm, curb, or dike any areas around tanks.
- ❑ Ensure that all containers are properly sealed and valves closed.
- ❑ Inventory all raw and spent materials.
- ❑ Inspect air emission control systems regularly, and repair or replace when necessary.
- ❑ Store wastes in covered, leak proof containers (e.g., dumpsters, drums).
- ❑ Store wastes in enclosed and/or covered areas.
- ❑ Ensure hazardous and solid waste disposal practices are performed in accordance with applicable Federal, State, and local requirements.
- ❑ Ship all wastes to offsite landfills or treatment facilities.

Printing and Publishing Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Plate Preparation

- ❑ Use aqueous-developed lithographic plates or wipe-on plates.

Printing

- ❑ Use press wipes as long as possible before discarding or laundering; dirty ones for the first pass, clean ones for the second pass.
- ❑ Squeeze or centrifuge solvent out of dirty rags.
- ❑ Set up an in-house dirty rag cleaning operation if warranted or send to approved industrial laundries, if available.
- ❑ Dedicate press for inks with hazardous pigments/solvents.
- ❑ Segregate used oil from solvents or other materials.
- ❑ Use water-based inks in gravure and flexographic printing process.

Clean Up

- ❑ Label sinks as to proper disposal of liquids.
- ❑ Keep equipment in good condition.
- ❑ Use doctor blades and squeegees to remove as much ink as possible prior to cleaning with solvent and rags.
- ❑ Control solvent use during equipment cleaning, use only what you need.
- ❑ Designate special areas for draining or replacing fluids.
- ❑ Substitute nontoxic or less toxic cleaning solvents.
- ❑ Recover waste solvents onsite with batch distillation if warranted or utilize professional solvent recyclers.
- ❑ Centralize liquid solvent cleaning in one location. Have refresher courses in operating and safety procedures.

Stencil Preparation for Screen Printing

- ❑ Recapture excess ink from silkscreen process before washing the screen to decrease amount of ink used and cleaning emulsion used.

Material Handling and Storage Areas

- ❑ Store containerized materials (fuels, paints, inks, solvents, etc.) in a protected, secure location and away from drains.
- ❑ Store reactive, ignitable, or flammable liquids in compliance with the local fire code.
- ❑ Identify potentially hazardous materials, their characteristics, and use.
- ❑ Eliminate/reduce exposure to storm water.
- ❑ Control excessive purchasing, storage, and handling of potentially hazardous materials.
- ❑ Keep records to identify quantity, receipt date, service life, users, and disposal routes secure and carefully monitor hazardous materials to prevent theft, vandalism, and misuse of materials.
- ❑ Educate personnel for proper storage, use, cleanup, and disposal of materials.
- ❑ Maintain good integrity of all storage tanks inspect storage tanks to detect potential leaks and perform preventive maintenance.
- ❑ Provide sufficient containment for outdoor storage areas for the larger of either 10 percent of the volume of all containers or 110 percent of the volume of the largest tank.
- ❑ Use temporary containment where required by portable drip pans.
- ❑ Use spill troughs for drums with taps.
- ❑ Train employees on proper filling and transfer procedures.
- ❑ Inspect piping systems (pipes, pumps, flanges, couplings, hoses, valves) for failures or leaks.
- ❑ Handle solvents in designated areas away from drains, ditches, and surface waters. Locate designated areas preferably indoors or under a shed.
- ❑ If spills occur,
    - stop the source of the spill immediately
    - contain the liquid until cleanup is complete
    - deploy oil containment booms if the spill may reach the water
    - cover the spill with absorbent material
    - keep the area well ventilated
    - dispose of cleanup materials properly
    - do not use emulsifier or dispersant

Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Outdoor Unloading and Loading

- ❑ Confine loading/unloading activities to a designated area.
- ❑ Consider performing loading/unloading activities indoors or in a covered area.
- ❑ Consider covering loading/unloading area with permanent cover (e.g., roofs) or temporary cover (e.g., tarps).
- ❑ Close storm drains during loading/unloading activities in surrounding areas.
- ❑ Avoid loading/unloading materials in the rain.
- ❑ Inspect the unloading/loading areas to detect problems before they occur.
- ❑ Inspect all containers prior to loading/unloading of any raw or spent materials.
- ❑ Consider berming, curbing, or diking loading/unloading areas.
- ❑ Dead-end sump where spilled materials could be directed.
- ❑ Drip pans under hoses.
- ❑ Use dry clean-up methods instead of washing the areas down.
- ❑ Train employees on proper loading/unloading techniques and spill prevention and response.

Outdoor Material Storage

- ❑ Confine storage of materials, parts, and equipment to designated areas.
- ❑ Consider secondary containment using curbing, berming, or diking all liquid storage areas.
- ❑ Train employees on proper waste control and disposal.
- ❑ Train employees in spill prevention and response.
- ❑ Consider covering tanks.
- ❑ Ensure that all containers are closed (e.g., valves shut, lids sealed, caps closed).
- ❑ Wash and rinse containers indoors before storing them outdoors.
- ❑ If outside or in covered areas, minimize run on by grading the land to divert flow away from containers.
- ❑ Leak detection and container integrity testing.
- ❑ Direct runoff to onsite retention pond.
- ❑ Inventory all raw and spent materials.
- ❑ Clean around vents and stacks.
- ❑ Place tubs around vents and stacks to collect particulate.
- ❑ Inspect air emission control systems (e.g., baghouses) regularly, and repair or replace when necessary.
- ❑ Store wastes in covered, leak proof containers (e.g., dumpsters, drums).
- ❑ Consider shipping all wastes to offsite landfills or treatment facilities.
- ❑ Ensure hazardous waste disposal practices are performed in accordance with Federal, State, and local requirements.

Zinc Handling

- ❑ Train employee train regarding the handling and emptying of zinc bags.
- ❑ Indoor storage of zinc bags.
- ❑ Thoroughly cleanup zinc spills without washing the zinc into a storm drain.
- ❑ Consider the use of 2,500 pound sacks (from which spills are less likely) rather than 50 to 100 pound sacks.
- ❑ Provide a cover for the dumpster or move the dumpster inside.
- ❑ Provide a lining for the dumpster.
- ❑ Review dust collectors and baghouses as possible sources of zinc. Improperly operating dust collectors or baghouses may be replaced or repaired as appropriate; the plan may also provide for regular maintenance of these facilities.
- ❑ Review dust generation from rubber grinding operations and as appropriate, install a dust collection system.
- ❑ Prevent and/or clean up drips or spills of zinc stearate slurry that may be released to a storm drain. Alternate compounds to zinc stearate may also be considered.

Leather Tanning and Finishing Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Temporary Outdoor Storage of Fresh or Brine Cured Hides

- ❑ Store hides indoors if possible.
- ❑ Cover the hides with a roof or temporary covering (e.g.,polyethylene, tarpaulin etc.).
- ❑ Minimize storm water run on by enclosing the area or building a berm around the area.
- ❑ Inspect area regularly for proper implementation of good housekeeping and control measures.

Beamhouse Operations

- ❑ Store chemical drums & bags and empty lime & depilatory chemical containers indoors if possible, preventive maintenance.
- ❑ Cover chemical drums & bags, empty lime & depilatory chemical containers and leather scraps with roof or temporary covering (e.g., tarpaulins, polyethylene) and store on elevated impermeable surface.
- ❑ Curbing, containment dikes around chemical storage, empty lime & depilatory chemical containers and leather scrap storage area.
- ❑ Inspect area regularly for leaking drums, broken bags, proper implementation of good housekeeping and control measures, (broken cracked dikes), material inventory, material storage and operation & maintenance.
- ❑ Clean up leaks & spills quickly & completely, use drip pans for leaking equipment.
- ❑ Good Housekeeping-all paved areas should be swept regularly, eliminate unnecessary flushing with water and label chemical drums and containers.
- ❑ Employee training on good housekeeping, proper handling of chemicals.

Tanyards

- ❑ BMPs for Tanyards (empty chemical containers and hides, leather dust, shavings) are the same as those listed above for Beamhouse Activities.

Retan and Wet Finish

- ❑ Dust reduction through frequent inspection of vacuum, collector (bag & cyclone), and filter systems.
- ❑ Dust reduction through enclosure and covering.
- ❑ Preventive maintenance/inspection of dust collection systems.
- ❑ Good Housekeeping-regular sweeping of paved areas, eliminate unnecessary flushing with water and label chemical drums and containers.
- ❑ Employee training on good housekeeping, proper handling of chemicals.

Dry Finish

- ❑ Preventive maintenance, inspection of spray booths.
- ❑ Employee training on proper disposal of spent solvents.

Receiving and Shipping

- ❑ Cover shipping & receiving area.
- ❑ Cover trucks.
- ❑ Vehicle positioning-locating trucks while transferring materials to prevent spills onto the ground surface.
- ❑ Grade berm or curb area to prevent storm water run on contamination, divert rain gutters away from loading area.
- ❑ Clean spills immediately.
- ❑ Inspect trucks for leaks.
- ❑ Employee training in spill prevention.

Liquid Storage in Above Ground Tanks

- ❑ Clearly tag valves to avoid human error.
- ❑ Install overflow protection devices on tank systems to warn operator or to automatically shut down transfer pumps when tanks reach full capacity.
- ❑ Secondary containment around tanks.
- ❑ Employee training.
- ❑ Inspection of tank foundations, connections, coatings, valves and piping systems.
- ❑ Comply with existing spill prevention, cleanup and countermeasure plans (SPCC plan) and State and Federal laws.
- ❑ Integrity testing by qualified professional.

Improper Connections to Storm Drains

- ❑ Plug all floor drains connected to storm drain.
- ❑ Perform smoke or dye testing to determine if interconnections exist between sanitary water system and storm drain system.
- ❑ Update facility schematics to accurately reflect all plumbing connections.
- ❑ Install a safeguard against washwaters from processing areas entering the storm sewer unless permitted.
- ❑ Train employees on proper disposal practices for all materials.

Waste Management

- ❑ Conduct waste reduction assessment-develop guidelines for the elimination of waste generation emissions.
- ❑ Institute industrial waste source reduction and recycling BMPs.
- ❑ Move waste management activities indoors (after safety concerns are addressed) and cover waste piles, dumpsters, hoppers, place on impermeable elevated surfaces.
- ❑ Prevent storm water run on by curbing, building berms.
- ❑ Cover trucks & inspect for leaking wastes.
- ❑ Inspection of waste management areas for leaking containers, spills, damaged containers, uncovered waste piles, dumpsters, hoppers.
- ❑ Inspection of roof areas & outside equipment.
- ❑ Develop and maintain proper erosion control or site stabilization measures.
- ❑ Train employees on proper disposal practices for all materials.

Fabricated Metal Products Industry

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Metal Fabricating Areas

- ❑ Sweep fabrication areas. Absorb dust through a vacuum system to avoid accumulation on roof tops and onto the ground.
- ❑ Sweep on a regular basis all accessible paved areas.
- ❑ Maintain floors in a clean and dry condition.
- ❑ Remove waste and dispose of regularly.
- ❑ Remove obsolete equipment expeditiously.
- ❑ Train employees on good housekeeping measures.

Storage Areas for Raw Metal

- ❑ The storage of raw materials should be under a covered area whenever possible and protected from contact with the ground.
- ❑ The amount of material stored should be minimized to avoid corrosive activity from longterm exposed materials.
- ❑ Diking or berming the area to prevent or minimize runon may be considered.
- ❑ Check raw metals for corrosion.
- ❑ Keep area neat and orderly, stack neatly on pallets or off the ground; and cover exposed materials.

Receiving, Unloading, and Loading Areas

- ❑ These areas should be enclosed where feasible using either curbing, berming, diking or other accepted containment systems in case of spills during delivery of chemicals such as lubricants, coolants, rust preventatives, solvents, oil, sodium hydroxide, hydrochloric acid, calcium chloride, polymers, sulfuric acid, and other chemicals used in the metal fabricating processes.
- ❑ Directing roof down spouts away from loading sites and equipment and onto grassy or vegetated areas should help prevent storm water contamination by pollutants that have accumulated in these areas.
- ❑ Clean up spills immediately.
- ❑ Check for leaks and remedy problems regularly.
- ❑ Unload under covered areas when possible.

Storage of Heavy Equipment

- ❑ Vehicles should be stored indoors when possible.
- ❑ If stored outdoors, the use of gravel, concrete or other porous surfaces should be considered to minimize or prevent heavy equipment from creating ditches or other conveyances that would cause sedimentation runoff and increase TSS loadings.
- ❑ Clean equipment prior to storage.
- ❑ Divert drainage to the grass swales, filter strips, retention ponds, or holding tanks.

Metal Working Fluid Areas

- ❑ Store used metal working fluid with fine metal dust indoors.
- ❑ Use tight sealing lids on all fluid containers.
- ❑ Use straw, clay absorbents, sawdust, or synthetic absorbents to confine or contain any spills, or other absorbent material and establish recycling programs for used fluids when possible.

Unprotected Liquid Storage Tanks

- ❑ Cover all tanks whenever possible.
- ❑ Berm tanks whenever possible.
- ❑ Dike area or install grass filters to contain spills.
- ❑ Keep area clean.
- ❑ Check piping, valves and other related equipment on a regular basis.

Chemical Cleaners and Rinse Water

- ❑ Use drip pans and other spill devices to collect spills or solvents and other liquid cleaners.
- ❑ Recycle wastewater.
- ❑ Store recyclable waste indoors or in covered containers.
- ❑ Substitute nontoxic cleaning agents when possible.

Raw Steel Collection Areas

- ❑ Materials should be kept in a covered storage bin or kept inside until pickup.
- ❑ The use of pitched structures should be considered.
- ❑ Collect scrap metals, fines, iron dust and store under cover and recycle.

Paints and Painting Equipment

- ❑ Paint and sand indoors when possible.
- ❑ Avoid painting and sandblasting operations outdoors in windy weather conditions.
- ❑ If done outside, enclose sanding and painting areas with tarps or plastic sheeting.
- ❑ Use waterbased paints when possible.
- ❑ Use tarps, drip pans, or other spill collection devices to contain and collect spills of paints, solvents or other liquid material.

Vehicle and Equipment Maintenance Areas

- ❑ Changing fluids or parts should be done indoors when possible.
- ❑ If maintenance is performed outdoors, fluids used in maintaining these vehicles should be contained in the area by using drip pans, large plastic sheets, canvas or other similar controls under the vehicles, or berming the area.
- ❑ Hydraulic fluids should be properly stored to prevent leakage and storm water contamination.
- ❑ Discard fluids properly or recycle if possible.

Hazardous Waste Storage Areas

- ❑ All hazardous waste may be stored in sealed drums.
- ❑ Establish centralized drum storage satellite areas throughout the complex to store these materials.
- ❑ Store indoors or under cover where possible.
- ❑ Do not stack containers in such a way as to cause leaks or damage to the containers.
- ❑ Use pallets to store containers when possible.
- ❑ Store materials with adequate space for traffic without disturbing drums.
- ❑ Maintain low inventory level of chemicals based on need.
- ❑ Dike or use grass swales, ditches or other containment to prevent runon or runoff in case of spills.
- ❑ Label materials clearly.
- ❑ Check for corrosion and leakage of storage containers.
- ❑ Properly dispose of outdated materials.
- ❑ Post notices prohibiting dumping of materials into storm drains.
- ❑ All other applicable Federal, State, and local regulations may be followed.

Transporting Chemicals to Storage Areas

- ❑ Forklift operators should be trained to avoid puncturing drums.
- ❑ Store drums as close to operational building as possible.
- ❑ Label all drums with proper warning and handling instructions.

Finished Products (Galvanized) Storage

- ❑ Materials should be stored in such a way to minimize contact with precipitation and runoff.
- ❑ Consider storing finished products indoors, on a wooden pallets concrete pad, gravel surface, or other impervious surface.

Wooden Pallets and Empty Drums

- ❑ Clean contaminated wooden pallets.
- ❑ Cover empty drums.
- ❑ Cover contaminated wooden pallets.
- ❑ Store drums and pallets indoors.
- ❑ Clean empty drums.
- ❑ Store pallets and drums on concrete pads.

Retention Ponds (Lagoon)

- ❑ Provide routine maintenance.
- ❑ Remove excess sludge periodically.
- ❑ Aerate periodically to maintain pond's aerobic character and ecological balance.

Facilities that Manufacture Transportation Equipment, Industrial, or Commercial Machinery

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Outdoor Unloading and Loading

- ❑ Confine loading/unloading activities to a designated area.
- ❑ Consider performing loading/unloading activities indoors or in a covered area.
- ❑ Consider covering loading/unloading area with permanent cover (e.g., roofs) or temporary cover (e.g., tarps).
- ❑ Close storm drains during loading/unloading activities in surrounding areas.
- ❑ Avoid loading/unloading materials in the rain.
- ❑ Inspect the unloading/loading areas to detect problems before they occur.
- ❑ Inspect all containers prior to loading/unloading of any raw or spent materials.
- ❑ Consider berming, curbing, or diking loading/unloading areas.
- ❑ Use dry cleanup methods instead of washing the areas down.
- ❑ Train employees on proper loading/unloading techniques.

Outdoor Material Storage

- ❑ Confine storage of materials, parts, and equipment to designated areas.
- ❑ Consider curbing, berming, or diking all liquid storage areas.
- ❑ Train employees on proper waste control and disposal.
- ❑ Consider covering tanks.
- ❑ Ensure that all containers are closed (e.g., valves shut, lids sealed, caps closed).
- ❑ Wash and rinse containers indoors before storing them outdoors.
- ❑ If outside or in covered areas, minimize runon of storm water by grading the land to divert flow away from containers.
- ❑ Inventory all raw and spent materials.
- ❑ Clean around vents and stacks.
- ❑ Place tubs around vents and stacks to collect particulate.
- ❑ Inspect air emission control systems (e.g., baghouses) regularly, and repair or replace when necessary.
- ❑ Store wastes in covered, leak proof containers (e.g., dumpsters, drums).
- ❑ Consider shipping all wastes to offsite landfills or treatment facilities.
- ❑ Ensure hazardous waste disposal practices are performed in accordance with Federal, State, and local requirements.

Manufacturers of Electronic and Electrical Equipment

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Outdoor Unloading and Loading

- ❑ Confine loading/unloading activities to a designated area.
- ❑ Consider performing loading/unloading activities indoors or in a covered area.
- ❑ Consider covering loading/unloading area with permanent cover (e.g., roofs) or temporary cover (e.g., tarps).
- ❑ Close storm drains during loading/unloading activities in surrounding areas.
- ❑ Avoid loading/unloading materials in the rain.
- ❑ Inspect the unloading/loading areas to detect problems before they occur.
- ❑ Inspect all containers prior to loading/unloading of any raw or spent materials.
- ❑ Consider berming, curbing, or diking loading/unloading areas.
- ❑ Dead-end sump where spilled materials could be directed.
- ❑ Drip pans under hoses.
- ❑ Use dry clean-up methods instead of washing the areas down.
- ❑ Train employees on proper loading/unloading techniques and spill prevention and response.

Outdoor Material Storage

- ❑ Confine storage of materials, parts, and equipment to designated areas.
- ❑ Consider secondary containment using curbing, berming, or diking all liquid storage areas.
- ❑ Train employees in spill prevention and response techniques.
- ❑ Train employees on proper waste control and disposal.
- ❑ Consider covering tanks.
- ❑ Ensure that all containers are closed (e.g., valves shut, lids sealed, caps closed).
- ❑ Wash and rinse containers indoors before storing them outdoors.
- ❑ If outside or in covered areas, minimize run on of storm water by grading the land to divert flow away from containers.
- ❑ Leak detection and container integrity testing.
- ❑ Direct runoff to onsite retention pond.
- ❑ Inventory all raw and spent materials.
- ❑ Clean around vents and stacks.
- ❑ Place tubs around vents and stacks to collect particulate.
- ❑ Inspect air emission control systems (e.g., baghouses) regularly, and repair or replace when necessary.
- ❑ Store wastes in covered, leak proof containers (e.g., dumpsters, drums).
- ❑ Consider shipping all wastes to offsite landfills or treatment facilities.
- ❑ Ensure hazardous waste disposal practices are performed in accordance with Federal, State, and local requirements.

Appendix B2

BMPs for Other Specifications

Vehicle Service Facilities

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Changing Oil and Other Fluids

- ❑ Whenever possible, change vehicle fluids indoors and only on floors constructed of non-porous materials. Avoid working over asphalt and dirt floors – surfaces that absorb vehicle fluids.
- ❑ If vehicle fluids must be removed outdoors, always use a drip pan. Prevent spills from reaching the street or storm drain by working over an absorbent mat and covering nearby storm drains, or working in a bermed area. If necessary, use absorbent socks to create a bermed area.
- ❑ When draining fluids into a drain pan, place a larger drip pan (e.g., 3' x 4') under the primary drain pan to catch any spilled fluids.
- ❑ Divert storm water around storage areas with ditches, swales and/or berms. Transfer fluids drained from vehicles to a designated waste storage area as soon as possible. Drain pans and other open containers of fluids should not be left unattended unless they are covered and within secondary containment.
- ❑ Store waste containers of antifreeze and oil within secondary containment. Antifreeze and waste oil should be stored separately and recycled, or disposed of as hazardous waste.
- ❑ Never pour vehicle fluids or other hazardous wastes into sinks, toilets, floor drains, outside storm drains, or in the garbage. These substances should be kept in designated storage areas until recycled or safe disposal.
- ❑ Drain fluids from leaking or wrecked vehicles as soon a possible, to avoid leaks and spills.
- ❑ Consider using a quarter barrel, vacuum pump, or drain pan with built-in pump to transfer fluids.

Cleaning Engines and Parts, and Flushing Radiators

- ❑ Eliminate discharges from these operations to the sanitary sewer and storm drains. Use a licensed service to haul and recycle or dispose of wastes.
- ❑ Designate specific areas or service bays for engine, parts, or radiator cleaning. Do not wash or rinse parts outdoors.
- ❑ Use self-contained sinks and tanks when working with solvents. Keep sinks and tanks covered when not in use.
- ❑ Inspect degreasing solvent sinks regularly for leaks, and make necessary repairs immediately.
- ❑ Avoid soldering over drip tanks. Sweep up drippings and recycle or dispose as hazardous waste.
- ❑ Rinse and drain parts over the solvent sink or tank, so that solvents will not drip or spill onto the floor. Use drip boards or pans to catch excess solutions and divert them back to a sink or tank.
- ❑ Allow parts to dry over the hot tank. If rinsing is required, rinse over the tank as well.
- ❑ Collect and reuse parts cleaning solvents and water used in flushing and testing radiators. When reuse is no longer possible, these solutions may be hazardous wastes, and must be disposed of properly.
- ❑ Never discharge cleaning solutions used for engines or parts into the sewer system without adequate treatment. Most facilities have these solutions hauled off-site as hazardous waste because of the permits necessary for on-site treatment.
- ❑ Rinse water may only be discharged to the sanitary sewer with adequate treatment and approval of the sewage treatment plant.
- ❑ Never discharge wastewater from steam cleaning, or engine/parts cleaning to a street, gutter, or storm drain.
- ❑ Sweep or use a vacuum to clean up dust and debris from scraping or bead blasting radiators.
- ❑ Use static tanks for rinsing to reduce the volume of discharged rinse water.
- ❑ Use counter-current rinsing to reduce water usage and rinse water discharges.

Washing Cars and Other Vehicles

Regular Activity

- ❑ If car washing is a central business activity, the most desirable option is to treat and recycle the wash water.
- ❑ Designate a vehicle washing area and wash cars and trucks only in that area. This "wash pad" should be bermed or protected from storm drains and should drain to an oil/water separator before discharging to the sewer.
- ❑ Cover an outside wash pad or minimize the area of an uncovered pad to reduce the amount of rainwater reaching the sewer. Consult the local sewage treatment plant for guidance.
- ❑ Minimize the use of acid-based wheel cleaners. These products may require additional treatment (beyond oil/water separation) before discharge to the sewer.

Occasional Activity

- ❑ Even biodegradable soap is toxic to fish and wildlife. Whenever possible, take vehicles to a commercial car wash.
- ❑ If soap is used in washing, the wash water must be collected and discharged, preferably with treatment, to the sanitary sewer. This water cannot be discharged to a storm drain.
- ❑ Never rinse off spray-on acid-based wheel cleaners where rinse water may flow to a street, gutter, or storm drain.

New Vehicles

- ❑ If cleaning the exterior of new vehicles with only water, the discharged water may go directly to the storm drain.
- ❑ Always protect the storm drains from solvents used to remove protective coatings from new cars. Discharges of these solvents to the sanitary sewer must receive adequate treatment and approval of the sewage treatment plant.

Body Repair and Painting

- ❑ Whenever possible, conduct all body repair and painting work indoors or under cover.
- ❑ When receiving damaged vehicles, inspect for leaks. Use drip pans if necessary.
- ❑ When cleaning auto body parts before painting, minimize use of hose-off degreasers. Brush off loose debris and use rags to wipe down parts.
- ❑ Use dry cleanup methods such as vacuuming or sweeping to clean up dust from sanding metal or body filler. Debris from wet sanding can be allowed to dry overnight on the shop floor, then swept and vacuumed. Liquid from wet sanding should not be discharged to the storm drain.
- ❑ Minimize waste paint and thinner by carefully calculating paint needs based on surface area and using the proper sprayer cup size.
- ❑ Do not use water to control overspray or dust in the paint booth unless this wastewater is collected. This water should be treated before discharge into the sewer system.
- ❑ Clean spray guns in a self-contained cleaner. Recycle the cleaning solution when it becomes too dirty to use. Never discharge cleaning waste to the sewer or storm drain.
- ❑ Use sanding tools equipped with a vacuum to pick up debris and dust.
- ❑ Reduce waste by using low-volume paint mixing equipment and high-efficiency painting tools.

Keeping a Clean Shop

- ❑ Use drip pans under leaking vehicles to capture fluids.
- ❑ Sweep or vacuum the shop floor frequently. Use mopping as an alternative to hosing down work areas.
- ❑ If mopping is used to clean shop floors:
  - Spot clean any spilled oil or fluids using absorbents or rags.
  - Use dry cleanup methods: Sweep the floor using absorbents.
  - After steps 1 and 2 above (if mopping is still needed), mop and discharge mop water to the sanitary sewer.
- ❑ Do not pour mop water into the parking lot, street, gutter, or storm drain.
- ❑ Remove unnecessary hoses to discourage washing down floors and outside paved areas.
- ❑ Regularly sweep parking lots and areas around facility instead of washing them down with water.
- ❑ Clean fuel dispensing areas with absorbent instead of water.
- ❑ Collect all metal filings, dust, and paint chips from grinding, shaving, and sanding, and dispose of the waste properly. Never discharge these wastes to the storm drain or sanitary sewer.
- ❑ Collect all dust from brake pads separately and dispose of the waste properly. Never discharge these wastes to the storm drain or sanitary sewer.
- ❑ Send rags to an industrial laundry.
- ❑ Consider using an oleophilic mop (picks up oil and not water) to reduce the volume of waste liquids collected and to reduce disposal cost.

Storage

- ❑ Store hazardous materials and wastes where they are protected from rain and in a way that prevents spills from reaching the sanitary sewer or storm drain.
- ❑ Keep lids on waste barrels and containers, and store them indoors or under cover to reduce exposure to rain.
- ❑ All hazardous wastes must be labeled according to hazardous waste regulations. Consult the Fire Department or a local hazardous waste agency for details.
- ❑ Keep wastes separated to increase waste recycling/disposal options and to reduce costs.
- ❑ Never mix waste oil with fuel, antifreeze, or chlorinated solvents. Consult a hazardous waste hauler for details.
- ❑ Double-contain all bulk fluids to prevent accidental discharges to the sewer and storm drain. Consult the Fire Department for details.
- ❑ Keep storage areas clean and dry. Conduct regular inspections so that leaks and spills are detected as soon as possible.
- ❑ Carefully transfer fluids from drip pans or collection devices to designated waste storage areas, as soon as possible.
- ❑ When receiving vehicles to be parted or scavenged, park them on a paved surface and immediately drain and collect gasoline and other fluids properly.
- ❑ Drain all fluids from components, such as engine blocks, that may be stored for reuse or reclamation. Keep these components under cover and on a drip pan or sealed floor.
- ❑ Store new batteries securely to avoid breakage and acid spills during earthquakes. Shelving should be secured to the wall. Store used batteries indoors and in plastic trays to contain potential leaks. Recycle old batteries.

Spill Control

- ❑ The best spill control is prevention.
- ❑ Maintain and keep current, as required by other regulations, a spill response plan and ensure that employees are trained on the elements of the plan.
- ❑ Minimize the distance between waste collection points and storage areas.
- ❑ Contain and cover all solid and liquid wastes – especially during transfer.
- ❑ Purchase and maintain the proper absorbent materials for containment and cleanup of different spills, and make sure they are easily accessible anywhere in the shop. Saturated absorbents generally must be disposed of as hazardous waste.
- ❑ Clean up spills immediately and completely. Spills are not considered cleaned up until the absorbent is picked up.
- ❑ Cover nearby downstream storm drains when transferring fuel from tank truck to fuel tank.
- ❑ Seal or remove floor drains to prevent accidental discharge to the sewer system.

Recycling / Treatment

- ❑ Recycle solvents, paints, oil filters, antifreeze, motor oil, batteries, and lubricants.
- ❑ Set up a system (separate, well-labeled containers in a convenient location) to make it easy for employees to separate wastes and to recycle.
- ❑ Choose treatment systems that are easy to maintain and repair.
- ❑ Properly maintain and service all pretreatment equipment, including sumps, separators, and grease traps to ensure proper functioning. Follow manufacturer's maintenance instructions and consider using a licensed service to conduct maintenance on a regular basis.
- ❑ Frequently inspect equipment for malfunctioning parts, leaks, and the accumulation of pollutants such as oil and grease. Since pretreatment equipment is supposed to remove pollutants, a lack of accumulation may be a sign of a malfunction.
- ❑ Retain only a licensed service to haul away and dispose of wastes.
- ❑ Install self-contained, zero-discharge treatment systems that recycle wastewater.

Purchasing

- ❑ Ask a local supplier for information on less toxic chemical cleaners and other products. There are alternatives to chlorinated solvents; chlorofluorocarbons; and 1,1,1, trichloroethane (TCA).
- ❑ Ask a local supplier for information on the composition of brake pads. Recent studies have shown that brake dust washed off streets by rain may be the single biggest contributor of copper, a major pollutant, to waterways. Awareness and understanding of this problem and the available alternatives will help create future solutions.
- ❑ Minimize inventory by purchasing only as much product as needed in the foreseeable future. This will reduce storage space needs, inventory tracking costs, and liability for storing hazardous materials and waste.

Education and Training

- ❑ Train all employees upon hiring, and annually thereafter, on personal safety, chemical management, and proper methods for handling and disposing of waste. Make sure that all employees understand stormwater discharge prohibitions, wastewater discharge requirements, and these best management practices. Use a training log or similar method to document training.
- ❑ Post instructional/informational signs around the shop for customers and employees. Put signs above all sinks prohibiting discharges of vehicle fluids and wastes. Put signs on faucets (hose bibbs) reminding employees and customers to conserve water and not to use water to clean up spills.
- ❑ Label drains within the facility boundary, by paint/stencil (or equivalent), to indicate whether they flow to an oil/water separator, directly to the sewer, or to a storm drain. Labels are not necessary for plumbing fixtures directly connected to the sanitary sewer.

Gasoline Stations

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Existing Facilities:

Fuel Dispensing Areas

- ❑ Maintain fuel dispensing areas using dry cleanup methods such as sweeping for removal of litter and debris, or use of rags and absorbents for leaks and spills. Fueling areas should never be washed down unless the wash water is collected and disposed of properly.
- ❑ Fit underground storage tanks with spill containment and overfill prevention systems meeting the requirements of Section 2635(b) of Title 23 of the California Code of Regulations.
- ❑ Fit fuel dispensing nozzles with "hold-open latches" (automatic shutoffs) except where prohibited by local fire departments.
- ❑ Post signs at the fuel dispenser or fuel island warning vehicle owners/operators against "topping off" of vehicle fuel tanks.

Facility - General

- ❑ "Spot clean" leaks and drips routinely. Leaks are not cleaned up until the absorbent is picked up and disposed of properly.
- ❑ Maintain and keep current, as required by other regulations, a spill response plan and ensure that employees are trained on the elements of the plan.
- ❑ Manage materials and waste to reduce adverse impacts on storm water quality.
- ❑ Train all employees upon hiring and annually thereafter on proper methods for handling and disposing of waste. Make sure that all employees understand storm water discharge prohibitions, wastewater discharge requirements, and these best management practices. Use a training log or similar method to document training.
- ❑ Label drains within the facility boundary, by paint/stencil (or equivalent), to indicate whether they flow to an oil/water separator, directly to the sewer, or to a storm drain. Labels are not necessary for plumbing fixtures directly connected to the sanitary sewer.
- ❑ Inspect and clean if necessary, storm drain inlets and catch basins within the facility boundary before October 1 each year.

Outdoor Waste Receptacle Area

- ❑ Spot clean leaks and drips routinely to prevent runoff of spillage.
- ❑ Minimize the possibility of storm water pollution from outside waste receptacles by doing at least one of the following:
  - use only watertight waste receptacle(s) and keep the lid(s) closed, or
    grade and pave the waste receptacle area to prevent run-on of storm water, or
  - install a roof over the waste receptacle area, or
  - install a low containment berm around the waste receptacle area, or
  - use and maintain drip pans under waste receptacles.

Air/Water Supply Area

- ❑ Minimize the possibility of storm water pollution from air/water supply areas by doing at least one of the following:
- ❑ Spot clean leaks and drips routinely to prevent runoff of spillage, or
  - grade and pave the air/water supply area to prevent run-on of storm water, or
  - install a roof over the air/water supply area, or
  - install a low containment berm around the air/water supply area.

New or Substantially Remodeled Facilities:

Note: Substantially Remodeled Facilities - One of the following criteria must be met before a facility is deemed to be substantially remodeled and the design elements described above are required to be included in the new design and construction:

- the canopy cover over the fuel dispensing area is new or is being substantially replaced (not including cosmetic/facial appearance changes only) and the footing is structurally sufficient to support a cover of the minimum dimensions described above, or
- one or more fuel dispensers are relocated or added in such a way that the Portland cement concrete (or, equivalent) paving and grade break or the canopy cover over the fuel dispensing area do not meet the minimum dimensions as defined above. Replacement of existing dispensers or underground storage tanks do not, by themselves, constitute a substantial remodel.

Fuel Dispensing Areas

- ❑ Fuel dispensing areas must be paved with Portland cement concrete (or, equivalent smooth impervious surface), with a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water to the extent practicable. The fuel dispensing area is defined as extending 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus 1 foot, whichever is less. The paving around the fuel dispensing area may exceed the minimum dimensions of the "fuel dispensing area" stated above.
- ❑ The fuel dispensing area must be covered, and the cover's minimum dimensions must be equal to or greater than the area within the grade break or the fuel dispensing area, as defined above. The cover must not drain onto the fuel dispensing area.

Note: Special note on the paving BMP. This best management practice is not specifically intended to apply to facilities that install a new canopy where no canopy existed.

Note: Special note on the canopy BMP. This best management practice is not specifically intended to apply to facilities that:

- are located in geographic areas not subject to federal or state storm water regulations
- do not discharge storm water either directly to surface waters or indirectly, through municipal separate storm drain systems
- do not add fuel dispensers
- replace, relocate, or add fuel dispensers within the parameters described in the BMP
- increase their throughput of fuel dispensed without modifying their equipment
- make only cosmetic or facial appearance changes to their existing canopy

Outdoor Waste Receptacle Area

- ❑ Grade and pave the outdoor waste receptacle area to prevent run-on of storm water to the extent practicable.

Air/Water Supply Area

- ❑ Grade and pave the air/water supply area to prevent run-on of storm water to the extent practicable.

Note: For the purposes of the waste receptacle area and air/water supply area BMPs only, the facility is considered substantially remodeled if the area around the waste receptacle area or air/water supply area is being regraded or repaved.

Restaurants

The following comprehensive list of Best Management Practices (BMPs) are not required to be implemented by all facilities but are only *suggested BMPs* that may be appropriate for this industry type or sector. The BMPs are provided as guidance to help facility owners conduct a site-specific assessment and develop their own programs to reduce potential pollutants to the storm drain system and receiving waters. Facility owners may develop and use additional BMPs if desired.

Housekeeping

- ❑ Clean floor mats, filters, and garbage cans in a mop sink, floor drain, or proper outside area connected to the sanitary sewer with an oil/water separator. Don't wash them in a parking lot, alley, sidewalk, or street.
- ❑ Pour washwater into a janitorial or mop sink. Don't pour onto a parking lot, alley, sidewalk, or street.
- ❑ Use dry methods for spill cleanup (sweeping, cat litter, etc.). Don't hose down spills.
- ❑ Keep dumpster area clean and lid closed. Don't fill it with liquid waste or hose it out.
- ❑ Cover, repair or replace leaky dumpsters and compactors, and/or drain the pavement beneath them to the sanitary sewer.

Recycling and Disposal

- ❑ Separate wastes. Keep recyclable wastes in separate containers according to the type of material. They are easier to recycle if separated.
- ❑ Recycle grease and oil. Don't pour it into sinks, floor drains, or onto a parking lot or street. Look in the yellow pages for "Renderers" or call the County of Los Angeles' Recycling & Household Hazardous Waste Hotline (888) CLEANLA.
- ❑ Recycle the following materials:
  - food waste (non-greasy, non-animal food waste can be composted)
  - paper and cardboard
  - container glass, aluminum, and tin
  - pallets and drums
- ❑ Dispose of toxic waste properly. Toxic waste includes used cleaners, and rags (soaked with solvents, floor cleaners, and detergents). For disposal information call: (888) CLEANLA.

Purchasing

- ❑ Look for and purchase "recycled" and "recyclable" containers. In doing so, a use for the recyclable materials that people collect and recycle is ensured.

Education and Training

- By including urban runoff training in employee orientations and reviews, employees can help prevent pollution. Promote these BMPs:
  - Storage containers should be regularly inspected and kept in good condition.
  - Place materials inside rigid, durable, water-tight and rodent-proof containers with tight fitting covers.
  - Store materials inside a building or build a covered area that is paved and designed to prevent runoff from entering storm drains.
  - Place temporary plastic sheeting over materials or containers and secure the cover with ties and weighted objects. (Not appropriate for storing liquids.)
  - Post BMPs where employees and customers can see them. Showing customers ocean protection is good public relations.
  - Explain BMPs to other food businesses through business associations or chambers of commerce.
  - Stencil catch basins near the workplace with Stormwater Program stencils that say "No Dumping: This drains to ocean."

Appendix C
Site Visit Guidance

As specified in the Permit, the minimum activities that must be conducted during the educational site visit are the following:

- Consult with a representative of the facility to explain applicable stormwater regulations.
- Distribute and discuss applicable BMP and educational materials.
- Where applicable, notify industrial facilities of requirements under the General Industrial Permit.
- Follow up with facilities, as necessary, to provide advice in complying with local legal authority.
- Submit a list of facilities visited each quarter to the Principal Permittee.

These visits are intended to be solely educational. An effective education program can improve business compliance with stormwater regulations using a minimum of enforcement activity. Staff should provide the facilities with information regarding the local stormwater program and, when requested, provide advice on understanding and complying with the local stormwater regulations. The following sections describe guidance for conducting the site visit program.

C.1 PRE-VISIT CONTACT (OPTIONAL)

Some municipalities have found it effective to seek the advice of groups representing the businesses in the site visit program. Groups representing businesses may include the chamber of commerce and trade associations for the specific business type. The Permittee may wish to participate in group meetings, meet with representatives one-on-one, or form a business committee. There, they may seek the group's advice in formulating the program, request membership lists for identifying specific businesses, and seek co-sponsorship of the program. Businesses are often more receptive to contacts from groups/individuals they are familiar with than from Permittee representatives.

Some California permittees contact businesses prior to the site visit. A pre-visit contact usually improves the responsiveness of the business to the visit if there is no existing relationship between the Permittee representative and the business. A letter may be sent to the business describing the program, preferably signed by the mayor or other well known Permittee representative. In some cases, such as for large groups of a particular business type, a workshop may be practical.

C.2 EDUCATIONAL SITE VISIT

Site visits can be conducted as a stand-alone visit or in conjunction with other programs where public agency staff are already on site for other purposes. This may include an Industrial Waste, Fire Department, or Health Department inspection. It may be preferable to use staff who already have a working relationship with the business, or who have some knowledge of the particular business type, as they may be able to get the most attention and cooperation from the facility staff.

The site visit should be conducted with an employee of the business with the appropriate knowledge of, and responsibility for the operations. Setting up appointments could help target the appropriate individual, but is not necessary if this presents scheduling problems.

The visitor should introduce the purpose of the visit, discuss the goals of the stormwater program, and describe applicable codes and ordinances. This is also a good time to verify the database information regarding the facility, and make a note of any changes.

The visitor should distribute educational materials about the stormwater program and best management practices (BMPs). Some facilities that are regulated under the General Industrial Permit may not be aware of the requirements. These facilities should be given the necessary information about their requirements to file a notice of intent (NOI), develop a stormwater pollution prevention plan (SWPPP), conduct monitoring and submit annual reports.

Much of this information can be distributed in the form of handouts. A general stormwater quality brochure for industrial/commercial facilities and information on the requirements of the General Industrial Permit will be developed as a joint effort between the Industrial/Commercial Educational Program and the Five-Year Storm Water Public Education Strategy component of the Public Information and Participation Program and will be complete in time to use in this program. In addition, Appendix B contains BMP lists for all industrial groups regulated under Phase 1 of the federal stormwater program that may be used as a basis for fact sheets to distribute as needed.

At the discretion of the Permittee and the site visit representative, and with full voluntary cooperation of the owner, the site visit could also include a "walk-through" of the facility to observe existing operations, point out potential problems or illicit discharges, and discuss possible BMPs. This would not be mandatory, but could provide more effective education when the business representative is cooperative and interested in improving conditions.

If desired, a form could be used to list specific activities and/or areas at the facility that may be potential sources of stormwater pollution, with suggestions for controlling the pollution. The form could be provided to the business representative for use in implementing the selected controls. It is not necessary for the Permittee to keep a copy of the form--many businesses may be more responsive if no detailed record of the assessment leaves the site.

Permittees are not required to conduct all visits at the same time and may want to stagger the visits, using the first round as a pilot program to receive feedback on the effectiveness of the educational message, gain practical experience on effective ways to initiate business visits, and define the level of effort needed for effective educational visits. Many other municipalities have conducted similar site visits, and could be a valuable source of information. Following the pilot program, the educational materials, means of contact, and other aspects of the program could be revised to reflect lessons learned.

C.3 FOLLOW-UP (OPTIONAL)

Follow-up will be conducted as deemed necessary and appropriate by the Permittee. In many cases, no follow-up action will be required (e.g., the business representative clearly comprehends the educational material, and no evidence of significant stormwater pollution or illicit discharges exist). In other cases, follow-up may consist of a mailed package of items such as pertinent regulatory and technical information. In cases where the Permittee representative notices potential pollutants or illicit discharges during the site visit, follow-up site visits may be a way to provide additional assistance to the business in complying with existing regulations. This type of follow-up would be conducted with the cooperation of the business and would be solely educational in nature.

Some Permittees may choose to conduct a formal inspection as follow-up according to the Permittee's inspection and enforcement strategy. Regulatory follow-ups would be conducted with trained staff to determine if possible ordinance violations exist and, if necessary, to initiate enforcement action. This step would be taken only if a condition was observed on site during the educational site visit which resulted in a readily apparent illicit discharge or illicit connection to the storm drain system.

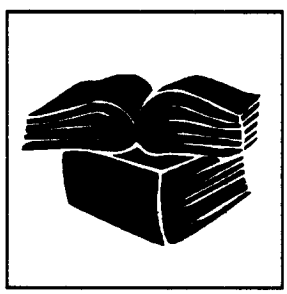
C.4 REPORTING

A list of facilities visited will be submitted to the Principal Permittee on a quarterly basis. If all facilities have previously been reported using the database format, this can be done as a simple list of facility names identified by category. Alternatively, facilities can be reported using the database format, and any changes in facility information noted during the visit or from other means can be submitted at that time.

Stormwater Quality Management Plan (SQMP)

Public Information and Participation Program

Five-Year Public Education Plan



Rogers & Associates
Harris & Company with
Larry Walker Associates, Inc.
Pelegrin Research Group
Lang, Murakawa & Wong
Valencia, Perez & Echeveste

July 30, 1997

Los Angeles County
Department of Public Works

Stormwater/Urban Runoff Public Education Program

EXECUTIVE SUMMARY

Purpose of the Five-Year Public Education Plan

Under the 1996 NPDES Los Angeles County Municipal Stormwater Permit, the County was required to develop a comprehensive educational stormwater and urban runoff outreach program to reach as many Los Angeles County residents as possible. The County will continue with a public education and outreach program based on the results of research conducted during the final year of the campaign and in compliance with the 2001 NPDES permit. The County will choose an appropriate combination of educational outreach tools and activities to measurably increase the knowledge of the target audiences about the impacts of stormwater pollution and potential solutions to reduce the problems caused; and attempt to change the behavior of target audiences by encouraging those audiences to implement appropriate solutions.

What Can the County and the Co-permittees Accomplish Through the Plan?

In developing and implementing the second Five-Year Public Education Plan, Los Angeles County and its Co-permittees will meet the basic requirements outlined in the Permit using methods that are cost-efficient and that may change behavior. Through a unified and coordinated effort, the plan can:

- change the mind-set of a large, diverse population while educating target audiences about solutions to stormwater pollution;
- create synergy by using an overarching campaign approach, "look" and tone, and by unifying multiple pollution prevention efforts;
- impact more than one audience at a time with a single campaign;
- build bridges and forge partnerships that integrate city and jurisdictional programs; and,
- document whether the education outreach effort resulted in behavior change that reduced pollution.

EXECUTIVE SUMMARY

Addressing the Greatest Challenges

Research will continue to play an integral role in the development of the Five-Year Public Education Plan. Through focus groups and quantitative surveys, as well as secondary research, the challenges listed below will be addressed.

- Deciding specifically on which target audiences to focus that will produce the best results in reducing pollution activities
- Discovering exactly what motivates or influences behavior change in each target audience
- Addressing the ethnic, cultural, geographical and socio-economic diversity of the County
- Demonstrating whether the public education effort has helped to reduce stormwater/urban runoff pollution
- Finding the most effective, and cost-effective means of educating the public.

The Five-Year Public Education Plan -- In A Nutshell

- Founded on research
- Meets the requirements of the NPDES Permit
- Broad-based with an overarching theme
- Flexible, adaptable, cost-effective
- Provide simple, everyday actions that will make a difference
- Integrated and coordinated
- Results-oriented

Overarching Approach

In order to achieve maximum effectiveness, and build on the recognition already gained under the first Five-Year Plan, the communications program developed for this Five-Year Public Education Plan will continue to use the overarching approach developed in 1996. The overarching approach provides a campaign identity, a personalized feel and applicable "how to" information about how to solve the stormwater pollution problem. The approach is defined for the Education Plan as a whole and remains consistent throughout the life of the Plan;

however, the components within the phases that roll-out over the next four years will be fluid to reflect the evolving message for each targeted audience.

Research supports the value of a "problem/solution"-oriented approach with strong, impactful visuals and an identifying "signature." The common elements of the overarching approach include: (1) an identified problem caused by stormwater pollution; (2) an identified solution(s) to the particular problem; (3) the campaign theme tagline; (4) 1-888-CLEAN-LA hotline number and 888CleanLA.com website if applicable; and (5) **Project Pollution Prevention** identifying signature.

General Public/Residents

Past research shows 83% of the County's population can be reached through an integrated, multi-faceted communications campaign which focuses on a desire to "do the right thing" and provides how to information about alternative, anti-polluting behaviors. This population group also will be impacted by credible messages that imply that a change in their behavior will help protect children, and preserve the environment for the future. An additional 9% -- a harder-to-reach, but high polluting population -- needs a more highly-focused campaign and is not likely to be motivated by doing the right thing, or preserving the environment. However, they will listen to messages that involve protecting children and the beach or other watersport areas.

Mass media has proven to be the key source of pollution prevention information for the general public. Other General Public/Residents communications tools -- media relations, public service announcements (PSAs), instructional materials, corporate and entertainment industry tie-ins, community events, and the 1-888-CLEAN-LA hotline and website -- are planned to work in-concert with the advertising.

Businesses

The Businesses portion of the Five-Year Public Education Plan will be updated significantly based on the results of the research conducted in Summer 2001. Past efforts can be evaluated for effectiveness and a new approach will be developed based on the need for education and the requirements of the new NPDES permit.

EXECUTIVE SUMMARY

School Education

Given the existence of current and successful school education programs in Los Angeles County, an alliance with one or more of these programs is the most effective and cost-efficient method of communicating with school children. For the 886,000 K-6 children, the County's school program and youth events will provide the vehicle to teach children to reduce, reuse and recycle, thereby eliminating pollution. For the County's more than 621,000 middle- and high-school children, the County-sponsored Secondary Student Environmental Education Program presented by TreePeople will create a higher understanding of environmental issues and motivate teenagers to take action.

Measure of Effectiveness

To assess the overall effectiveness of the Five-Year Public Education Plan, research will be conducted after large-scale media campaigns, whenever feasible for additional efforts at public outreach, and at the conclusion of the plan. This research will encompass quantitative studies in the General Public/Residents and Businesses audiences. It will include a component to assess why and how the program is working so that the research will continue to help in the refinement and improvement of the program over the life of the Plan. Additionally, other anecdotal, qualitative and quantitative measurements will be implemented periodically to assess the effectiveness of the program among specific audiences or in different media channels.

Evaluation data will be collected through a telephone survey of men and women, 16+ years old, who have been residents of Los Angeles County for at least six months. Focus groups or other survey methods may be used as well. Analysis of the data will include correlating the information gathered against the benchmark established in the pre-campaign segmentation study.

Format of the Five-Year Public Education Plan

This preliminary draft of the Five-Year Public Education Plan contains two sections:

1. Overview
2. Implementation by Target Audience

EXECUTIVE SUMMARY

Within Section 2, Implementation by Target Audience, the audience subsections detail the situation analysis for each respective audience, goals and overall communications approach, and an idea of the activities to be implemented.

Urban Runoff and Its Impact on the County's Resources

On a daily basis, millions of gallons of untreated water flush into regional lakes, rivers and the Pacific Ocean. On rainy days, it can jump to six billion gallons. These polluted flows cause public health and safety concerns at the beaches, and leave behind hundreds of tons of solid waste to be cleaned up, costing millions of dollars annually.

Even after a generation of fighting water pollution, studies show the danger of illness to people swimming in waters near urban storm drain outfalls. The urban runoff that drains into the County's storm channels first litters and contaminates neighborhood streets and walks. Litter, fertilizers, pesticides, automobile soot and oil drippings, pet waste, and deteriorating leaves and plant debris not only make our communities unattractive, but also are swept untreated down the storm drains into our waterways.

In total, the impacts of stormwater/urban runoff pollution encompass:

- losses to the County's $2 billion a year tourism economy
- health risks associated with swimming in areas near storm drain outfalls
- loss of recreational resources
- dramatic cost increases for cleaning up contaminated sediments
- impaired function and vitality of our natural resources
- losses to Southern California's commercial and sportfishing industry
- contamination of marine life

Opportunities for the Five-Year Public Education Plan

In developing and implementing this Five-Year Public Education Plan, Los Angeles County hasan important opportunity to meet the basic requirements outlined in the NPDES Permit (Immediate Outreach, Industrial/Commercial Education Program, Five-Year Public Education Strategy) using methods that are cost-efficient and that effectively change behavior. Through a unified and coordinated effort, the plan can:

- change the mind-set of a large, diverse population and educate target audiences about solutions to stormwater pollution;
- create a broad-based model with a long-term vision for pollution prevention in large geographic areas;

- create synergy by unifying multiple pollution prevention efforts (such as recycling and household hazardous waste) rather than conducting individual, splinter programs;
- build bridges and forge partnerships that integrate city and jurisdictional programs, combine educational outreach with technical understanding, and leverage resources; and,
- document whether the education outreach effort resulted in a behavior change that substantially reduced pollution.

This program will continue to be research-based. It will draw from the experiences and best programs of existing local, state and national programs, as well as create original qualitative and quantitative research to support the development of a comprehensive public education plan. A united effort is the most viable and cost-effective way to achieve success.

Additionally, the County and the Co-permittees are in general agreement about the concept of a campaign overarching approach, "look" and tone that clearly and concisely identifies the program, breaks through the information clutter and, at the same time, allows tailoring by Co-permittees for specific needs.

Additionally, and of equal importance, the overarching approach should not be exclusive to stormwater pollution. Rather, multiple pollution prevention efforts -- solid waste recycling and disposal, household hazardous waste and used oil recycling -- should be coordinated within the overarching approach in their respective efforts and messages.

Our Greatest Challenges

Research served as part of the Plan development process, and on-going monitoring will allow for program adjustments throughout the five years. Overall challenges are:

- discovering exactly what motivates or influences behavior change in each target audience;
- deciding who to target within each audience segment; prioritizing audiences to maximize the budget;
- addressing the vast ethnic, cultural, geographical and socioeconomic diversity of the County; and,
- demonstrating whether the education effort has indeed helped to reduce stormwater/urban runoff pollution.

Maximizing Public Education Budgets

The estimated budget for the Los Angeles County Department of Public Works Five-Year Stormwater/Urban Runoff Public Education Program is $7.5 million, with the Co-permittees having individual budgets for local education efforts. While $7.5 million over five years appears to be a large sum of money, there are almost 10 million people in Los Angeles County to reach with stormwater pollution prevention messages. With an audience of this size, the funds available to the overall effort -- even combined with the Co-permittees' funds -- must be allocated carefully and effectively so that each dollar is directed towards changes in behaviors. Therefore, targeted audiences, and the communications programs aimed at each of these audiences, must be prioritized according to their relative impact on pollution and their willingness to try new behaviors that will reduce the greatest amount of pollutants entering the storm drain system.

The Five-Year Public Education Plan -- In A Nutshell

- Founded on research
- Broad-based with an overarching approach
- Flexible, adaptable, cost-effective
- Provide simple, everyday actions that will make a difference
- Integrated and coordinated
- Results-oriented

◆ OVERALL GOALS ◆

- Reduce the amount of stormwater/urban runoff pollution in Los Angeles County.
- Integrate County, city and jurisdictional programs, appropriately mix educational outreach with technical understanding, and leverage resources.
- Improve general understanding of stormwater/urban runoff pollution prevention methods.
- Incorporate stormwater activities into other County environmental education programs.

◆ OVERARCHING APPROACH ◆

The overarching approach was defined for the 1996 Five-Year Public Education Plan and remains consistent. However, the components that roll-out over the next five years will be fluid to reflect the evolving messages for each targeted audience. The overarching approach will provide a campaign identity, a personalized feel and applicable "how to" information on solving the stormwater pollution problem.

Benefits of the Overarching Approach -- Los Angeles County

- Builds a distinct and distinguishing identity that is visually impactful
- Sends clear, concise and applicable message to the target audiences
- Sets a consistent tone and feel for the entire communications program
- Provides specific information in a personal manner making it more identifiable to the recipient
- Creates unity between all pollution prevention programs (e.g., recycling, household hazardous waste, water pollution)
- Tailorable to and flexible for specific programs, localities, topics and messages

Benefits of the Overarching Approach -- Co-permittees

- Increases efficiencies in cost and production
- Enables Co-permittees to tie-in to the County's program without feeling they are losing their own identity to a county or geographical name
- Raises the synergy and broadens the reach and impact of local campaigns through multiple communications contacts on a variety of levels -- community to countywide -- and through a variety of communications tools

Common Elements of the Overarching Approach

- An identified problem caused by stormwater pollution
- An identified solution(s) to the particular problem
- Campaign theme tagline
- An appeal for personal responsibility to do the right thing

- 1-888-CLEAN-LA hotline number and website (local information can be added for Co-permittee tailoring)
- **Project Pollution Prevention** identifying signature (city logo/name can be included for Co-permittee tailoring)

Campaign Signature

The 5-Year Plan will continue to use the "signature" developed for advertising, collateral materials, media relations and other campaign components to identify a united alliance in preventing pollution in all communities around Los Angeles County.

Potential adaptations/usage in advertising and collateral materials include:

PROJECT Pollution PREVENTION

County signature:	County of Los Angeles (seal optional) **Project Pollution Prevention**
Co-permittee signature: (example only)	City of Long Beach (w/logo, optional) **Project Pollution Prevention**
STOPP signature:	East Los Angeles **Project Pollution Prevention** *"Clean Communities for Economic Growth"*

Situation Analysis Overview

The cities of Los Angeles County and the unincorporated area encompass nearly 10 million people whose socioeconomic levels vary from great wealth to welfare, and who collectively speak more than 90 languages/dialects. It is important that the education program makes an impression on as many of these people as possible and that they understand the actions of each individual *will* make a difference.

Unfortunately, there is no simple solution, no single action, no easy "fix" that will singularly prevent stormwater pollution. A combination of efforts - education, technology, partnerships with business and industry - will be necessary to meet our goals.

The problem is complex from both an action and result standpoint. Stormwater carries nonpoint source pollutants from different and sometimes unidentified sources and flow rates can fluctuate from thousands to billions of gallons in a short time. The education program and prevention solutions must take into account the impact of these many sources of pollution.

From Awareness to Behavior Change

The ongoing stormwater public education programs in Los Angeles County have heightened *awareness* of the problem among media, influential business and government leaders, and certain segments of the general public. These programs have laid a foundation to make the transition from basic education to a call-to-action that motivates and allows for behavior changes. As outlined in the first section, one of the greatest challenges to the program will be to measure behavior changes that actually reduce stormwater pollution. Without the benefit of scientific data that can tell us specifically which pollutants have decreased and in what geographic locale this decrease was found, we are relying on individuals to report on themselves and their neighbors.

Regional Considerations

With many issues within the 4,070-square miles of Los Angeles County being regional in nature, the Permit defines six Watershed Management Areas (WMAs) and calls for the cities within these WMAs to work collaboratively to address education and outreach efforts countywide as well as in their watershed. Currently, many cities have widely differing goals and resources and it is a challenge to forge the cooperative partnerships necessary for Co-permittees to work collaboratively beyond their jurisdictions for the benefit of the entire watershed, and the entire County.

The term "watershed management area" is not part of the general public vocabulary and research has indicated that educating the public about simple everyday actions to enable behavior changes is a more efficient use of funds than educating them on WMAs. This is even more true for Los Angeles County which must address six different WMAs -- many of which are concrete channels not bucolic creeks or rivers.

Given the need to change specific behaviors in order to improve water quality, materials will not address watersheds per se. However, this might be an option for a Co-permittee with messages targeted to address specific waterbody pollution concerns and actions within a specific WMA.

What the General Public Knows or Believes

Although quantitative studies have shown that general awareness of storm drain issues is increasing, previous focus groups[1] indicate that the public has minimal knowledge regarding specific activities that contribute to stormwater/urban runoff pollution (with the notable exception of used motor oil dumping). Research on the effectiveness of the 1996 Five-Year Plan will be available for evaluation in Summer 2001 and will be used to develop the 2001 Five-Year Plan.

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[1] *Residents and Industry Stormwater Awareness, Practices and Communications Report,* -- Focus Groups, Los Angeles County Department of Public Works, conducted by Pelegrin Research Group, November 1996.

Substances not perceived as environmentally dangerous, such as car washing detergents, garden fertilizers and pesticides, are used freely with no thought to storm drains or urban runoff. With respect to litter in neighborhoods, most residents claim that they, themselves are not at fault. Instead they blame others for the unsightly mess.

There is a low level of knowledge about the *connection* between storm drains and the ocean; that pollutants placed into the storm drain flow directly to an open waterbody without being first treated in some manner. Finally, the level of basic knowledge between English-speaking and Spanish-speaking residents is very similar; however, understanding the difference between the storm drain system and household drains is more confusing for the Spanish-speaking population since the word "alcantarilla" refers to both systems.

Issues of Importance to the General Public

Residents are concerned about the aesthetics associated with storm drains including unsightly garbage, unpleasant smells and the resulting attraction of undesirable animals. Pollutants that offend the senses are universally disliked. Cigarette butts are in this category, not only as a pollutant, but because they are perceived as a sign of uncleanliness. Garbage in the gutter is seen as both offensive to the eyes and nose as well as a great threat to the environment.

Toxicity and health are also important issues with residents. However, national research,[2] as well as local focus groups,[3] confirm there is a lack of understanding about how certain substances people consider to be harmless actually hurt the environment. In the research and in the focus groups, people thought of dog droppings as "fertilizer" and not connected to bacteria found in stormwater. Leaves and yard trimmings are "natural" and not understood as causing an imbalance in the supply of oxygen in the water needed by marine plants and animals. Pesticides and fertilizers are associated with the wholesome activity of home gardening -- and the philosophy of "more is better" unfortunately prevails.[4] Lastly, sediment actually smothers aquatic plants, but the public typically thinks of it in terms of being soil -- a basic component of raising food.[5]

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[2] *National Geographic*, "Our Polluted Runoff," February 1996.

[3] *Residents and Industry Stormwater Awareness, Practices and Communications Report*, -- Focus Groups, Los Angeles County Department of Public Works, conducted by Pelegrin Research Group, November 1996.

[4] Panel discussion on pollutants, State of Sacramento River Conference, September 1996.

[5] *Residents and Industry Stormwater Awareness, Practices and Communications Report* -- Focus Groups. Ibid.

Many residents fear gutters because of health reasons ... "all the diseases down there." Avoidance of floods was discussed in focus groups as another reason to keep storm drains clean; however, the segmentation study research indicated that only 27% of the general population are very concerned about flooding. And while runoff from sprinklers was considered wasteful, it was not seen as a potential carrier of pollutants. A few residents, however, made the connection between water runoff and dissolved chemicals that can seep from lawn fertilizing and be carried in flowing water to the storm drain.

Themes and Messages Targeted to the General Public/Residents

During previous focus groups, participants were exposed to a series of test themelines and asked to choose the ones they found most compelling. Because general public/residents were less educated about stormwater pollution prevention than the commercial/industry sector participants, they were more attracted to broader themelines (e.g., "You're the solution. Prevent pollution."). Abstract themelines (e.g., "Gone, but not for long." "Can it. Don't dump it.") were seen as confusing and meaningless to residents.

Based on focus group feedback, the final program theme should:

- incorporate personal responsibility and individual empowerment
- be simple and straightforward
- validate and lend importance to individual actions

The focus groups revealed common threads that can be of assistance in designing the Five-Year Public Education Program. In addition, segmentation research provided some additional information about what would motivate key targets to change their behavior. These recommendations are summarized:

- ***Give action-oriented, specific messages.*** Short, specific "do's and don'ts" are favored by many because they are unambiguous, implementable and point to tangible practices that can be adopted or changed.

- ***Emphasize personal responsibility and empowerment.*** Messages that indicate that the individual can make a difference are generally motivating and well received. This type of message is uplifting and diminishes the feeling of powerlessness or despair tied to the perception of a rapidly deteriorating environment.

- ***Build on existing aesthetic concerns for the immediate neighborhood.*** Since the general public is concerned with the offensive effects of urban pollution within their immediate surroundings and neighborhoods, messages that address such concerns have a wide appeal. The well-being of the ocean and beaches, while theoretically important, is not as compelling, especially for those who live away from the coastline.

- ***Build on concerns for children's future and welfare.*** The need to protect children from dirt and disease within their immediate surroundings is a powerful incentive to maintain storm drains that are clean and free of pollutants.

- ***Build on existing knowledge or existing positive practices.*** Messages that amplify and connect to existing positive practices are well received. Messages that connect recycling with urban runoff have the potential to build on an existing momentum as well as of increasing awareness of specific pollutants. The well-established fear of motor oil can be expanded to other pollutants by establishing a similarity.

- ***Build on guilt or shock.*** Messages based on guilt or shock are appealing to those who give pollution a low priority or to those who are cynical about the willingness of others to change behaviors.

- ***Minimize differences by adopting an overarching approach.*** Since there are significant differences in the degree of knowledge and compliance with good practices within the general public audience and between audiences, an overarching message accompanied by different sub-messages can specifically address such differences and be tailored by audiences.

- ***Make information easily accessible for those who want it.*** Ease and convenience are keys in getting people to change behaviors. Those individuals who express an initial interest in pollution prevention practices should be able to obtain additional information in an easily accessible manner.

Communications Approach

There is little disagreement that the general public, as a whole, is concerned about the environment and that most people want to "do the right thing." Research[6] supports this belief and further concludes that "doing the right thing" messages would be well received by some target audiences. The residents in these groups also will be motivated by credible messages related to protecting children and would be inclined to act upon basic information about alternative behaviors.

Other general public/residents communications tools -- media relations, public service announcements (PSAs), instructional materials, corporate and entertainment industry tie-ins, community events, and the 1-888-CLEAN-LA hotline and website -- will be planned to work in-concert with the advertising campaign. A single communications tool should not function as a stand-alone component. Working alone, a single component cannot have the impact that a group of well-timed and integrated activities will have on the target audiences. Messages must be heard repeatedly through a variety of tools and applications in order to make an impression and change behavior.

Snapshot of Activities

1. Advertising
2. Media Relations
3. Public Service Announcements (radio, cable television, print)
4. Instructional Materials Distributed in a Targeted and Activity-Related Manner
5. Corporate/Entertainment Industry Tie-Ins
6. 1-888-CLEAN-LA and 888CleanLA.com
7. Events Targeted to Specific Activities and Population Sub-Groups

[6] Los Angeles County Stormwater Segmentation Study, Resident Population. Ibid.

Activity 1 Advertising

Description -- Overview

The advertising campaign will be "problem/solution"-oriented and designed to communicate using an overarching approach with strong visuals and "how to" messages throughout all media components. Messages will emphasize each person's ability to prevent storm drain pollution through simple behavior changes, and potential consequences if behaviors are not changed. All advertising campaigns will include the 1-888-CLEAN-LA hotline and website, the theme tagline and the signature **Project Pollution Prevention**.

Advertising buys will be planned on an annual basis, and in conjunction with the buy, free media time and space will always be negotiated to maximize reach and dollars spent. Co-permittees can help expand the reach of the campaign by contributing to this annual buy to purchase the most media for the money. They can also play an important role in securing local public service announcements and free media opportunities.

County Responsibilities -- Activity 1

- Concept and production of advertising campaign
- Adapt advertising to other languages as needed
- Provide artwork on disk or photostat to Co-permittees for local tailoring and placement; provide hard copy or tape of radio advertising with a spot for local identification; provide video PSAs in VHS or beta format.
- Create a countywide media plan; initiate countywide media buy and negotiate PSA placements
- Provide counsel and information to Co-permittees for localizing and placing advertising messages within individual cities

Co-permittee Responsibilities -- Activity 1

- Write endorsement/encouragement letters to local radio stations and newspapers supporting and encouraging them to extend or increase usage of PSAs

Activity 2 Media Relations

Description

A successful education and outreach program will require the support of print and electronic media to report on the activities of the program and communicate "how to" messages to residents. Components of a comprehensive media relations program that will ensure the media receives accurate, timely information include:

- media kit
- media releases and advisories
- fact sheets, issue papers, update reports, feature articles, case studies
- editorial board meetings and press briefings
- community/public affairs talk shows
- on-line reporting

Many of the collateral materials developed for the General Public/Residents, Businesses and Public Agency Employees audiences will be included in media information kits along with specific, localized information from the Co-permittees.

Reporters will be approached with relevant stories timed to coincide with the advertising campaign, seasonal activities and other events planned within the Five-Year Public Education Campaign. For example, media releases and advisories update the media on new information, specific program elements, upcoming meetings and activities, and are normally followed by a telephone call to pitch the story. Issue papers will be used to highlight and analyze a specific aspect or topic, provide an expert opinion, and/or propose solutional measures. Update reports are results, successes and/or failures of certain programs, pollution monitoring, regulatory measures enacted; in essence, the "State of Stormwater."

Description -- "Guide to Local Media Relations"

Each Co-permittee will receive a "Guide to Local Media Relations" that will provide the following "how to" information for working with media in their individual communities:

- tips for working with local print and electronic media
- tips for communicating/pitching stories and the types of stories/opportunities to be on the lookout for
- format and examples of media releases, advisories, fact sheets
- distribution practices/policies
- protocol for media interviews
- how to place public service announcements

County Responsibilities -- Activity 2

- Create and produce overarching media kit cover and enclosure information. Media kit cover available for Co-permittee purchase through "group printing" system
- Create and update regularly a countywide media contact/outlet database
- Provide media lists, information, case studies; main source of countywide media information
- Develop and implement annual countywide media relations plan
- Develop and distribute "Guide to Local Media Relations"
- Produce appropriate artwork photostats

Co-permittee Responsibilities -- Activity 2

- Provide local media contacts/outlets for database
- Use the "Guide to Local Media Relations" to implement local media relations

Activity 3 Public Service Announcements

Description

A Public Service Announcement (PSA) is defined by its message, not whether it is free or paid. In reality, a PSA can be either a paid spot or a free spot, and its definition is reflective of the fact that the message is not based on a product sale, but is a service or information provided in the public interest or safety.

While the ultimate goal of a PSA is to have it placed pró bono (free), it is sometimes necessary to pay for the spot, possibly at a reduced rate, to ensure a strong air time or specific newspaper section targeted to the primary audiences. Advertising mediums negotiated for PSAs will be based on the results of the research and supported by budgetary parameters.

County Responsibilities -- Activity 3

- Development and production of PSAs
- Distribute PSA templates, copy, tape to Co-permittees for local placement
- Negotiate countywide PSA time and placement
- Track and evaluate PSA placement

Co-permittee Responsibilities -- Activity 3

- Play broadcast PSA on city news outlets or cable station and place print PSA in city newsletter

Optional

- Negotiate PSA time and space in the local market

Activity 4 "How To" Instructional Materials Distributed in a Targeted and Activity- Related Manner

Description

In the focus groups, general information brochures were rated very low by the general public, mainly due to the time it takes to read them. However, in keeping with the "problem/solution" communications approach, "how to" instructional materials can prove valuable if the information is simple -- stating the problem and a personal, easy solution -- and is distributed in a manner that makes the material meaningful and increases the probability that the recipient will actually read the piece.

Similar to the non-traditional advertising components, "how to" instructional materials should be produced to correspond with the advertising campaign and seasonal activities. For example, during the Spring and Summer, lawncare tip cards can be distributed through nursery/garden stores, garden and horticultural clubs, botanical gardens, lawncare services and homeowners associations.

The basis of the information for the tip cards will be provided by the BMP fact sheets and the many excellent brochures that already exist, having been prepared by the County program or by individual Co-permittees. Technical information and other educational materials will be adapted for general public understanding and relevance.

County Responsibilities --Activity 4

- Determine "how to" materials to be developed and develop format of each
- Write copy for materials and obtain technical and information approvals
- Design and produce materials. Ensure availability of materials to Co-permittees through "group printing" system
- Develop and implement countywide distribution plan

Co-permittee Responsibilities -- Activity 4

- Obtain materials through the "group printing" system and distribute through local channels
- Provide input on "how to" materials needed, preferred formats, or distribution methods.

Activity 5 Corporate, Community Association, Environmental Organization and Entertainment Industry Tie-ins

Description

Partnerships with corporations and businesses, environmental organizations and the entertainment industry are essential to reach audiences on a variety of levels. In many cases, messages tied-in to these types of organizations have more credibility and therefore more potential to be effective. Relationships and partnerships with corporations, environmental organizations and the entertainment industry can expand the message distribution avenues and activities, and supplement program budgets through the following:

- Personal and business endorsements
- Cooperative traditional and non-traditional advertising in the consumer marketplace
- Information distribution through POP displays, product neck-hangers, mailings, tip cards
- Sponsorship of community events and special activities
- Celebrity spokespersons to media and at events
- Special messages on established product packages (e.g., Northern California Coca-Cola and Sprite cans carrying a stormwater awareness message and a 1-800 information number, Spring/Summer 1997)

County Responsibilities -- Activity 5

- Identify countywide corporations, environmental and entertainment industry organizations. Develop and maintain database
- Solicit and implement countywide partnerships
- Provide materials (i.e., advertising, POP display materials, tips cards) as needed for mailings, information counters, ad placement, etc.
- Develop specific materials co-sponsored with corporations and organizations

Co-permittee Responsibilities -- Activity 5

- Identify and pursue any appropriate local partnerships with corporations, and community and environmental organizations to assist in distribution of stormwater education materials. Templates for local tailoring or materials for purchase are available through the County's "group printing" system (This activity can be combined with Activity 4 in the upcoming Businesses audience section)
- Utilize the "Guide to Local Partnerships"
- Support the countywide efforts with a local "thank you" to stores/partners in the local community. Have a telephone conversation with and send a letter to the participating store manager/partner

Activity 6 1-888-CLEAN-LA and 888CleanLA.com

Description

The County of Los Angeles currently advertises and operates 1-888-CLEAN-LA and several of the larger Co-permittees have their own hotline telephone numbers. The County's 24-hour hotline number allows callers to find out about household hazardous waste roundups and used oil recycling, as well as to report clogged catch basin inlets and dumping and illicit discharge violations. The County already has placed this phone number in all appropriate County telephone directories.

The County infrastructure capability and capacity of the 1-888-CLEAN-LA phone number makes it able to handle thousands of calls per day. Coordination between the County and the Co-permittees with individual hotlines numbers is important for dissemination of cohesive information and call handling. Many cities uses the 888 number and website to provide information for their residents.

County Responsibilities -- Activity 6

- Operate effectively and continue to expand the information provided by the 1-888-CLEAN-LA hotline and website
- Promote 1-888-CLEAN-LA through as many vehicles as possible

Co-permittee Responsibilities -- Activity 6

- If a Co-permittee hotline already is in operation, it should be reviewed and updated once annually to ensure that it is easy for the public to use

Activity 7 Events Targeted to Specific Activities and Population Sub-Groups

Description

Events can serve as focal points for the diverse communities of Los Angeles and they bring added dimension to the Five-Year Public Education Plan when incorporated with other communications components. Events provide an opportunity for people with similar interests and a positive inclination to do the right thing to gather and gain "how to" information about preventing stormwater/urban runoff pollution.

Samples of potential events include:

Event	Pre-Qualified Population
♦ Already-scheduled County and local household hazardous waste round-ups	Attending residents are already doing the right thing by recycling HHW, and most are likely to take another step in pollution prevention if handed simple "how to" information as they drive through the round-up.
♦ Cleanup/beautification campaigns (i.e. Coastal Cleanup, neighborhood cleanups, tree-planting)	Residents are already demonstrating their willingness to do the right thing by volunteering to make a community beautiful. If given information in conjunction with this type of event about simple things to do at home or work, these people are most likely to take another step in pollution prevention.
♦ Community fairs and festivals	Fairs and festivals targeted in neighborhoods in which the two primary audiences reside.
♦ Large events (e.g., Earth Day Celebrations, Eco Expo, LA Times Festival of Books, LA County Fair)	These types of events normally attract people who either are already participating in some form of pollution prevention/recycling activities or belong to one of the two primary target audiences.
♦ Ethnic Events (i.e., Cinco de Mayo, Fiesta Broadway)	Hispanic events are a potential means of reaching the Neat Neighbors, Fix It Foul-Ups and particularly the Rubbish Rebels, who are an important audience due to the amount of pollution they create but need a separate message and theme to reach them.

County Responsibilities -- Activity 7

- Determine the most cost-effective countywide events to participate in
- Distribute potential event information to Co-permittees on a regular basis
- Collaborate with Co-Permittees on event attendance whenever possible
- Distribute Co-Permittee materials at events attended whenever possible

Co-permittee Responsibilities -- Activity 7

- Provide local event input to countywide database
- Provide staffing support, if possible, to events
- Target local events and participate on a city-level

◆ BUSINESSES ◆

Situation Analysis Overview

For the business communities, many of the salient points of the general public apply. The focus groups conducted by the County in November 1996 revealed that the *individual people* working within this audience have a moderate to well-informed base of general information about stormwater/urban runoff pollution. This is likely due to the previous outreach efforts targeted to members of the general public. However, with few exceptions, the Businesses audience *as a whole* needs more information and better knowledge of good, anti-polluting business practices. BMP manuals and training programs should not only provide basic education, but also provide specific industry-related information and "how to" activities that are meaningful and motivate businesses to change behavior.

The Fall 1996 focus groups were conducted with managers and employees of restaurants, auto repair shops and construction companies to gain insight related to the current practices, concerns and motivations for these businesses that were specifically identified in the NPDES Permit. In addition, baseline awareness surveys were conducted for the same business groups in Spring 1997. The following sections include many of the findings of the focus groups and awareness surveys. They provide an overview of some of the barriers and issues that make BMP compliance challenging for both the environmental regulator and the businesses being regulated. These barriers and issues must be kept in mind as the Public Education Plans are developed and implemented. The research conducted in Summer 2001 will be used to evaluate the effectiveness of the effort under the first Five-Year Plan and design the 2001 Five-Year Plan.

Target Audiences

Outreach and education to businesses in Los Angeles County will support the Model Programs which target the following groups of facilities or businesses:

- Phase 1 facilities
- Specific businesses identified in the Permit: motor vehicle repair and body shops, automotive parts/accessories facilities and restaurants
- Construction and new development
- Any additional industrial/commercial facilities that are identified by the Watershed Management Committee as having high pollution generating activities with widespread impact on the County

Regulations and Conflicting Regulatory Solutions

While many owners and workers feel burdened by regulations, they also realize they are necessary. Penalties and fines are still the most powerful incentives for compliance; however, many high-risk industrial businesses also want to feel that they are part of the solution, not part of the problem. Beyond pollution prevention, avoidance of work accidents and disposal of waste in a safe manner are strong motivators.

In some cases, businesses report that solving one problem through regulation or practice creates another. For example, it is against food handling regulations to wash non-food materials (i.e., floor mats) in sinks where food is handled; however, these materials invariably are then carried outside to be cleaned where the water and debris wash into the storm drains.

Additionally, related businesses can impact each other's BMP compliance. For example, if a business contracts with a waste disposal company to provide roll-off containers to collect waste, and the container leaks, BMP compliance has been negatively impacted by a force outside their control and becomes another problem to be addressed.

Compliance Can Be As Easy As "Good Housekeeping"

In many instances, implementing BMPs is a simple matter of good housekeeping. However, the degree of thoroughness and completion is impacted by time, convenience and equipment. Also impacting BMP compliance is training the appropriate personnel -- management as opposed to the workers who are most responsible for basic housekeeping jobs such as cleaning, disposal of waste, tidying areas and putting things in proper places. The high rate of turnover in many industries and the consequent need for ongoing training can be a burden to businesses.

Community Reputation

A company's or business's desire to continue to enhance its good reputation within the community can provide a strong motivator in complying with BMPs -- particularly if the company can tap into a customer base that shows a preference for doing business with an environmentally friendly enterprise. In order to take advantage of this motivator, appropriate publicity for compliant businesses should be part of the plan.

Size of Operation Counts

Focus groups brought out that compliance with BMPs varies according to the size of the operation. Typically, larger companies/businesses already have some form of BMP program in place.[7] Infractions are more prevalent in the small, owner-operated businesses where cost impacts can be greater than in larger businesses, especially if specialized equipment or time-consuming procedures are needed. Small companies use BMPs if they: (1) help them comply with regulations; (2) are easy; and, (3) don't cost (or even save) money.

Threats to Compliance

While some BMPs are as easy as good housekeeping, others can be more difficult to implement. There can be increased costs of doing business with some BMP implementation, especially when a business lacks the specialized equipment or the facility set-up, and can't afford the cost of obtaining this equipment. Costs of compliance would be passed on to the customer in higher charges or higher bid prices for proposed jobs. These can decrease a business' competitiveness. The cost of doing business in an already tenuous business climate can be impacted when new or expanding companies feel they are burdened with BMP implementation costs. The challenge is compounded when established businesses that have always done business a certain way are now expected to implement changes that cost money.

Reasons for Adherence to BMPs

According to focus group findings, individuals in the business sectors follow waste disposal rules for a variety of reasons:

- personal safety
- fear of fines and penalties
- fear of exposure to carcinogenic materials
- customers' expectations

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[7] *Residents and Industry Stormwater Awareness, Practices and Communications Report*, Ibid. And, confirmed by inspectors of the Los Angeles County Department of Public Works, November 1996.

Barriers to BMP Compliance

Barriers to BMP compliance were discussed in the focus groups and include the following:

- lack of financial incentive and/or financial disincentives
- scarcity of recycling centers
- difficulty in teaching workers
- lack of information
- lack of proper equipment
- lack of personal empowerment

Messages and Practices

The business/industry focus groups indicate that much of the themeline and message discussion in the General Public/Residents section (pages 37 and 38) holds true for the Businesses audience. In addition to comments in this earlier discussion, the business/industry focus group found it especially important that messages and activities positively reinforce exemplary practices. Additionally, consideration must be given to some business programs and activities that may need to be modified to address cultural and business sensitivities within certain ethnic communities.

◆ BUSINESSES ◆

Communications Approach

The business outreach component of the Five-Year Public Education Plan is intended to be practical, efficient, and good for businesses as well as the environment in Los Angeles County. The activities described in this section will meet the requirements of the NPDES Permit and work within the parameters of the Model Programs.

The communications activities for business audiences also will take into account that many Los Angeles County enterprises are trying to do the right thing, but have achieved limited success because of the lack of finances and/or a misunderstanding of their own potential to pollute. Education activities implemented in the General Public/Residents Audience will have a spillover effect on the individuals working in the targeted businesses and industries, and education activities within Businesses will have application to many sub-segments of Public Agency Employees. Strategies will be employed to provide resource assistance information (including information about financial assistance) and broad-based education on sound alternatives (BMPs) to prohibited, polluting activities.

Snapshot of Activities

1. "How To" Printed Materials for Broad Range of Businesses
2. Other Educational Printed Materials (Posters, Signage)
3. BMP Workshops for Phase I and II Businesses; Forums and Educational Partnerships
4. Partnerships with Chambers of Commerce, Trade/Business Associations; "Hard-to-Reach" Businesses Outreach
5. Targeted Trade and Business Media Relations
6. Targeted Small Space Print Trade and Business Advertising
7. Advanced Technology and Telecommunications

Activity 1 Production of Printed Materials for Use in Business Outreach Efforts

Description

The County will continue to develop modular BMP "how to" materials: (1) an overview BMP handbook and (2) specific BMP fact sheets-by-industry (for restaurants, automotive businesses, construction companies and related businesses) and by-activity (for Phase I facilities) based on information provided by the Model Program.

The overview handbook will be updated and improved as the foundation of the business/industry information and education package. It will provide a summary of stormwater management in Los Angeles County as well as a good housekeeping philosophy and practices that are applicable to all businesses.

The handbook contains modular and specific industry BMP fact sheets, checklists and applicable posters/flyers that can specifically targeted to the business(es) being educated.

The BMP fact sheets and checklists will:

- be developed with the Industrial/Commercial, New Development/Construction and Educational Site Visit Model Programs;[8]
- encompass a broad range and variety of Phase I and other specified businesses and industries;
- provide practical, "how-to" information presented in a user-friendly manner;
- have countywide application; and,
- be printed under a "group printing"[9] system for cost-effective procurement by Co-permittees (as will the overall handbook)

Other educational information that can be inserted in the overview handbook includes:

- posters already developed by the County for the food and restaurant industry, auto repair, gas stations. Procurement of these posters is available under the "group printing" system

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[8] Please see Appendices for a complete listing of BMPs developed through the Model Programs.

[9] "Group printing" is a large quantity print run of a single item that provides a lower per unit cost than small quantity runs. This lower cost not only will reduce the printing costs for the Co-permittees, it also will reduce the man-hours in design, copywriting and pre-production work.

- *Blueprint for a Clean Ocean* already developed by the County. Procurement available under "group printing" system
- posters/flyers/brochures developed by individual Co-permittees
- personal communications from individual Co-permittees to specific businesses
- health, safety and product information sheets
- references and resources for further information

Distribution -- Activity 1

- Through County and City's permitting process
- 1-888-CLEAN-LA and 888CleanLA.com
- Public information counters

In addition, these BMP materials will be appropriate for use by public employees who work in the fields of construction, including plan checking, permit review and inspections; educational site visits; food preparation; fleet services/vehicle maintenance; grounds/park maintenance; materials purchasing and storage; environmental education; and waste management. (See Public Agency Employees, page 113)

County Responsibilities -- Activity 1

- Continue to refine BMP materials packages (overall handbook and fact sheets) including industry- and activity-specific, concise "how to" materials
- Provide translation/interpretation to appropriate languages as needed

Co-permittee Responsibilities -- Activity 1

- Purchase materials through the County's "group printing" system of BMP materials and distribute them at City public counters, in appropriate workshops, during educational site visits and other business outreach opportunities
- *Optional:* Add City-produced materials to packets, as appropriate

Activity 2 Other Educational Printed Materials

Description

The purpose of posters, flyers, signage and other similar printed materials is to relay relevant information about stormwater/urban runoff BMPs in a graphic format that is space-effective and that can be understood at a glance. These materials are typically displayed in high-traffic areas of businesses, so information can be viewed by employees repetitively, reinforcing the messages.

Factors to consider when selecting or developing BMP posters, flyers and signage are:

- Illustrations that are striking and show BMPs so well that only a short caption or written explanation is required
- Information that is fundamental, rather than in-depth or detailed
- Information that is reflective and supportive of the BMPs developed by the Model Programs
- Size of the material should take into account the potential of limited available space
- Production of the materials should take into account interior or exterior (weather-proof) posting and should be easily movable if the job is progressive
- Languages -- the most frequently used languages are English, Spanish and Chinese

Signage is particularly suited to help general contractors overcome worker-related challenges, such as training employees and subcontractors, including those who do not speak English. In addition, construction is allowed to progress only by passing permit inspection milestones; control of stormwater runoff is a permit requirement. Having highly visible and durable signage will help reinforce awareness of and cooperation with implementation of BMPs.

Distribution -- Activity 2

- Inside the modular overview handbook
- By County and City inspectors during site visits
- Through County and City's permitting process
- 1-888-CLEAN-LA and 888CleanLA.com
- Public information counters

In addition, these BMP materials will be appropriate for individual merchants who wash sidewalks and for use by public employees who work in the fields of construction, including plan checking, permit review, and inspections; educational site visits; food preparation; fleet services/vehicle maintenance; grounds/park maintenance; materials purchasing and storage; environmental education; and waste management.

County Responsibilities -- Activity 2

- Make existing posters (food and restaurant industry, auto repair, gas station) available to Co-permittees through the "group printing" system
- Develop additional posters for high-priority business activities identified by the Model Programs and through the Baseline Business Survey
- Provide appropriate language translation/interpretation as needed
- Distribute materials through County distribution channels -- site visits, permit process, 1-888-CLEAN-LA phone number, website, workshops, conferences
- Produce a flyer on sidewalk washing for individual businesses

Co-permittee Responsibilities -- Activity 2

- Purchase and distribute existing posters (food and restaurant industry, auto repair, gas station) and any new posters (e.g., sidewalk washing) made available by the County through its "group printing" system. Co-permittee distribution avenues: site visits, permit process, local hotline/help phone number, workshops, conferences

Activity 3 BMP Workshops for High-Risk Businesses in Conjunction With Model Programs. Forums and Educational Partnerships Targeting Polluting Activities Common to a Broad Range of Businesses.

Description

For businesses and/or activities that are identified as high-priority -- those in large numbers and/or have a greater potential to pollute -- workshops will be developed and produced by the County. Specific businesses targeted for workshops include: auto repair shops, restaurants and new development/construction.

Workshops targeting Phase I businesses will focus on specific activities found to be of high priority in the Industrial/Commercial Model Program, such as manufacturers dealing with safe storage and handling of chemicals and other hazardous materials. It should also be noted that the Model Programs and Baseline survey may identify additional businesses that would benefit from BMP workshops.

The purpose of these workshops is to create a training opportunity to educate owners, managers and supervisors about stormwater/urban runoff BMPs related to their professions and the simple, relevant techniques and operations that can be used. In addition to educating these professions about stormwater pollution management, training should reinforce the incentives for businesses to implement BMPs -- achieve cost savings (when applicable), promote a safe working environment, protect employee health, comply with local, state and federal regulations and provide customer satisfaction.

Additionally, invitations will be extended to public agency employees (Public Agency Employee Activity 3) who hold municipal jobs in the professions and business practices presented in the business/industry annual workshops and partnerships' outreach.

Workshop Targets

- Auto repair shop owners/managers
- Restaurant owners/managers
- New Development/Construction managers/supervisors
- Phase I Business owners/managers
- Other specific businesses indicated by Model Programs
- Municipal employees engaged in any of above activities
  - Chambers of Commerce

Forum/Partnership Targets

- Professional Trade Schools
- Trade Assn. Local Chapters
- General Contractors Licensing
- Vocational Programs
- Continuing Education
- Trade Shows and Conferences
- Public Agency Employees

Materials Utilized -- Activity 3

- Overview BMP handbook and appropriate BMP inserts/check lists (See Activity 1)
- Other printed materials (See Activity 2)
- For construction and municipal activities workshops, the Public Employee's Trainer's Manual[10] produced by the County includes slides, videos and handouts that can be used
- Materials and procedures identified in reports on the pilot business outreach program -- Southeastern Targeted Opportunities for Pollution Prevention (STOPP)[11]
- Database of Phase I and other specific businesses being created for Model Programs (for notification purposes)

County Responsibilities -- Activity 3

- Develop and produce annual workshops. Once the initial format is set (agenda, publicity, materials), it should be utilized for each workshop to avoid duplication and provide maximum cost- and time-effectiveness
- Research, develop and implement countywide business partnerships (chambers of commerce, trade/business associations) and programs for collaborative forums, conferences, trade shows, speakers bureau opportunities and expanded message distribution
- Determine effectiveness of the workshops as an educational tool early in the Five-Year Public Education Plan and adjust the approach if participation is low compared to the amount of effort required to produce the events
- As Principal Permittee, the County is responsible for assembling and maintaining a database of industrial/commercial facilities for use in the education site visit program. Note: This database will

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[10] *Municipal Activities-Volume 1* and *Construction-Volume 2, Public Employee Trainer Manual* produced by Larry Walker Associates, with Harris & Company and Rogers & Associates. February 1997. One free set was distributed to each Co-permittee in March 1997.

[11] For a copy of the final report of the STOPP pilot program please contact the County of Los Angeles Department of Public Works Environmental Programs Division or the State of California Department of Toxic Substances Control in Long Beach.

be an important tool to be used to invite businesses to appropriate workshops. The County's responsibility for creating the database is being *recognized* -- but *not repeated* -- in this activity of the Five-Year Public Education Plan

Co-permittee Responsibilities -- Activity 3

- Assist in publicizing the workshops, encouraging participation among local business owners/ managers and appropriate public agency employees, providing expert speakers, if needed
- Support the County in its countywide partnerships through business/industry and public agency employee attendance, local publicity, and providing expert speakers and case studies, if needed

Activity 4 Partnerships with Business Associations, Chambers of Commerce, and Other Business-Oriented Organizations. Coordination with Local Business Development Programs for Outreach to "Hard-to-Reach" Businesses.

Description

Partnerships with business organizations are essential for the business outreach component for three major reasons: (1) The Permit requires (page 59, subsection dd) Co-permittees to promote public participation through cooperative outreach such as "adopt-a" programs. A more effective alternative to "adopt-a" programs is developing local business partnerships, which are not only cooperative, but also target audiences that have been prioritized. (2) Business organizations serve as credible messengers for the business owners, managers, and employees who are members. Therefore, educational programs that are co-sponsored with these organizations have the potential to be more effective than similar programs sponsored by the governments of the County and Co-Permittees alone. (3) The business community has little free time -- by partnering with their business organizations and communicating through their existing meetings and newsletters, an opportunity has been created to deliver targeted stormwater messages in a relevant and time-saving manner.

Relationships and partnerships with mid- to large-size business/trade organizations can expand the message distribution avenues and activities, and supplement program costs through the following:

- Educational forums and/or seminars to communicate BMP "how to" information and provide posters, signage and other materials for use in the work place (Activities 1, 2, 3)
- Targeted small-space advertising in trade publications and association newsletters (Activity 6)
- News articles, case studies and other educational media relations in trade publications and association newsletters (Activity 5)
- Targeted direct mail to managers of specific industries (within this Activity)
- Distribution of materials at meetings, membership drives and information counters (Activities 1, 2)

Independently-owned and community-based businesses typically do not affiliate with the mid- to large-sized business/trade organizations, yet they represent a vast number of stormwater polluters and potential polluters. Reaching these "mom and pop" businesses will involve working with local business development offices, community-based programs and organizations and vendors. Motivating factors for adopting stormwater pollution prevention practices focus on cost, value and regulatory compliance. Many of the activities listed above are applicable to this business/industry sub-set, but will have to be adjusted for a more grassroots, one-on-one effort.

County Responsibilities

- Identify countywide professional associations with whom to develop the most effective partnerships, based upon target audiences, membership and level of activity of the organization. Develop and maintain a contact database
- Identify countywide pollution prevention organizations and other environmental education programs that target similar segments of the business community and develop effective partnerships to coordinate and share outreach. Develop and maintain a contact database
- Solicit countywide alliances with Chambers of Commerce and other business-oriented organizations to expand message distribution, enhance credibility of messages and activities, and to supplement program costs
- Provide printed BMP materials as needed for mailings, information counters, etc.
- Develop trade associations' publications list for news bureau and provide news articles for trade association newsletters
- Incorporate business/industry activity-specific information into news bureau
- Develop educational materials co-sponsored with business associations
- Prepare news articles for trade publications and association newsletters
- Develop targeted direct mail to managers of specific industries

County Responsibilities, cont.:

- Develop presentation/exhibit materials for participation in business/industry events
- Develop a "Guide to Local Partnerships" manual as a resource and reference for Co-permittees working on the local level

Co-permittee Responsibilities:

- Identify business/trade organizations with which to partner for programs and information distribution
- Identify appropriate local business events in which to participate
- Support local and countywide business/trade association events with personnel and local information
- Provide media list of local business/trade organizations' newsletters and publications
- Utilize the "Guide to Local Partnerships" to create business/industry grassroots outreach opportunities

Note to Co-permittees:

The range of ways for Co-permittees to satisfy this requirement is quite wide -- from minimal to highly participatory. Examples include: (1) have a telephone conversation with, and send a letter to the manager of the local Chamber of Commerce to inform him/her of County-sponsored workshops that will be available to businesses in the community. The manager of the Chamber would then be able to pass along important information about the workshops to members. (2) Provide BMP materials to local businesses for distribution to the public at the check-out counters or information centers. (3) Enlist financial and "in-kind" support from major businesses or organizations to co-sponsor local stormwater education events, such as providing meeting room space at no charge, contributing money to cover a portion of the costs of the event, or providing expert speakers, refreshments or free samples. (4) Participate in a local event as a speaker or provide materials to attendees.

Activity 5 Targeted Trade and Business Media Relations

Description

Business people get substantial information related to their professions from a variety of periodicals -- such as trade association newsletters/publications (discussed in Activity 4), professional periodicals, the business section of daily and weekly newspapers, and business-oriented radio and television.

The basic components of a business/industry media relations campaign will be incorporated into the overarching General Public/Residents media relations program discussed in the previous section (Activity 3).

Specifically these components include:

- Overarching media information kit including modular countywide and city-specific business/industry information
- Media releases reporting on or announcing business/industry events, issues and activities around the County
- Media advisories announcing business/industry events or specific happenings
- Editorial placements in trade publications, business reporters of newspapers, radio and television
- Meetings with editorial boards to encourage coverage and support of business stormwater pollution prevention
- Public service announcements

County Responsibilities -- Activity 5

- Develop a business publications list including association and organizational newsletters
- Supplement the News Bureau discussed in General Public/Residents Activity 3 with business-related case studies, resources, references
- Develop a "Guide to Local Business Media Relations" manual to serve as a reference and resource for Co-permittees' local media relations efforts
- Draft and distribute media releases reporting on or announcing countywide activities, events and issues. Provide "template" releases to the Co-permittees in advance of the release date for localized use

- Develop and place countywide business stories

Co-permittee Responsibilities -- Activity 5

- Utilize the "Guide to Local Media Relations" manual to implement media relations activities within the community -- press releases, story placement and PSAs

Optional:

- Provide the countywide News Bureau with local case studies, media outlet lists, resources and references

Activity 6 Targeted Small-Space Print Trade and Business Advertising

Description

The advertising campaign within this audience will be limited to small-space print advertisements that are placed in specific and targeted business and industry publications. The message(s) will be focused on educating business readers about particular clean business practices in the industry that is the subject of the publication. General awareness ads that speak to a broad range of businesses as a group are *not* part of this program. In addition to media buys in trade and business publications, print advertising space will be purchased in appropriate local community and ethnic newspapers to reach the small, mid-size and "mom and pop" businesses.

A series of small-space template "good practice" ads for each of the high-risk businesses will be developed along with ads for other potentially high-polluting businesses as determined and directed through the Model Programs. These ads will incorporate and follow the overarching approach discussed in Chapter III, Five-Year Public Education Plan Overview. These templates will be available to the Co-permittees as photostats or on computer disk for placement in their community newspapers as part of their local media plan and in appropriate City agency and departmental newsletters.

If a Co-permittee has a business recognition program, it can use the "good practice" ad templates and add the business logo(s) to acknowledge the specific businesses that are doing a good job while educating other businesses about the practices they implement in their operations.

Targeted Publications -- Activity 6

- Trade and business monthly publications for the high-risk businesses (many of these are glossy national publications and will have reach outside the Southern California area)
- Local trade and business publications published by local organizations such as unions, trade associations, chambers of commerce, small business organizations, ethnic business associations and vendor newsletters
- Community-based and ethnic newspapers
- Public agency, City and departmental newsletters
- Business websites as appropriate

County Responsibilities -- Activity 6

- Develop series of small-space print advertising templates and make these available to Co-permittees as photostats or on disk
- Provide language interpretation of print ad series, as needed
- Develop a countywide media buy in business periodicals and publications produced by unions, trade associations, chambers of commerce
- Provide information/ideas for localizing advertising messages for Co-permittee use
- Negotiate, as available, PSA space in these publications

Co-permittee Responsibilities -- Activity 6

- Supplement County media buys by funding additional buys in the local market

Optional:

- Negotiate PSA space in the local market

Activity 7 Advanced Technology and Telecommunications

Description -- 1-888-CLEAN-LA and 888CleanLA.com

The County of Los Angeles currently advertises and operates 1-888-CLEAN-LA and 888CleanLA.com. The County's 24-hour hotline number allows callers to find out about household hazardous waste roundups and used oil recycling as well as to report clogged catch basin inlets, and dumping and illicit discharge violations. The website offers this information online as well as additional information that cannot be accommodated by a telephone system.

The County infrastructure capability and capacity of the 1-888-CLEAN-LA phone number makes it able to handle thousands of calls per day.

Coordination between the County and the Co-permittees with individual hotline numbers is important for dissemination of cohesive information and call handling.

County Responsibilities -- Activity 7

- Include these resource websites in the County News Bureau
- In the event a County of Los Angeles website is developed, include the stormwater BMP information as provided by the Model Programs and link all appropriate and related websites to its design
- Operate effectively and continue to expand the information provided by the 1-888-CLEAN-LA hotline number
- Provide a guide manual to Co-permittees with individual 1-800 hotlines that provides an information and call handling resources link allowing cohesive dissemination of pollution prevention practices
- Promote 1-888-CLEAN-LA and 888CleanLA.com through as many vehicles as possible (media relations, flyers, posters, advertising, etc.)

Co-permittee Responsibilities -- Activity 7

- Provide addresses for new websites to the County News Bureau as they come on-line
- Promote the addresses of existing websites through appropriate channels (e.g., newsletters, publications, media releases)
- In the event a Co-permittee has a City website or develops a City website, include the stormwater BMP information as provided by the Model Programs

- If a Co-permittee 1-800 hotline number already is in operation, it should be reviewed and updated, if necessary, with an infrastructure that will effectively disseminate information about pollution prevention practices in a consumer-friendly manner
- Work with the County and utilize the provided guide manual to coordinate information and call handling between the County and the Co-permittees so the system appears to be seamless throughout the County
- Promote both the 1-888-CLEAN-LA and local number through as many vehicles as possible (media relations, flyers, posters, advertising, etc.)

Situation Analysis Overview

While there is little existing statistical information on children and their polluting and pollution prevention behaviors, it is generally accepted that children are commonly the trend setters or "influencers," the people who break ground for the widespread changes of the future. For example, children have been the critical players in the education/action process for the recycling movement. Recycling activities that are conducted in the classroom and schoolwide, either curriculum projects or as fund-raisers, almost always translate into direct or indirect parental involvement. Either the parent has to collect glass, aluminum or plastic for their children to take to school, or they are reminded by their children during the course of normal family life to recycle that glass, aluminum or plastic bottle.

While children have been very successful home messengers for recycling; in reality, they don't naturally segment environmental issues into individual topics like recycling, used oil or water pollution. Teachers and other adults tend to do that and present them as specific topics -- sometimes in a related context and sometimes as separate subjects presented throughout the year. Pollution prevention should be taught to children as a single overarching topic and reinforced as such throughout the year.

Curriculum Challenges

The challenge faced by Los Angeles County and its Co-permittees -- the same challenge found with the General Public/Residents audience -- is to rise above the clutter and become known for materials that are teacher-useful and student-helpful. This means the materials must be:

- be linked to State Standards for education;
- fun and enjoyable;
- flexible with supportive resources;
- appropriate for specific grade levels;
- do-able within potentially limited classroom budgets, resources, and time;
- expandable beyond the curriculum and the classroom; and,
- contain practical and usable information that can be interwoven into science, math, art and other curriculum subjects for greater reach and re-enforcement.

The effectiveness of the school education program will be reinforced by the materials, activities, the "messenger," and its ability to carry beyond the classroom. This is particularly true when

activities can be developed that require family involvement and that tie back into and support programs within the General Public/Residents.

Youthful Motivation

Information from teachers indicates that children in the K-3 grades have the most natural curiosity and are the most motivated and enthusiastic to carry messages home, and to share activities with their parents or guardians. As children get older -- 4th through 7th grades -- they more often share ideas and activities with their peers than with their parents, and curriculum activities should reflect this inclination. Activities have been designed for teams or groups of youth so they are part not only of the implementation process, but also in decision making and have some form of control over the final result. These children also can become team peer teachers, presenting their projects and accomplishments to the children in the lower grades. High school students require a different focus. While most are more concerned about themselves and their future, this self-interest can be translated into environmental "lessons" through career exploration programs.

The Los Angeles County School System

The 1,650 public schools, 1,320 private schools and 2 percent home-taught student population in Los Angeles County make the diversity of this population as daunting as the general population. Added to this challenge are the restrictive budgetary parameters that prevent schools from doing many of the basic educational activities they would like to do. This situation is complicated by the bureaucratic approval process to implement new programs even when funding is supplied.

Existing Programs

There are a large number of existing environmental education programs available in Los Angeles County including:

- the County's current elementary school program which covers the spectrum of environmental topics from recycling to stormwater pollution and includes outreach beyond the classroom through community-based youth events
- the County's secondary environmental education school program which covers the full range of environmental issues through the subject of solid waste management

- the County's annual sponsorship of the "Plan-It-Earth" program and competition for grades 6-9 in conjunction with Times in Education. The complete teachers' package includes project management guidelines, a poster timeline and teacher orientations providing step-by-step directions
- the City of Los Angeles' K-6 assembly-style program which covers the full range of environmental subjects including recycling, water and air pollution, composting, etc.
- "Think Earth" Environmental Education Foundation's curriculum program for children in K-6. An instructional unit is provided for each grade level and each unit interrelates all elements of the environment -- air, land, water and energy -- while emphasizing a specific theme. Each Think Earth unit contains: a teacher guide, two to three full-color posters, story cards, resource/product/trash cards, reproducible worksheet/activity masters and a video
- California Integrated Waste Management Board's "Closing the Loop," a curriculum-based, activity program for school and home designed for teachers and students, K-12

◆ SCHOOL EDUCATION -- GOALS ◆

- Introduce and initiate an anti-pollution ethic at an early age that should carry through to adulthood and to future generations.
- Develop (or integrate) this ethic into an umbrella pollution program that can be implemented with various grades of school children.
- Provide information to school districts once per year on environmental/stormwater education resources.

*Note: The focus of these messages are specified in the NPDES Permit for school children: educate about the difference between sanitary sewers and storm drains; the importance of preventing stormwater pollution; illicit discharge reporting procedures; source minimization and general pollution prevention.

Communications Approach

Given the existence of current and successful school education programs in Los Angeles County, an alliance with one or more of these programs is the most efficient and cost-effective method of communicating with school children.

More than 886,000 elementary school children are enrolled in Los Angeles County schools. For these K-6 children, the County's school program and coordinating youth events will provide the vehicles to teach pollution prevention activities. For the County's more than 621,000 middle- and high school children, the Secondary Student Environmental Education Program (SSEEP) will create a higher understanding of environmental issues and motivate teenagers to take action.

Both of these programs encompass a variety of environmental subjects, including stormwater pollution. The subject content is in keeping with the findings of the focus group research and segmentation study which concluded that the education emphasis should be on providing practical, "how to" information rather than an analysis of the storm drain system.

County Responsibilities -- School Education

- Examine all existing, comprehensive school programs and develop an alliance with the programs best suited to meet the Five-Year Public Education Plan and NPDES goals and objectives:

- integrates multiple environmental messages (e.g., recycling, water pollution, solid waste)
- expandable beyond the curriculum and classroom
- utilizes program activities/format that already has been approved by the schools and teachers
- do-able within potentially limited classroom and County budgets, resources and time

Co-permittee Responsibilities -- School Education

- Encourage local school districts/systems to take advantage of selected Countywide programs

Note:

Co-permittees will not be responsible for distribution of materials to public or private schools within their respective jurisdictions.

Stormwater Quality Management Plan (SQMP)

Development Construction Program

URS Corporation
Camp Dresser & McKee Inc.
Consensus Planning
Psomas and Associates
Larry Walker Associates
Geoff Brosseau

FEBRUARY 2001

Stormwater Quality Management Plan (SQMP)

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FEBRUARY 2001

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ES.1 OVERVIEW

On July 15, 1996, the Los Angeles Regional Water Quality Control Board (Regional Board) issued a municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit (Permit) to the County of Los Angeles and 85 cities (Permittees). This Permit contains a requirement for Permittees to develop and implement within their jurisdiction a Storm Water Management Program (SWMP). The Countywide Storm Water Management Plan (CSWMP) is the unified plan consisting of model programs developed under the Storm Water Management Program requirements as established by the Permit. These model programs are aimed to reduce pollutant discharges to the maximum extent practicable for attaining water quality objectives and protecting beneficial uses of receiving waters in Los Angeles County.

In the 2001 NPDES permit, the CSWMP has been renamed to the Stormwater Quality Management Plan (SQMP). For the remainder of this document, the acronym SQMP is used.

The Permit required the Permittees to develop a model program to address each of the following:

- Illicit Connections and Illicit Discharges,
- Development Planning,
- Development Construction,
- Public Agency Activities, and
- Public Information and Participation

Each model program is a "stand-alone" document that describes one of these five elements of the SQMP. Record-keeping and reporting requirements are also associated with each model program. This Executive Summary describes the primary requirements of each of the model programs comprising the SQMP. The remainder of this document is the SQMP element referred to as the Development Construction Program, which was approved by the Regional Board in February 1999.

ES.2 MODEL ILLICIT CONNECTIONS / ILLICIT DISCHARGE ELIMINATION PROGRAM

Part 2.II of the Permit contains requirements specifically for the identification and elimination of illicit connections and illicit discharges to the municipal separate storm sewer system (MS4), generally referred to in this document as "storm drain system." The Permit requirements include

five components for the elimination of illicit connections and illicit discharges. Those five components are:

- Illicit connection elimination,
- Illicit discharge elimination,
- Best management practices (BMPs) program for designated non-stormwater discharges,
- Public reporting of illicit discharge and disposal practices, and
- Hazardous waste reporting program.

Illicit Connection Elimination

The goal of this component is to detect and eliminate illicit connections in order to reduce pollutants discharged through such connections to the maximum extent practical. The objectives are to:

- Conduct storm drain system field screening for illicit connections during scheduled infrastructure maintenance by maintenance personnel.
- Determine the source and nature of suspected illicit discharges by investigating connections to the storm drain system.

The model program also describes a methodology that Pemittees may use in prioritizing areas of their jurisdiction for investigation. Once the illicit connection/discharge has been investigated, one of the following actions must occur:

- If the discharge is determined to consist only of exempted non-stormwater, the connection will be allowed to remain and will no longer be considered an illicit connection. Permittees may elect to issue a permit for the connection or allow the connection to remain if information on the connection is documented; or
- The discharger will be required to obtain an NPDES permit; or
- The connection will be terminated through voluntary action or enforcement proceedings.

Permittees may prioritize potential problem areas for detection and investigation efforts under this program component, using the methodology defined in this model program.

Illicit Discharge Elimination

The goal of this component is to detect and eliminate illicit discharges from entering the storm drain system to reduce pollutants from such discharge to the maximum extent practicable. The objectives are to:

- Investigate, contain, and clean up incidental spills reported by the public, other agencies or observed by Permittee field staff during the course of their normal daily activities,
- Eliminate through voluntary termination or enforcement action prohibited non-stormwater discharges to the storm drain system, and
- Investigate to determine the nature and source of the discharge and eliminate through voluntary termination or enforcement action suspected prohibited non-storm discharges in the storm drain system.

BMPs for Designated Non-Stormwater Discharges

The Permit required the City of Los Angeles to conduct a study on pollutants entering storm drains from street and sidewalk washing operation to:

(i.) Characterize discharges from municipal street washing and sidewalk washing

(ii.) Assess the impacts of such activities and

(iii.) Recommend appropriate BMPs to control any adverse impacts.

The City of Los Angeles completed the study and prepared a report entitled, "A Study of Pollutants Entering Storm Drains from Street and Sidewalk Washing Operations in Los Angeles, California." The Regional Board approved recommended BMPs for street and sidewalk washing activities.

Public Reporting

The goal of this component is to promote, publicize and facilitate public reporting of illicit discharges and illicit disposal practices. Permittees must implement a system for complainant documentation and a follow up response for calls received from the public regarding potential illicit discharges and illicit disposal practices.

Reporting Hazardous Substances Entering the Storm Drain System

The goal of this component is to facilitate appropriate reporting of hazardous substances entering the storm drain system as a result of an illicit discharge. The Permittees must implement a

reporting program to document quantities of hazardous substances entering the storm drain system.

ES.3 MODEL DEVELOPMENT PLANNING PROGRAM

"Development" Projects encompass those projects that are subject to a planning and permitting review process by a Permittee. A "Development" Project may be new development, redevelopment, renovation, remodeling, rehabilitation, infill, or other terms that may be used in a Permittee's ordinances and/or building code. The planning and design of public facilities have similar requirements described in the Model Public Agency Activities Program, another component of the Countywide Storm Water Management Plan.

The fundamental concept of this program component is to identify development that may significantly impact stormwater quality and to then to include permanent BMPs in the project's design. Development projects that may significantly impact stormwater quality are Planning "Priority" Projects. Other projects are deemed "Exempt" from these program requirements.

Each Permittee will implement a development-planning program that includes the following components:

- System for determining the appropriate category (Priority or Exempt) for a Development Project;
- Recommended list of BMPs to be considered, and as appropriate, implemented for Development Projects;
- Process to ensure that Planning Priority Projects incorporate the Standard Urban Storm Water Mitigation Plans using the recommended list of BMPs;
- Guidelines for California Environmental Quality Act (CEQA) compliance;
- Guidelines for the revision of General Plan elements to include watershed and stormwater quality management considerations, when General Plan elements are being significantly rewritten; and
- Developer information program that provides general guidance on the Permittee's development planning program, and specific guidance on BMP selection and the Standard Urban Storm Water Mitigation Plans.

A checklist and flowchart are included in the Model Development Planning Program to assist Permittees in determining whether a project is Priority or Exempt.

ES.4 MODEL DEVELOPMENT CONSTRUCTION PROGRAM

Permittees must also implement a program to manage stormwater and urban runoff associated with construction activities within their jurisdictions. The Model Development Construction Program addresses:

- Development and implementation of construction site BMPs;
- Implementation of procedures to verify Notice of Intent (NOI) filing with the State Water Resources Control Board and completion of stormwater pollution prevention plan (SWPPP) for projects subject to the California General Construction Permit, and
- Implementation of a construction inspection program.

Construction Site BMPs

A Development Construction Project is defined as projects for which site activities such as clearing, grading, excavation, road construction, structure construction, or structure demolition results in the disturbance of soil.

In certain situations, where impact to stormwater quality is a greater threat, Development Construction Projects should be given greater scrutiny to ensure that minimum requirements are met. These projects which present a greater threat to water quality, *but are not subject to the California General Permit for Storm Water Discharges Associated with Construction Activity*[1] are called Construction Priority Projects.

Unless specifically exempted, all Development Construction Projects will be required to implement BMPs to meet minimum water quality protection requirements. As a condition for issuing a grading or building permit, applicants for covered Development Construction Projects shall be required to certify that they understand and will comply with the minimum BMPs requirements related to construction site runoff.

Projects Subject to the General Construction Permit

Developers of construction sites subject to the General Construction Permit are required to prepare and implement a Storm Water Pollution Prevention Plan (state SWPPP). Before issuing building or grading permits, Permittees will require applicants to demonstrate that a Notice of Intent (NOI) has been filed with the State Water Resources Control Board (SWRCB), and that a state SWPPP has been prepared for projects subject to the General Construction Permit.

[1] A project is subject to the General Construction Permit if it disturbs 5 acres or more of soil, or the project results in the disturbance of less than 5 acres but is part of a larger common plan of development or sale that exceeds 5 acres.

Requirements for Construction Priority Projects

Prior to receiving a building or grading permit, applicants for Construction Priority Projects must prepare a local stormwater pollution prevention plan (local SWPPP) covering construction materials and waste management control, and must certify that they will implement the local SWPPP year-round. Applicants for Construction Priority projects must also prepare and implement a Wet Weather Erosion Control Plan (WWECP) if the project will leave soil disturbed during the rainy season (November 1 through April 15).

Site Inspection and Enforcement

Each Permittee will implement site inspection procedures to assess whether the minimum requirements for Development Construction Projects are being achieved and appropriate BMPs are being implemented. Site inspections will also determine if local SWPPPs are being implemented at projects where they apply. Developers and/or contractors will also be required to conduct and document self-inspections of their construction site. Each Permittee will also develop and implement enforcement procedures to require that corrective actions be undertaken when the requirements are not met.

ES.5 MODEL PUBLIC AGENCY ACTIVITIES PROGRAM

Part IV.C of the Permit contains requirements specifically for public agency activities and facilities. Components of the Public Agency Activities Model Program describe measures to be taken by Permittees to reduce stormwater impacts from public agency activities and facilities such as sanitary sewer systems, public construction activities, vehicle maintenance and material storage facilities, recreation facilities, stormwater drainage systems, streets and roads, etc.

Sewage Systems Operations

This program component is applicable to all Permittees who own and operate a sewage collection system. Although sewage systems themselves are not a regular source of stormwater pollution, raw sewage contains pollutants that can pose a serious threat to both human health and the quality of receiving waters if they enter the storm drain system through incidents such as spills, leaks, or overflows. The goal of this program is to reduce the impact of Permittee-owned sewage system operations on stormwater quality.

The objectives of this program component are to:

- Keep any sewage overflows or leaks from entering the storm drain system or receiving waters.

- Identify and repair sewage system blockages, exfiltrations, overflows and implement procedures for investigating the causes.
- Notify public health authorities in cases where threats to public health exist.

Public Construction Activities Management

This program component is applicable to all Permittees who construct or contract to construct public facilities, including infrastructure. The program component requires the use of temporary best management practices (BMPs) to reduce the discharge of pollutants from public construction sites. In addition, public agency facilities with the potential for having a significant effect on stormwater quality when completed by virtue of their size, nature of on-site activities, or other factors must incorporate permanent BMPs in the planning and design of the project.

The objectives of this program component are to:

- Select and incorporate appropriate construction control measures for stormwater quality management from construction sites.
- Conduct and inspection program, including enforcement procedures as necessary, to verify that the construction control measures are implemented and performed effectively throughout the construction period.

Vehicle Maintenance / Material Storage Facilities Management

This program component is applicable to all Permittees who own and operate vehicle maintenance or materials storage facilities. Activities at these facilities may generate waste, spills and leaks that could potentially reach the storm drain system and receiving waters. The goal of this program is to make stormwater quality a consideration when conducting activities at municipal facilities.

The objectives of this program component are to:

- Identify and evaluate sources of pollutants from public vehicle maintenance/material storage facilities that may affect the quality of stormwater discharge from the facility.
- Identify and implement site-specific best management practices to reduce or prevent pollutants in stormwater discharges.

Landscape and Recreational Facilities Management

This program component is applicable to all Permittees who own and operate recreational facilities. Maintenance practices at parks and recreation facilities generally include fertilizer and pesticide applications, vegetation maintenance and disposal, swimming pool chemical

maintenance and draining, and trash and debris management. All of these activities have the potential to contribute pollutants to the storm drain system. If improperly managed, potential pollutants can be transported in runoff (stormwater and non-stormwater discharges) to the storm drain system and subsequently to receiving waters. The goal of the program for landscape and recreational facilities management is to make the stormwater quality a consideration when conducting operation and maintenance activities.

The objectives of this program component are to:

- Minimize the discharge of pesticides, herbicides and fertilizers to the storm drain system and receiving waters.
- Prevent the disposal of landscape waste into the storm drain system.
- Minimize the trash, debris and other pollutants from entering Permitee-owned recreational water bodies.
- Discharge municipal swimming pool water in a manner that will not contribute pollutants to receiving waters.

Storm Drain Operation and Management

The storm drain system functions primarily to collect and convey surface runoff to receiving waters during storms in order to prevent flooding. A common municipal activity includes the maintenance of the storm drain system to maintain hydraulic function as intended during storms. The goal of this program is to reduce the impact of storm drain operation and maintenance activities on stormwater quality.

The objectives of this program component are to:

- Inspect and clean catch basins annually and keep appropriate records.
- Remove trash and debris annually from open channels and properly dispose of these materials to prevent them from being washed to receiving waters.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained and cleaned up, or eliminated.
- Review maintenance activities to verify that they minimize the amount of pollutants discharged to receiving waters.

Streets and Roads Maintenance

Streets and roads may collect litter and debris from nearby activities, as well as from vehicular traffic. During the course of routine maintenance waste materials are often generated. The goal

of this component is to reduce the impact of Permittee street and road operations and maintenance on stormwater quality.

The objectives of this program component are to:

- Sweep curbed streets to reduce the discharge of pollutants associated with activities occurring in street and road rights-of-way.
- Minimize the discharge of pollutants associated with the maintenance of streets and roads.

Parking Facilities Management

Permittees who own parking lots with more than 25 parking spaces located in areas with potential exposure to stormwater must have a parking facilities management plan. The goal of this component is to reduce the impact of these parking facilities on the quality of stormwater discharges and receiving waters. The objective of this program component is to remove debris from parking facilities to reduce the amount of material that comes into contact with stormwater.

Public Industrial Activities

Industrial activities, whether private or public, have the potential to discharge pollutants to the storm drain system. Many industrial facilities are subject to the California General Industrial Activities Storm Water Permit (General Industrial Permit) for control of stormwater pollution. The goal of the General Industrial Permit is to reduce the impact of industrial facilities on stormwater quality. This provision of the Permit may procedurally simplify and reduce the cost of Permittees' compliance for their industrial facilities (Phase 1) by providing the option to obtain coverage under the Permit in lieu of the General Industrial Permit. The objective of this program component is to comply with all requirements and conditions contained in the General Industrial Permit.

Emergency Procedures

Each Permittee must consider the impact of discharges to the storm drain system during emergency repairs of essential public services and infrastructure, and response to natural disasters. The goal is to reduce the impact of emergency response activities on receiving waters, to the extent possible, without compromising public health and safety.

The objectives of this program component are to:

- Recognize that public health and safety are the highest priority when conducting emergency response activities.

The objectives of this program component are to:

- Recognize that public health and safety are the highest priority when conducting emergency response activities.
- Protect surface water quality by incorporating appropriate BMPs into emergency response activities to the extent possible.

ES.6 MODEL PUBLIC INFORMATION AND PARTICIPATION PROGRAM

The purpose of the Public Information and Participation Program (Five-Year Public Education Plan) is to provide the framework for a comprehensive educational stormwater and urban runoff outreach approach that will reach as many Los Angeles County residents as possible. The Five-Year Public Education Plan is research-based, broad-based with overarching themes, flexible, adaptable, and simplistic in order to produce behavior change.

Groups of residents differ significantly in terms of the amount of pollution they contribute, their demographics and lifestyle, attitudes related to stormwater pollution, and probability of changing their behaviors. By better understanding the general County resident population, resources may be directed to those segments of the population that pose the greatest threat to stormwater quality and who represent the greatest opportunity to respond to a public education campaign.

Some key strategies developed for successful implementation of the education model include:

- Creating Overarching Approach – A unified overall public education approach sets a "tone" for the program and once established helps target audiences identify the program with its pollution prevention message.
- Building Partnerships – Integrate County and city programs, cooperate with environmental groups, co-Permittees, and other public and business groups to disseminate public education program materials and special events information.
- Unify Pollution Prevention Efforts – Link all pollution prevention efforts (such as recycling, used oil and household waste) under a single agenda rather than under multiple prevention splinter programs.
- Develop "How To" Instructions – Provide specific guidelines supported by simple easy to remember tasks and concise "how to" instructions for pollution prevention actions that residents and business may incorporate into their everyday routines.
- Monitoring and Evaluation System – Establish an evaluation system to measure program effectiveness by assessing the number of people who show increased awareness, intent and/or actions in reducing stormwater pollution. Re-evaluate and enhance program components on continually based on program effectiveness.

- Multiple Audience Impact – Develop program materials and activities that may be implemented and have impact on more than one audience at a time.

The Model Public Information and Participation Program also includes reporting requirements for Permittees to support the Annual Program Report to the Regional Board. These reporting requirements include the documentation of information such as:

- Number of media outlets contacted to run public service announcements (PSAs),
- Dollar value and number of media buys,
- Audience of the media PSAs,
- List of local businesses enlisted to place non-traditional advertising (point-of-purchase displays, product neck hangers, etc.)
- Numbers and types of stormwater pollution prevention materials distributed, and
- Whether there is an increase in the number of illicit discharge reports to the Permittee.

1.1 BACKGROUND

The municipal storm water National Pollutant Discharge Elimination System (NPDES) permit (Permit) issued to Los Angeles County and 85 cities by the Los Angeles Regional Water Quality Control Board (Regional Board) on July 15, 1996 requires for Permittees to develop and implement a Model Development Construction Program (Model Program). This Model Program describes the actions that Permittees should take to meet the requirements for this provision of the Permit.

More generally, development construction activities identified by the Permit are summarized in Table 1-1. Permit requirements are fully enforceable and may only be changed through action by the Regional Board. The Model Program is to be approved by the Regional Board staff (Executive Officer) and may be changed only by approval of the Executive Officer. The applicable portion of the Permit that covers development construction is included as Appendix A to this Model Program.

Table 1-1

Permit Requirements - Development Construction

Permit Section	Requirement	Compliance Date
III.B.2.a	Develop and implement a program of construction control measures. Address minimum requirements and recommended BMPs.	6 months after commencement of next fiscal year following Executive Officer approval of model program, but no later than 7/30/99.(1)
III.B.2.b	Implement a procedure to require grading permit applicants covered by the California General Permit for Storm Water Discharges Associated with Construction Activity to show NOI filed and SWPPP prepared.	1/31/97
III.B.3.b	Implement a construction inspection program.	6 months after commencement of next fiscal year following Executive Officer approval of model program, but no later than 7/30/99.(1)

(1) Provided that such approval is issued not later than 90 days prior to the commencement of the Permittee's fiscal year.

1.2 OVERVIEW OF PROJECTS SUBJECT TO THE MODEL PROGRAM

Construction Projects

A Development Construction Project is a site where activities such as clearing, grading, excavation, road construction, structure construction, or structure demolition results in the disturbance of soil.

Unless otherwise designated as a Construction Priority Project or an Exempt Project, all Development Construction Projects are required to meet the minimum water quality protection requirements for construction permits discussed in Section 2.1.

Construction Priority Project

In certain situations, where impact to storm water quality is a greater threat, Development Construction Projects should be given greater scrutiny to ensure that minimum requirements are met. These situations are:

Projects where a greater threat to water quality exists, *but which are not subject to the California General Permit for Storm Water Discharges Associated with Construction Activity* are called Construction Priority Projects. Three conditions determine a Construction Priority Project:

1) the project is in or adjacent to an environmentally sensitive area, or
2) the project will disturb greater than two acres, or
3) the project is located in a hillside area (as defined by the local jurisdiction) where soil disturbance occurs during the rainy season.

Projects Subject to the General Construction Permit

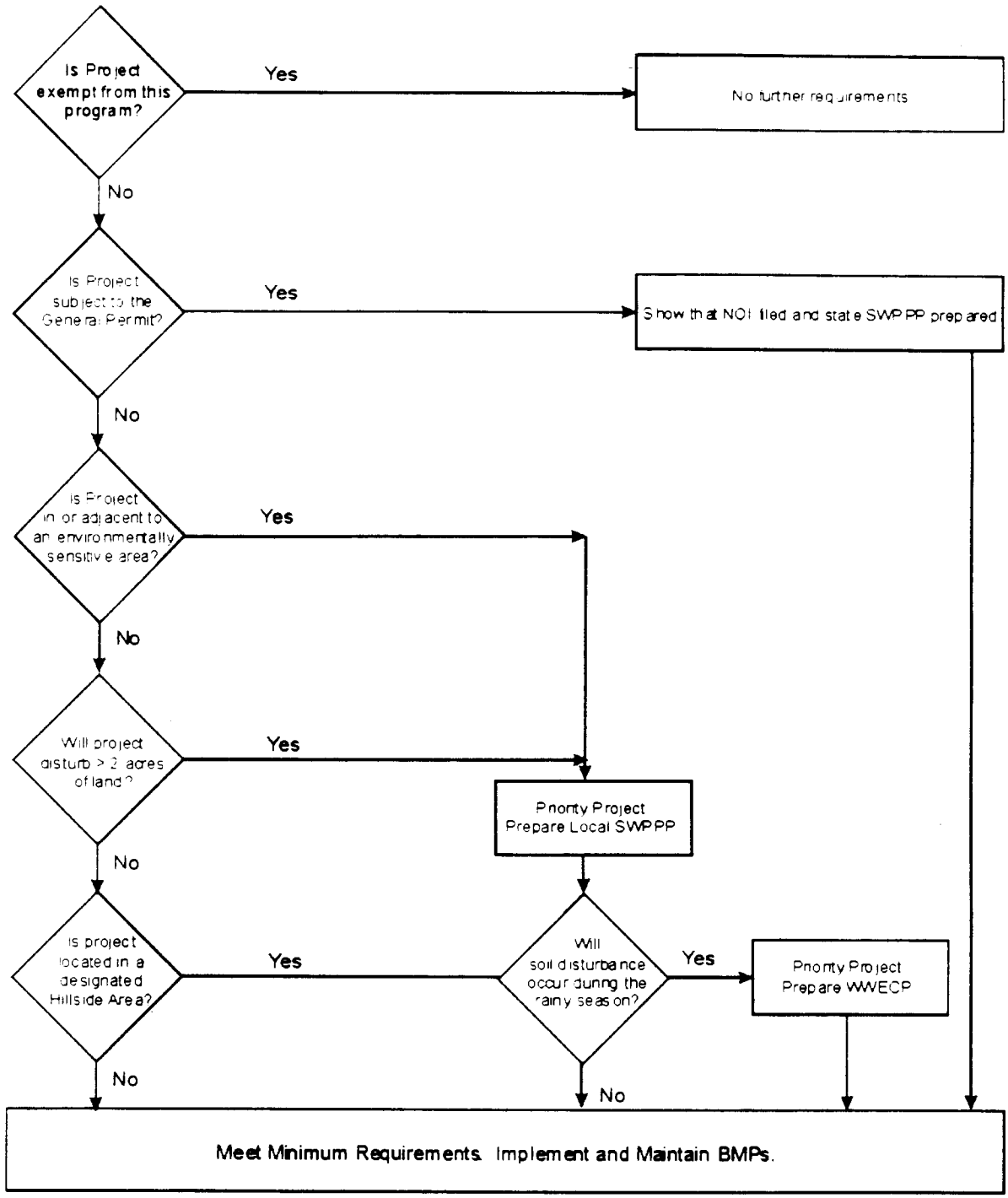
A project is subject to the California General Permit for Storm Water Discharges Associated with Construction Activity (hereinafter referred to as the General Construction Permit) if it disturbs 5 acres or more of soil, or the project results in the disturbance of less than 5 acres but is part of a larger common plan of development or sale that exceeds 5 acres.

Exempt Projects

Permittees may exempt certain types of Development Construction Projects that pose minimum risk of storm water pollution as defined in Section 2.4.

A process flow chart for the application of this Model Program is shown in Figure 1-1.

Figure 1-1. Construction Control Measures



2.1 MINIMUM WATER QUALITY PROTECTION REQUIREMENTS FOR DEVELOPMENT CONSTRUCTION PROJECTS

Unless specifically exempted, all Development Construction Projects will be required to implement best management practices (BMPs) necessary to reduce pollutants to the Maximum Extent Practicable[2] (MEP) to meet the minimum water quality protection requirements as defined in Table 2-1. Development Construction Projects covered under this program include any action proposed by a property owner/developer which requires the issuance of a building or grading permit and includes construction activities, except projects determined to be exempt (as discussed in Section 2.4). Construction activities include activities such as clearing, grading, excavation, road construction, structure construction, or structure demolition that result in soil disturbance.

As a condition for issuing a grading or building permit, ***applicants for covered Development Construction Projects shall be required to certify that they understand and will comply with the minimum requirements defined in Table 2-1.*** Appendix B provides an example certification statement regarding compliance with these minimum standards that project applicants may use.

Table 2-1
Minimum Water Quality Protection Requirements for Development Construction Projects Subject to Storm Water Construction Controls

Category	Minimum Requirements	BMPs(1)
1. Erosion and Sediment Control	Sediments from areas disturbed by construction shall be retained on site, using structural drainage controls to the maximum extent practicable, and stockpiles of soil shall be properly contained to minimize sediment transport from the site to streets, drainage facilities or adjacent properties via runoff, vehicle tracking, or wind.	Sediment Controls
2. Construction Materials Control	Construction-related materials, wastes, spills or residues shall be retained on site to minimize transport from the site to streets, drainage facilities or adjoining properties by wind or runoff. Runoff from equipment and vehicle washing shall be contained at construction sites unless treated to remove sediments and pollutants.	Site Management: Material and Waste Management

(1) BMPs that may be used to meet the minimum requirements are described in Section 2.5

[2] Maximum Extent Practicable (MEP) is the standard for implementation of storm water management programs to reduce pollutants in storm water. MEP refers to storm water management programs taken as a whole. It is the maximum extent possible taking into account equitable consideration and competing facts, including, but not limited to: the gravity of the problem, public health risk, societal concern, environmental benefits, pollutant removal effectiveness, regulatory compliance, public acceptance, implementability, cost and technical feasibility. Section 402(p)(3)(B)(iii) of the Clean Water Act requires that municipal permits "...shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and systems, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

2.2 CONSTRUCTION PRIORITY PROJECTS

2.2.1 Criteria for Construction Priority Projects

Construction Priority Projects are projects that have the potential to significantly affect storm water quality during construction but which do not meet the criteria (i.e., acreage[3]) to be subject to the state General Construction Permit. Construction Priority Projects will be identified through a grading or building permit application, using the following criteria:

- The project is not exempt from this Model Program and not subject to the General Construction Permit; and
- The project will result in soil disturbance of more than 2 acres of land; or
- The project is in or adjacent to an environmentally sensitive area[4]; or
- The project is located in a designated hillside area and soil disturbance will occur at the project site in the rainy season.

Determination of whether a project is a Construction Priority Project will be made by the applicant and then evaluated and approved by the Permittee according to these criteria listed above.

2.2.2 Developer Requirements for Construction Priority Projects

Prior to receiving a building or grading permit, applicants for Construction Priority Projects must prepare a local storm water pollution prevention plan (Local SWPPP) covering construction materials and waste management control, and must certify that they will implement the Local SWPPP year-round. The Local SWPPP shall include:

- The name, location, period of construction, and a brief description of the project;
- Contact information for the owner and contractor;
- Name, location, and description of any environmentally sensitive areas located in or adjacent to the project;
- A list of major construction materials, wastes, and activities at the project site;

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[3] A construction project of 5 acres or more or that which is less than 5 acres but is part of a larger common plan of development or sale. This acreage criteria may be revised downward by the USEPA under Phase II storm water regulations.

[4] Since the Permit does not define "designated environmentally sensitive area," Permittees will designate areas within their jurisdiction as "environmentally sensitive" utilizing criteria such as, but not limited to, the presence of the following: endangered, threatened, or rare species or their habitats; locally designated species (e.g., heritage trees); locally designated natural communities (e.g., oak forest, coastal habitat, etc.); and wildlife dispersal or migration corridors.

- A list of best management practices to be used to control pollutant discharges from major construction materials, wastes, and activities;
- A site plan (construction plans may be used) indicating the selection of BMPs and their location where appropriate; and
- A developer's certification statement that all required and selected BMPs will be effectively implemented.

A copy of the developer's certification statement (Appendix B) must be submitted prior to issuance of a building or grading permit. A copy of the Local SWPPP must be kept on the project site at all times after the start of construction.

Developers are required to complete an inspection checklist (see Appendix C) to document site observations associated with rain events as follows:

- Before every rainfall event that is predicted to produce observable runoff and after every rainfall event that produces observable runoff, and
- At 24-hour intervals during extended rainfall events (excepting weekends or holidays when there is no ongoing site activity on those days).

Applicants for Construction Priority Projects must also prepare and implement a Wet Weather Erosion Control Plan (WWECP) if the project will leave soil disturbed during the rainy season, defined as November 1 through April 15. The WWECP must be prepared, for projects that have already broken ground, not later than 30 days prior to the beginning of each rainy season (i.e., by October 1) during which soil will be disturbed, and implemented throughout the entire rainy season. For projects that will begin construction during the rainy season, the WWECP must be available 30 days before construction commences. The WWECP shall include the following information:

- The name, location, period of construction, and a brief description of the project
- Contact information for the owner and contractor
- A site map (construction plans may be used) showing the location of erosion control and sediment control BMPs that will be implemented for the rainy season
- A certification statement that all required and selected BMPs will be effectively implemented (see Appendix B).

A copy of the WWECP must be kept on the project site at all times beginning 30 days prior to the start of the rainy season through the end of the rainy season (October 1 - April 15).

Guidance and example forms for preparation of Local SWPPPs and WWECPs are included in Appendix D.

2.3 PROJECTS SUBJECT TO THE GENERAL CONSTRUCTION PERMIT

2.3.1 Developer Requirements for Projects Subject to General Construction Permit

Developers of construction sites subject to the General Construction Permit are required to prepare and implement a Storm Water Pollution Prevention Plan. A storm water pollution prevention plan prepared for projects subject to and in conformance with the requirements of the General Construction Permit is referred to herein as a "state SWPPP". The state SWPPP will address all categories of control measures, and has specific documentation requirements. The General Construction Permit can be viewed or downloaded from the State Water Resources Control Board's web page: www.swrcb.ca.gov/stormwtr/construction.htm.[5] It is the obligation of the developer to determine whether a project is subject to the General Construction Permit.

2.3.2 Permittee Requirements for Projects Subject to the General Construction Permit

Before issuing building or grading permits, Permittees will require applicants to demonstrate that a Notice of Intent (NOI) has been filed with the State Water Resources Control Board (SWRCB), and that a state SWPPP has been prepared for projects subject to the General Construction Permit. An example certification form is included in Appendix E that may be used for this purpose. Permittees may require that the SWRCB's letter of filing confirmation be attached to the certification form prior to issuance of building or grading permits.

2.4 EXEMPT PROJECTS

Permittees may exempt certain types of Development Construction Projects from the program that pose a minimum risk of storm water pollution. These projects are exempt from any storm water construction control measures including the minimum BMP requirements. A specific listing of exempt projects is included in this section. Additional exemptions may be determined by the local building official (or equivalent municipal authority) and shall be provided to the Regional Board with a justification for their designation (for purposes of notification).

A list of specific types of Development Construction Projects that are deemed to be exempt include:

- Routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility (Permit definition);

[5] A copy of the General Construction Permit can also be obtained from the Los Angeles Regional Board at 320 W. 4th Street, Suite 200, Los Angeles, CA 90013; telephone 213.576.6600.

- Emergency construction activities required to immediately protect public health and safety;
- Interior remodeling with no outside exposure of construction materials or construction waste to storm water;
- Mechanical permit work;
- Electrical permit work; and
- Sign permit work.

Other types of Development Construction Projects may be designated as except if all three of the following criteria are met:

- No significant soil disturbing activity;
- No outside storage or exposure to storm water of construction materials or construction wastes (unless adequate controls are provided); and
- The activity poses a minimal risk of storm water pollution.

2.5 BEST MANAGEMENT PRACTICES

Best Management Practices (BMPs) are the specific storm water management techniques that are applied to manage construction site runoff. A listing of specific BMPs appropriate for construction activities are summarized in Table 2-2 and have been organized into four major categories:

- ***Sediment Control.*** Feasible methods of trapping eroded sediments so as to prevent a net increase in sediment load in storm water discharges from the site.
- ***Erosion Control.*** Measures that prevent erosion and keep soil particles from entering storm water, lessening the eroded sediment that must be trapped, both during and at the completion of construction.
- ***Site Management.*** Methods to manage the construction site and construction activities in a manner that prevents pollutants from entering storm water, drainage systems or receiving waters.
- ***Materials and Waste Management.*** Methods to manage construction materials and wastes that prevent their entry into storm water, drainage systems, or receiving waters.

These BMPs address multiple construction activity-related pollutants and focus on erosion and sediment control practices, source minimization, education, good housekeeping, good waste

management, and good site planning. Under this Model Program, additional BMPs are applied when the potential for adverse environmental effects from storm water runoff increases. For example, non-priority project developers/contractors may use any combination of BMPs to meet the minimum requirements. However, Construction Priority Projects developers should consider all listed BMPs and, at a minimum, must prepare a Local SWPPP and a WWECP that include the following BMPs:

- ***Sediment Control*** - At site perimeters, below significant slopes (as defined by the local authority but at a minimum applied to grades of 1:5 V:H or greater), and at other similar locations, the use of at least one type of BMP such as silt fence, straw bale, or sand bag barrier to minimize the transport of sediment. At interior storm drain inlets the use of at least one type of inlet protection BMP to minimize the transport of sediment off-site.

- ***Erosion Control*** - On completed disturbed surfaces, the use of at least one type of erosion control (soil stabilization) BMP during the rainy season.

- ***General Site Management and Materials and Waste Management*** - All BMPs applicable to specific construction operations, if such construction operations will occur at the site.

Since avoiding construction activities and/or disturbing soil during the rainy season is the most effective approach to minimize water quality impacts, developers should be advised of this concern and encouraged to minimize such impacts. SWPPP/WWECPs and/or BMPs may be submitted in the form of plan sheets.

2.5.1 Permittee BMP-Related Requirements

Guidance material about the BMPs that may be implemented to meet minimum requirements will be provided by the Permittees to developers/contractors when requested. Permittes will inform developers/contractors that this guidance material is available. Similar guidance material will be provided to site inspectors for use in assisting contractors to meet the minimum requirements. Three forms of guidance material are included in this Model Program:

- A BMP selection matrix in Table 2-2 provides guidance for selecting BMPs for different types of construction activities. The columns on Table 2-2 list the types of construction activities that pose a risk of causing storm water pollution. Each "x" within a column indicates a BMP that should be considered for this type of construction activity.
- BMP selection guidance is provided in Appendix F.

- BMP fact sheets describing each BMP are provided in Appendix G.

2.5.2 Principal Permittee BMP-Related Requirements

The Principal Permittee will develop and provide informational materials to Permittees to provide to developers/contractors through the Developer Information Program conducted under Part 2.III.A of the Permit. These materials will also be developed and made available through the Five-Year Storm Water Public Education Strategy, under Part 2.V.C. of the Permit.

Table 2-2. Stormwater Pollution Controls for Construction Activities

Stormwater Best Management Practices	BMP No. (1)	Categories of Activities																						
		Site Preparation/ Earthmoving		Construction of Underground Structures				Construction of Above Ground Structures				Construction of Roadways, Walkways & Parking Lots			Waterways					Planting & Landscaping			
		Clearing & Grubbing	Earthwork	Foundations	Conduits (Open Cut) Drilling		Tunnels	Wood Frame	Structural Steel	Masonry & Concrete	Roofing & Coating	Concrete	Asphalt	Base & Subgrade	Channel Improvement	Water & Sediment Impoundment	Over Crossing	Under Crossing	Waterfront Construction	Irrigation Facilities	Seeding & Sodding	Mulching	Planting
General Site Management																								
Construction Practices																								
Dewatering Operations	CA01		X	X	X	X	X								X	X	X	X	X					
Paving Operations	CA02											X	X	X	X		X	X						
Structure Construction & Painting	CA03			X			X	X	X	X	X						X	X	X					
Vehicle & Equipment Management																								
Vehicle & Equipment Cleaning	CA30	X	X	X	X	X	X					X	X	X					X					
Vehicle & Equipment Fueling	CA31	X	X	X	X	X	X					X	X	X					X					
Vehicle & Equipment Maintenance	CA32	X	X	X	X	X	X					X	X	X					X					
Contractor Training																								
Employee/Subcontractor Training	CA40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Construction Materials & Waste Management (2)																								
Material Management																								
Material Delivery & Storage	CA10			X	X			X	X	X	X	X	X	X	X		X	X	X		X	X	X
Material Use	CA11			X	X			X	X	X	X	X	X	X	X		X	X	X		X	X	X
Spill Prevention & Control	CA12									X	X		X											
Waste Management																								
Solid Waste Management	CA20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hazardous Waste Management	CA21									X	X	X	X											
Contaminated Soil Management	CA22	X	X	X	X	X	X								X	X								
Concrete Waste Management	CA23			X	X		X			X		X			X		X	X		X				
Sanitary/Septic Waste Management	CA24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

(1) Numbers refer to California Best Management Practices Handbook (See Appendix H)

(2) Some practices are also covered under other regulatory programs. See BMP fact sheets in Appendix H for details.

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Table 2-2. Stormwater Pollution Controls for Construction Activities

Stormwater Best Management Practices	BMP No. (1)	Categories of Activities																					
		Site Preparation/ Earthmoving		Construction of Underground Structures				Construction of Above Ground Structures				Construction of Roadways, Walkways & Parking Lots			Waterways						Planting & Landscaping			
		Clearing & Grubbing	Earthwork	Foundations	Conduits (Open Cut)	Drilling	Tunnels	Wood Frame	Structural Steel	Masonry & Concrete	Roofing & Coating	Concrete	Asphalt	Base & Subgrade	Channel Improvement	Water & Sediment Impoundment	Over Crossing	Under Crossing	Waterfront Construction	Irrigation Facilities	Seeding & Sodding	Mulching	Planting
Erosion Control																							
Site Plannning Considerations																							
Scheduling	ESC01	X	X		X							X	X	X	X	X	X	X	X	X	X	X	X
Preservation of Existing Vegetation	ESC02	X	X		X		X					X	X	X	X	X	X	X	X	X		X	
Vegetation Stabilization																							
Temporary Seeding & Planting	ESC10	X	X												X	X	X		X				
Temporary Mulching	ESC11	X	X												X	X	X		X				
Physical Stabilization																							
Geotextiles & Mats	ESC20	X	X												X	X	X	X	X				
Dust Control	ESC21	X	X		X							X	X	X	X	X	X	X	X	X	X	X	X
Tempory Stream Crossing	ESC22	X	X	X	X	X	X	X	X					X	X	X	X	X		X	X	X	X
Construction Road Stabilization	ESC23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Diversion of Runoff																							
Earth Dike	ESC30	X	X		X										X	X		X	X		X	X	
Temporary Drains & Swales	ESC31	X	X		X										X	X		X	X				
Slope Drain	ESC32	X	X		X										X	X		X	X				
Velocity Reduction																							
Outlet Protection	ESC40	X	X		X										X	X			X				
Check Dams	ESC41	X	X		X										X	X			X				
Slope Roughening/Terracing	ESC42	X	X		X										X	X			X				
Sediment Control																							
Silt Fence	ESC50	X	X		X										X	X		X	X				
Straw Bale Barrier	ESC51	X	X		X										X	X		X	X				
Sand Bag Barrier	ESC52	X	X		X										X	X		X	X				
Brush or Rock Filter	ESC53	X	X		X										X	X		X	X				
Storm Drain Inlet Protection	ESC54	X	X		X										X	X		X	X				
Sediment Trap	ESC55	X	X		X										X	X		X	X				
Sediment Basin	ESC56	X	X		X										X	X		X	X				
Stabilized Construction Entrance	ESC24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

(1) Numbers refer to California Best Management Practices Handbook (See Appendix H).

(2) Some practices are also covered under other regulatory programs. See BMP fact sheets in Appendix H for details.

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Each Permittee will seek to achieve compliance by developers with minimum water quality protection requirements (Table 2-1) and applicable BMPs through site inspections, review of self-audits by developers/contractors, enforcement procedures, and other means as described in this section.

3.1 PERMITTEE SITE INSPECTION RESPONSIBILITIES

Each Permittee will adopt site inspection procedures, as necessary, to assess whether the minimum requirements for Development Construction Projects are being achieved and applicable BMPs are being implemented. Site inspections will also determine if Local SWPPPs/WWECPs are being implemented at projects where they apply. Each Permittee will also develop and implement enforcement procedures to require that corrective actions be undertaken when the requirements are not met. The program will include the following elements:

- Permittee Inspections;
- Developer/Contractor Self-Inspections; and
- Enforcement Procedures

3.2 INSPECTION PROCEDURES

Development Construction Projects are routinely checked by municipal inspectors to verify that the construction work is being performed in accordance with the project plans, building and grading permits, and applicable municipal codes. When a project is in violation of these permits or codes, inspectors have the authority to enforce respective permit conditions by issuing verbal warnings, written notices, or stop work orders. Additional administrative actions may be taken, including revoking the building or grading permit or issuing fines. Inspections may be conducted for various reasons, and at various times and include Permittee site inspections currently performed in ongoing programs, as well as routine owner/contractor self-inspections. At their sole discretion, and when warranted, the Permittee may implement SWPPP/WWECPs and take other measures deemed necessary to protect public health, safety, and welfare with their own resources or by contract.

3.2.1 Permittee Inspections

Permittees or their designated agents must conduct at least one inspection of all Construction Priority Projects and all projects subject to the state General Construction Permit active during the rainy season. If the inspected site is not meeting minimum water quality protection requirements, Permittee inspectors must follow-up within a reasonable time frame to assure that

the minimum requirements are implemented. When conducting an inspection, the Permittee's inspector shall observe the site for compliance with the minimum water quality protection requirements. Permittee inspections shall include observations of storm water management practices.

The primary mechanism Permittee inspectors will use to determine if minimum water quality protection requirements and BMPs for development construction are being met will be to assess the site against the narrative requirements in Table 2-1. These narrative requirements are intended to be easy to interpret field observations that allow an assessment of site conditions during both dry and wet conditions. Inspection training will focus on how to recognize whether minimum water quality protection requirements are being achieved at any time during the year.

Each Permittee must be able to demonstrate the existence of a site inspection and enforcement program to achieve compliance with minimum BMP requirements. Appendix H provides a model checklist that is particularly suited for more detailed inspections if it is determined that minimum water quality protection requirements are not being achieved and corrective actions need to be documented.

Additional inspections should be conducted at the discretion of the Permittee to verify compliance with storm water pollution prevention measures, particularly when grading activities are being conducted during the rainy season. The need for such inspections may vary depending upon several factors including:

- Site conditions;
- Previous violations;
- History of developer or contractor performance; and
- Weather patterns.

3.2.2 Developer/Contractor Self-Inspection Requirements

Construction is a dynamic operation where changes are expected. BMPs for construction sites are usually temporary measures that require frequent maintenance to maintain their effectiveness and may require relocation and re-installation, particularly as project grading progresses. Therefore, developer/construction self-inspections are required, particularly during the rainy season.

There are two primary purposes of the self-inspections conducted by developers and contractors:

- To ensure that BMPs are properly implemented and functioning effectively, and
- To identify maintenance (e.g., sediment removal) and repair needs.

An example form is provided in Appendix C that may be provided to developers and contractors by the Permittee for use in recording self-inspection results. When requested, self-inspection forms are to be made available to Permittee inspectors for their review.

Developers and/or contractors of projects subject to the General Construction Permit are required to perform self-inspections. In addition, self-inspections are required for Construction Priority Projects. At a minimum, a developer self-inspection checklist, noting date, time, conditions and inspection date, must be kept on-site and made available for inspection, if requested. Self-inspections must be performed according to the following schedule:

- Before every rainfall event that is predicted to produce observable runoff and after every rainfall event that produces observable runoff, and
- At 24-hour intervals during extended rainfall events (except weekends or holidays when there is no ongoing site activity on those days).

More frequent inspections to ensure that developers are maintaining BMPs in good condition would be of benefit and Permittees may elect to require additional inspections by developers. For example, weekly self-inspections could be conducted during the wet season.

3.3 INSPECTION CRITERIA

3.3.1 Criteria for All Development Construction Projects

When conducting permittee inspections, the most important element of the inspection is to ensure that appropriate controls are in place that reduce pollutants from entering the storm drainage system. One element of which is to determine that the minimum requirements for Development Construction Projects are being achieved. If the inspector cannot affirmatively find that the minimum requirements are being achieved, the inspector shall require the developer to conform with those requirements.

The inspector may utilize the following framework when conducting an inspection:

1) Determine what BMPs are necessary to meet the minimum requirements;
2) Determine if BMPs are being used;
3) Determine whether BMPs are being implemented properly; and

4) Review developer's self-inspection checklist to determine whether minimum self-inspections have been performed.

An example checklist for documenting deficiencies and identifying corrective actions when conducting Permittee inspections is provided in Appendix H. If BMPs are either lacking or being implemented improperly, Section 3.4 provides a discussion of appropriate enforcement actions.

3.3.2 Criteria for Construction Priority Projects

Permittees must conduct at least one inspection of all active Construction Priority Projects during the rainy season. If the inspected site is not meeting minimum water quality protection requirements, Permittee inspectors must immediately direct compliance with these requirements and conduct a follow-up inspection to confirm that compliance is attained.

When conducting the initial Permittee inspection of Construction Priority Projects, the inspector will use the inspection checklist (or an equivalent) to evaluate conformance with minimum requirements and required BMPs and to document deficiencies and corrective actions. If BMPs are either lacking or improperly implemented, refer to Section 3.4 for a discussion of appropriate enforcement actions. Appendix H provides an example checklist for site inspections.

3.3.3 Criteria for Development Construction Projects Subject to General Construction Permit

The Regional Board is responsible for verifying and enforcing requirements of the General Construction Permit. When Permittee inspections are conducted at sites covered by the General Construction Permit, the inspector will document observations of potential violations using a checklist similar to the example provided in Appendix H. If violations are observed during the inspection, the Permittee must notify the Regional Board of the possible violation and the location of the construction site via facsimile or telephone within the next 2 business days.

3.4 PROCEDURES FOR CORRECTIVE AND ENFORCEMENT ACTIONS

Enforcement of storm water pollution prevention requirements for Development Construction Projects will be conducted by the Permittee's inspectors and/or other Permittee staff with enforcement authority. Violations observed will be documented by the inspectors in accordance with the Permittee's existing procedures for recording violations. Depending on the severity of the violation, enforcement can range from a verbal warning, to a written notice, stop work order, having the work performed by the Permittee's own staff or by a contractor secured by the

Permittee, or prosecution. Violations of the minimum requirements listed in Section 2.1 are to be treated with the same seriousness as violations of code provisions of similar importance.

Permittee inspectors will conduct a follow-up inspection to determine if corrective actions have been taken in accordance with minimum requirements. Escalating enforcement steps, leading up to the issuance of stop work orders and providing flexibility for the inspector to establish appropriate compliance time frames on a case-by-case basis, are to be used as needed to ensure compliance. Existing inspection/enforcement procedures should be used to achieve this result. *If a significant and/or immediate threat to water quality is observed by a Permittee's inspector, action should be taken to require the developer/contractor to immediately cease the discharge.* The threat to water quality shall be assessed by the inspector considering if runoff from a construction site will not be reasonably controlled by the protective measures in place or if a failure of BMPs is resulting in the release of sediments or other pollutants to a degree that may be substantially degrading water quality. The typical progressive enforcement steps that each Permittee should apply to the inspection enforcement program are:

1) Verbal warnings;
2) Written warnings; and
3) Stop work orders.

A discussion of these measures is provided below. While the provisions are not binding, the elements of these provisions should be incorporated in the Permittee's enforcement approach to the maximum extent practicable. Each Permittee's program should be consistent with existing enforcement mechanisms while generally conforming to the elements described in Sections 3.4.1 through 3.4.4.

3.4.1 Verbal Warnings

A common initial method of requesting corrective action and enforcing compliance is a verbal warning from the Permittee's inspector to the private contractor. Verbal warnings are often sufficient to achieve correction of the violation, often while the inspector is present at the construction site. The inspector will notify the developer/contractor's project supervisor of the violation, and document the violation and the notification to the project supervisor in the inspection file. A specific time frame for correcting the problem and a follow-up inspection date should be documented by the inspector. In judging the degree of severity, the Permittee inspector may also take into account any history of similar or repeated violations by the same developer or contractor at this or other sites.

3.4.2 Written Warnings

If the deficiency noted in the verbal warning is not corrected by the next inspection, a written notice of violation shall be issued describing the infraction that is to be corrected and the time frame for correction and for a follow-up inspection. A copy of the notice is to be given to the contractor's project supervisor and placed in the active inspection file. If the violation has been corrected to the satisfaction of the inspector, the inspector will document compliance in the inspection file. An example of a notice of violation form and a notice of correction form are provided in Appendix I. [Note that use of the specific forms provided as examples in Appendix I is not required.]

3.4.3 Stop Work Orders

If a notice of violation has not been addressed by the next inspection, or if the developer has not complied with their permit requirements, *or if a significant threat to water quality is observed* (such as a failure of BMPs resulting in a significant release of sediment or other pollutants off site), a stop work order may be issued by the appropriate municipal official. Stop work orders prohibit further construction activity until the problem is resolved and provide a time frame for correcting the problem. The stop work order will describe the infraction and specify what corrective action must be taken. A copy of the stop work order will be given to the private contractor's project supervisor and placed in the active inspection file. To restart work once a stop work order has been issued, the private contractor's project supervisor must request the inspector to re-inspect the project and verify that the deficiencies have been satisfactorily corrected. If the inspector is satisfied with the corrections, the inspector may sign off on that phase of the project, and work may proceed. A copy of a sample stop work order form is provided in Appendix I. In severe cases, the building or grading permit may be revoked.

3.4.4 Fines

A fine may also be issued if the Permittee has the authority to do so.

3.5 SITE INSPECTION AND ENFORCEMENT EMPLOYEE TRAINING

Each Permittee will implement a training program for staff involved with development construction activities. The minimum requirements are:

- Training must promote a clear understanding of the potential for construction activities to pollute storm water; and
- Training must cover the identification of violations of minimum water quality protection requirements for developer construction and implementation of corrective BMPs.

All existing construction inspection staff and other staff directly involved in development construction activities should receive formal training at least once after implementation of the Permittee's development construction program, and new staff should receive formal training after assignment to Permittee's development construction staff. Refresher training will be conducted periodically as necessary.

Training should cover the following areas:

- Minimum BMP requirements for Development Construction Projects;
- Description and contents of Local SWPPPs and WWECPs;
- Appropriate BMP applications and implementation;
- Inspection and enforcement procedures; and
- Use of inspection checklists.

Additional guidance for training employees involved in development construction activities is contained in Appendix J.

Relevant materials should be distributed to staff as appropriate. These may include checklists, guidance documents, materials included as appendices to this document, or other documentation that may be used later as reference information. The training program for construction inspection staff developed by Los Angeles County has been distributed to all Permittees and may be utilized to conduct formal training.

Informal training will be conducted periodically in conjunction with routine staff meetings, site inspections, or other opportunities as appropriate. Informal training is encouraged to include discussion of "lessons learned" in the field, introduction of new information, and periodic review of normal storm water inspection procedures.

The appendices of this Model Program (excluding Appendix A) are advisory only unless specifically identified in this Model Program as a requirement.

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Appendix A
Excerpts From Permit

b. Maximization of pervious areas and storm water infiltration (where geology and topography permit); and

c. Cost effective storm water pollution control measures.

The program shall provide specific guidance on selecting BMPs to reduce pollutants in storm water discharges from urbanized areas, and include appropriate BMPs, educational materials, and handbooks and guidelines described in Part 2. III.A.3.

Each Permittee shall implement a developer information program consistent with the model program not later than six months after commencement of its next fiscal year following approval of the model by the Executive Officer, provided, however, that such approval is issued not later than 90 days prior to the commencement of the Permittee's fiscal year. If such approval is given within 90 days of the commencement of a Permittee's fiscal year, such program shall be implemented in the second fiscal year following approval but in no event shall implementation be later than July 30, 1999. Each Permittee's program shall include information about its legal authorities. Permittees are encouraged to engage in joint efforts in implementing the program.

B. Development Construction

Table 4 on the following page shows the summary of requirements and corresponding compliance dates under this section.

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Table 4
Development Construction Requirements and Compliance Dates

Requirement	Permit Section	Principal Permittee	Permittees	Months from Effective Date of Order (Compliance Date)	For Approval By
Develop minimum requirements, recommended BMPs, and design checklists for construction	III.B.1	✓		14 (September 30, 1998)	Regional Board
Develop and implement a program for construction control measures	III.B.2.a		✓	≤ 36 months (July 30, 1999)	N/A
Require applicants to demonstrate coverage under State Construction General Permit prior to issuance of grading permits	III.B.2.b		✓	6 (January 31, 1997)	N/A
Develop a model construction inspection program	III.B.3.a	✓		14 (September 30, 1997)	Executive Officer
Implement a construction inspection program	III.B.3.b		✓	≤ 36 months (July 30, 1999)	N/A

1. Countywide Development Construction Guidance

The Principal Permittee, in consultation with the Permittees and appropriate stakeholder organizations, shall develop not later than September 30, 1998, the following development construction guidance materials for all development project construction activities: minimum recommended requirements, BMPs appropriate for various activities, and checklists for use in design and inspection. The Countywide minimum requirements and recommended BMPs shall:

a. Include erosion and sediment control practices;

b. Address multiple construction activity-related pollutants;

c. Focus on BMPs such as source minimization, education, good housekeeping, good waste management, and good site planning;

d. Target construction areas and activities with the potential to generate significant pollutant loads;

e. Require retention on the site, to the maximum extent practicable, of sediment, construction waste, and other pollutants from construction activity;

f. Require, to the maximum extent practicable, management of excavated soil on site to minimize the amount of sediment that escapes to streets, drainage facilities, or adjoining properties;

g. Require, to the maximum extent practicable, use of structural drainage controls to minimize the escape of sediment and other pollutants from the site.

h. Require, to the maximum extent practicable, containment of runoff from equipment and vehicle washing at construction sites, unless treated to remove sediments and pollutants.

The lists of BMPs shall be submitted to the Regional Board for approval.

2. Construction Control Measures

a. Each Permittee shall develop a regulatory program for construction activities as defined in Part 2.III.A.1.a. consistent with the Countywide Development Construction Guidance not later than six months after commencement of its next fiscal year following approval of the minimum recommended requirements and BMPs in Part 2.III.B.1. by the Regional Board , provided, however, that such approval is issued not later than 90 days prior to the commencement of the Permittee's fiscal year. If such approval is given within 90 days of the commencement of a Permittee's fiscal year, such program shall be implemented in the second fiscal year following approval but in no event shall implementation be later than July 30, 1999.

The Program shall require, prior to the issuance of any building or grading permit, preparation of appropriate wet weather erosion control and storm water pollution prevention plans which include, by detail or reference, all appropriate construction BMPs developed under Part 2.III.B.1.

Priority Project plans must include a narrative discussion of the reasons used for selecting or rejecting BMPs. In lieu of a narrative, the project architect or engineer of record may sign a statement on the plan to the effect: "As the architect/engineer of record, I have selected appropriate BMPs to effectively minimize the negative impacts of this project's construction activities on storm water quality. The project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activities."

b. Each Permittee shall implement a procedure not later than January 31, 1997, whereby the Permittee shall not issue a grading permit for developments with disturbed areas of five acres or greater unless the applicant can show that (i) a Notice of Intent (NOI) to comply with the State Construction Activity Storm Water Permit has been filed and (ii) a Storm Water Pollution Prevention Plan (SWPPP) has been prepared.

3. Site Inspection

a. The Principal Permittee, in consultation with the Permittees, shall develop a model construction activity inspection program, which includes checklists, not later than September 30, 1997. The model program shall include but not be limited to:

i. Procedures for construction site inspections;

ii. Procedures to require corrective action be undertaken by contractors at noncomplying sites;

iii. Procedures for enforcement action against noncomplying construction activity; and

iv. Appropriate training for program staff.

b. Each Permittee shall implement a construction activities inspection program based on the model program not later than six months after commencement of its next fiscal year following approval of the model program by the Executive Officer, provided, however, that such approval is issued not later than 90 days prior to the commencement of the Permittee's fiscal year. If such approval is given within 90 days of the commencement of a Permittee's fiscal year, such

program shall be implemented in the second fiscal year following approval but in no event shall implementation be later than July 30, 1999. The program may be integrated with the Permittees regular program of construction inspection for maximum efficiency

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Appendix B

Owner's Certification Statement for Minimum Requirements

Appendix B
Owner's Certification Statement for Minimum Requirements

National Pollutant Discharge Elimination System (NPDES) is the portion of the Clean Water Act that applies to protection of receiving waters. Under permits from the Los Angeles Regional Water Quality Control Board (RWQCB), certain activities are subject to RWQCB enforcement. To meet the requirements of the Los Angeles County Municipal Storm water Permit (CAS614001), the City (County) of _____ has adopted minimum requirements for storm water runoff management from development construction activities. These include requirements for sediment control, erosion control and construction activities control to be implemented on each project site.

Site Address or Tract No:_____Building/Grading Permit No:_____

Owner:_____Contractor:_____

I have read and understand the requirements indicated above.

_____ _____

Owner or Authorized Representative Date

In compliance with the above requirements, I certify that I understand and will comply with the minimum requirements noted above.

_____ _____

Owner or Authorized Representative Date

Appendix C

Developer/Contractor Self-Inspection Form

CONSTRUCTION SITE INSPECTION CHECKLIST

Inspected By: _____

Project: _____

Contractor: _____

Date: _____

Check "Yes" or "No" or "N/A" if not applicable.

YES	NO	N/A		
_____	_____	_____	1.	Has there been rain at the site since the last inspection?
_____	_____	_____	2.	Are all sediment barriers (e.g., sandbags, straw bales, and silt fences) in place in accordance with the Plan and are they functioning properly?
_____	_____	_____	3.	If present, are all exposed slopes protected from erosion through the implementation of acceptable soil stabilization practices?
_____	_____	_____	4.	If present, are all sediment traps/basins installed and functioning properly?
_____	_____	_____	5.	Are all material handling and storage areas reasonably clean and free of spills, leaks, or other deleterious materials?
_____	_____	_____	6.	Are all equipment storage and maintenance areas reasonably clean and free of spills, leaks, or any other deleterious materials?
_____	_____	_____	7.	Are all materials and equipment properly covered?
_____	_____	_____	8.	Are all external discharge points (i.e., outfalls) reasonably free of any noticeable pollutant discharges?
_____	_____	_____	9.	Are all internal discharge points (i.e., storm drain inlets) provided with inlet protection?

Check "Yes" or "No" or "N/A" if not applicable.

YES	NO	N/A		
_____	_____	_____	10	Are all external discharge points reasonably free of any significant erosion or sediment transport?
_____	_____	_____	11.	Are all BMPs identified on the Plan installed in the proper locations and according to the specifications for the Plan?
_____	_____	_____	12.	Are all structural control practices in good repair and maintained in functional order?
_____	_____	_____	13.	Are all on-site traffic routes, parking, and storage of equipment and supplies restricted to areas designated in the Plan for those uses?
_____	_____	_____	14.	Are all locations of temporary soil stockpiles or construction materials in approved areas and properly contained?
_____	_____	_____	15.	Are all seeded or landscaped areas properly maintained?
_____	_____	_____	16.	Are sediment controls in place at discharge points from the site?
_____	_____	_____	17.	Are slopes free of significant erosion?
_____	_____	_____	18	Are all points of ingress and egress from the site provided with stabilized construction entrances?
_____	_____	_____	19.	Is sediment, debris, or mud being cleaned from public roads at intersections with site access roads?
_____	_____	_____	20.	Does the Plan reflect current site conditions?

If you answered "no" to any of the above questions (except Number 1), describe any corrective action(s) that must be taken to remedy the problem and when the corrective action is to be completed:

Checklist Item	Corrective Action(s) Needed	Date to be Completed

INSPECTION LOG

The site shall be inspected before and after storm events with 0.25 inches or greater predicted or actual precipitation, and documented on the Construction Site Inspection Checklist Form. Incidents of noncompliance must be reported to the Engineer. A log of all inspections, as shown below, shall be kept current.

Date	Inspector	Type of Inspection			Observations (If post-storm inspection, note size of storm in inches)
		Routine	Pre-Storm	Post-Storm	

Appendix D

Guidance for Local SWPPP/WWECP

Section 2.2.1 of this Model Program provides criteria for identifying Construction Priority Projects if the project is in or adjacent to an environmentally sensitive area, in a designated hillside area, or if the project disturbs more than 2 acres of soil, and describes the additional documentation requirements for these projects. Construction Priority Projects require the project owner to prepare a:

- Local Storm Water Pollution Prevention Plan (SWPPP); and a
- Wet Weather Erosion Control Plan (WWECP) if the soil for a priority project will be disturbed during the rainy season.

The Local SWPPP must be prepared before the project owner, developer, or contractor receives a grading or building permit and must be implemented year-round throughout construction. A WWECP must be prepared prior to each rainy season, and must be implemented throughout that rainy season. This appendix provides guidance for preparing these plans, including sample forms that permittees may provide to the project owner, developer, and/or contractor.

If a Local SWPPP or WWECP is required, it may be prepared by the owner, the construction contractor or a consultant. Permittees may elect to determine who must prepare the Local SWPPP/WWECP for specific project types. When developing a Local SWPPP or WWECP, the preparer should assess site conditions, identify construction activities with the potential to cause storm water pollution, and then identify the BMPs that will best suit the construction activities. A well developed plan will provide sufficient detail to properly implement and maintain the BMPs, yet be sufficiently flexible to allow for minor field modifications without making formal plan amendments.

The Local SWPPP/WWECP must include a site map of the project (a copy of the grading or drainage plan may be used) showing:

- The project boundary and/or limits of grading. (Permittees may elect to require site limit maps to extend 50 feet beyond property line and/or grading limits.)
- The footprint of existing facilities and facilities that will be built during construction.
- Specific locations where construction materials, vehicles, and equipment will be stored, handled, used, maintained, and disposed, along with locations of structural measures that will be used to contain these materials on site.
- The existing and final grades of the site, along with any intermediate grades during construction that will significantly affect site drainage patterns.

- The location(s) where runoff from the site may enter storm drain(s), channel(s), and/or receiving water(s).
- Specific locations where erosion and sediment control measures will be installed for each permanent or temporary site drainage pattern that will occur before, during and after construction.

The plan must provide:

- Information about the project location, owner, and contractor;
- A brief narrative description on the nature of the construction activity and special site conditions; and,
- A list of BMPs for managing targeted construction activities.

The plan must also include a BMP checklist with a discussion of the reasons for selecting or rejecting BMPs such as shown in the attached example, and must contain a signed certification statement.

Suggested formats for a Local SWPPP and WWECP follow.

Section 1 - Project Description and Information

1. The name of the project:

2. The address or location of the project:

3. The building permit number for the project:

4. The grading permit number for the project (if applicable):

5. The owner/developer's name, address, phone number and contact person:

6. Contractor's name, address, phone number and contact person:

7. What are the major features that the project will provide? (e.g., low density residential, commercial development, etc.)

Section 1 - Project Description and Information (cont'd)

8. What are the estimated construction start and finish dates?

   Project Start Date:_____

   Project Finish Date:_____

9. What are the estimated dates during which soil will be disturbed?

   Start Grading:_____

   Finish Grading:_____

10 Are there any unique features relating to adjacent water bodies (i.e., in or around a wetland, river, stream, or estuary)?

   _____

   _____

Section 2 - Best Management Practices

Use the following tables to indicate the BMPs that will be used to control storm water pollution. Attach additional written documentation if necessary.

2.1 General Site Management

BMP Description	Will BMP Be Used? Yes	No	If Yes, Explain How / If No, State Reason
Site Planning Considerations			
Scheduling (ESC01)			
Preservation of Existing Vegetation (ESC02)			
Construction Practices			
Dewatering Operations (CA01)			
Paving Operations (CA02)			
Structure Construction & Painting (CA03)			
Dust Control (ESC21)			
Vehicle & Equipment Management			
Vehicle & Equipment Cleaning (CA30)			
Vehicle & Equipment Fueling (CA31)			
Vehicle & Equipment Maintenance (CA32)			
Tracking Control			
Stabilized Construction Entrance (ESC24)			
Contractor Training			
Employee/Subcontractor Training (CA40)			

2.2 Construction Materials and Waste Management

BMP Description	Will BMP Be Used? Yes	No	If Yes, Explain How / If No, State Reason
Material Management			
Material Delivery and Storage (CA10)			
Material Use (CA11)			
Spill Prevention and Control (CA12)			
Waste Management			
Solid Waste Management (CA20)			
Hazardous Waste Management (CA21)			
Contaminated Soil Management (CA22)			
Concrete Waste Management (CA23)			
Sanitary/Septic Waste Management (CA24)			

Section 3 - Site Map Checklist

____ The project boundary and/or limits of grading. *(Option: 50 feet beyond property line or grading limits)*

____ The footprint of existing facilities and facilities that will be built during construction.

____ The existing and final grades of the site, along with any intermediate grades during construction that will significantly affect site drainage patterns.

____ The location(s) where runoff from the site may enter storm drain(s), channel(s), and/or receiving water(s).

____ Specific locations where construction materials, vehicles, and equipment will be stored, handled, used, maintained, and disposed, along with locations of structural measures that will be used to contain these materials on site.

Section 4 - Certification

As the project owner, I certify that appropriate BMPs will be implemented to effectively minimize the negative impacts of this project's construction activities on storm water quality. The project contractor is aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activities.

Signed: _____

Title: _____

Date: _____

Section 1 - Project Description and Information

1. The name of the project:

2. The address or location of the project:

3. The building permit number for the project:

4. The grading permit number for the project (if applicable):

5. The owner/developer's name, address, phone number and contact person:

6. Contractor's name, address, phone number and contact person:

7. What are the major features that the project will provide? (e.g., low density residential, commercial development, etc.)

Section 1 - Project Description and Information (cont'd)

8. What are the estimated construction start and finish dates?

   Project Start Date:_____

   Project Finish Date:_____

9. What are the estimated dates during which more than 1 acre or 50,000 ft^3 of soil will be disturbed?

   Start Grading: _____

   Finish Grading:_____

10 Are there any unique features relating to adjacent water bodies (i.e., in or around a wetland, river, stream, or estuary)?

   _____

   _____

Section 2 - Best Management Practices

Use the following checklists to indicate the BMPs that will be used to control wet weather erosion and off site sedimentation. Attach additional written documentation if necessary.

2.1 Erosion Control Practices

BMP Description	Will BMP Be Used? Yes	No	If Yes, Explain How / If No, State Reason
Site Planning Considerations			
Scheduling (ESC01)			
Preservation of Existing Vegetation (ESC02)			
Vegetative Stabilization			
Seeding & Planting (ESC10)			
Mulching (ESC11)			
Physical Stabilization			
Geotextiles & Mats(ESC20)			
Dust Control (ESC21)			
Temporary Stream Crossing (ESC22)			
Construction Road Stabilization (ESC23)			
Diversion of Runoff			
Earth Dike (ESC30)			
Temporary Drains & Swales (ESC31)			
Slope Drain (ESC32)			
Velocity Reduction			
Outlet Protection (ESC40)			
Check Dams (ESC41)			
Slope Roughening/Terracing (ESC42)			

2.2 *Sediment Control Practices*

BMP Description	Will BMP Be Used? Yes	No	If Yes, Explain How / If No, State Reason
Sediment Control			
Silt Fence (ESC50)			
Straw Bale Barrier (ESC51)			
Sand Bag Barrier (ESC52)			
Brush or Rock Filter (ESC53)			
Storm Drain Inlet Protection (ESC54)			
Sediment Trap (ESC55)			
Sediment Basin (ESC56)			

Section 3 - Site Map Checklist

____ The project boundary and/or limits of grading. *(Option: 50 feet beyond property line or grading limits)*

____ The footprint of existing facilities and facilities that will be built during construction.

____ The existing and final grades of the site, along with any intermediate grades during construction that will significantly affect site drainage patterns.

____ The location(s) where runoff from the site may enter storm drain(s), channel(s), and/or receiving water(s).

____ Specific locations where erosion and sediment control measures will be installed for each permanent or temporary site drainage pattern that will occur before, during and after construction.

Section 4 - Certification

As the project owner, I certify that appropriate BMPs will be implemented to effectively minimize the negative impacts of this project's construction activities on storm water quality. The project contractor is aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activities for the reasons cited above.

Signed: _____

Title: _____

Date: _____

Appendix E

Owner's NOI/SWPPP Certification Form

Appendix E
Owner's NOI/SWPPP Certification Form

National Pollutant Discharge Elimination System (NPDES) is the portion of the Clean Water Act that applies to protection of receiving waters. Construction activity that will disturb a ground surface area of 5 acres or more (about 220.000 square feet or 2.02 hectares), or if the project results in the disturbance of less than 5 acres of soil but is part of a larger common plan of development or site that exceeds 5 acres, is subject to requirements of the California General Permit for Storm water Discharges Associated with Construction Activity (Permit No. CAS000002) under the NPDES Program. A Notice of Intent (NOI) is required to be filed with the SWRCB and a Storm Water Pollution Prevention Plan (SWPPP) is required to be prepared, implemented and available at the job site for review and verification at all times for such projects.

Site Address or Tract No:_____ Permit No:_____

Owner:_____ Contractor:_____

I have read and understand the requirements indicated above.

_____ _____

Owner or Authorized Representative Date

In compliance with the above requirements, I certify that a Notice of Intent has been filed with the State Water Resources Control Board and that a Storm Water Pollution Prevention Plan has been prepared.

_____ _____

Owner or Authorized Representative Date

R0000481

ıction Projects

In planning a construction project, the developer/contractor must answer three key questions with respect to storm water quality control: (1) what kind of water quality controls are needed?; (2) where should the controls be implemented?; and (3) how much control is enough? In order to answer these questions, the developer/contractor should use a documentable, defensible process to identify potential water quality problems, develop design objectives, formulate and evaluate alternatives, select the most appropriate alternatives, and design the plan. A suggested BMP selection process particularly applicable to Construction Priority Projects and projects subject to the California General Permit for Storm Water Discharges Associated with Construction Activity is described herein.

F.1 DEVELOP GOALS AND OBJECTIVES

Site specific conditions of Development Construction Projects determine which BMPs are most applicable for a site. The BMPs selected for a site should fulfill the following goals and objectives:

- Be appropriate for the given site constraints
- Have a beneficial or neutral impact on the environment
- Provide moderate to high pollutant source control and/or removal capability
- Meet regulatory requirements
- Minimize changes in hydrological conditions
- Be cost effective.

F.2 BMP SELECTION CRITERIA

In order to fulfill the above goals and objectives, BMPs should be selected by using appropriate selection criteria that serve to identify the capabilities and limitations of each BMP. Criteria to be considered in screening and selecting BMPs for the construction stage are:

- Site factors (e.g., slope, high water table, soils, potential risks below or downstream of site, etc.)
- Project Characteristics (e.g. type, size, and duration of project)
- Pollutant avoidance (source control) or removal capability (effectiveness)
- Cost of implementation
- Environmental compatibility

These criteria may be given equal weight during the BMP selection process, or they may be weighted differentially, depending on the relative importance of each factor for the particular project.

Several general principals that should be considered in selecting erosion and sediment control BMPs include:

- Prevention of pollutant release is superior to pollutant capture later. Select source control BMPs as a first step.
- Selection of BMPs must depend on site characteristics and the construction plan.
- The proper first step is a site drainage analysis. Determine where runoff will enter, cross and exit the site.
- Divert runoff from exposed areas wherever possible.
- Existing vegetation is the most effective erosion control.
- Limit and phase clearing.
- Incorporate natural drainage features whenever possible, using adequate buffers and protecting areas where flow enters the drainage system.
- Minimize slope length and steepness.
- Keep runoff velocities low.
- Reduce the tracking of sediment off-site.
- Select and install controls that can be maintained.

F.3 NOMINATE AND EVALUATE ALTERNATIVES

A number of BMPs applicable to Development Construction Projects have been identified in Section 2.5 of this Model Program. The BMPs were nominated from the *California Storm Water Best Management Practices Handbooks*. Other BMPs from other manuals and sources were also considered.

F.4 SELECT BEST ALTERNATIVES

Based on the list of recommended BMPs for Development Construction Projects provided in this Model Program, the developer/contractor should use the selection criteria described above to select the best alternatives for the project conditions, characteristics, and concerns. This may be done numerically, by weighting the selection criteria, rating each BMP against each criteria, and summing up a weighted rating for each BMP, which then becomes a relative ranking. Or the

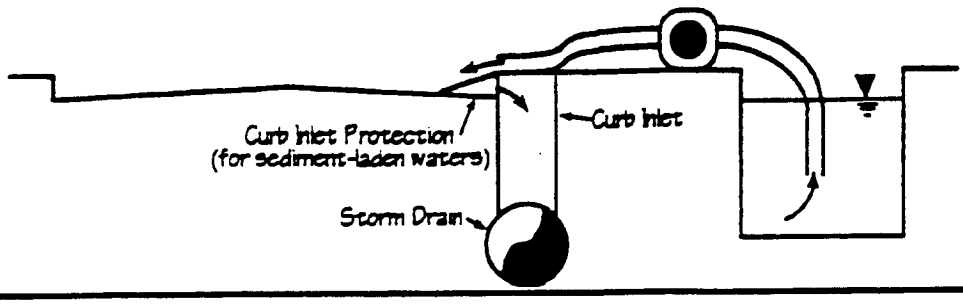
selection process may be done in a more subjective, non-numerical way using experience and professional judgment to select the best alternative BMPs. Either way, the developer/contractor should document the selection process and provide support for the selected system of controls.

F.5 DESIGN, IMPLEMENT, AND MAINTAIN THE BMPs

After the appropriate BMPs are selected for a given project, the developer/contractor should document those selected on the standard checklist and show the selected BMPs on the plans, as discussed in Section 3 of this document. It is important that the control measures be properly installed and maintained. Improper installation and poor maintenance are the most common reasons for storm water controls to not function as designed. Therefore, it is incumbent on the designer to provide sufficient information in the project plans and specifications for their proper installation, and to provide adequate guidance on their proper maintenance so that the installation and maintenance procedures may be incorporated into the state SWPPP, Local SWPPP, or WWECP.

Appendix G
BMP Fact Sheets

ACTIVITY: DEWATERING OPERATIONS



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from dewatering operations by using sediment controls and by testing the groundwater for pollution.

APPROACH

There are two general classes of pollutants that may result from dewatering operations; sediment, and toxics and petroleum products. A high sediment content in dewatering discharges is common because of the nature of the operation. On the other hand, toxics and petroleum products are not commonly found in dewatering discharges unless, the site or surrounding area has been used for light or heavy industrial activities, or the area has a history of groundwater contamination. The following steps will help reduce storm water pollution from dewatering discharges:

Sediment

- Use sediment controls to remove sediment from water generated by dewatering (See Sediment Trap (ESC 55) and Sediment Basin (ESC 56) in Chapter 5).
- Use filtration to remove sediment from a sediment trap or basin. Filtration can be achieved with:
  - Sump pit and a perforated or slit standpipe with holes and wrapped in filter fabric. The standpipe is surrounded by stones which filters the water as it collects in the pit before being pumped out. Wrapping the standpipe in filter fabric may require an increased suction inlet area to avoid clogging and unacceptable pump operation.
  - Floating suction hose to allow cleaner surface water to be pumped out.

Toxics and Petroleum Products

- In areas suspected of having groundwater pollution, sample the groundwater near the excavation site and have the water tested for known or suspected pollutants at a certified laboratory. Check with the Regional Water Quality Control Board and the local wastewater treatment plant for their requirements for dewatering, additional water quality tests, and disposal options.
- With a permit from the Regional Water Quality Control Board, you may be able to recycle/reuse pumped groundwater for landscape irrigation, or discharge to the storm sewer. With a permit from the local agency, you may be able to treat pumped groundwater and discharge it to the municipal wastewater treatment plant via the sanitary sewer.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA1

Best Management Practices

CONTRACTOR ACTIVITY: DEWATERING OPERATIONS (Continue)

REQUIREMENTS

- Costs (Capital, O&M)
  - Sediment controls are low cost measures.
  - Treatment and/or discharge of polluted groundwater can be quite expensive.
- Maintenance
  - Maintain sediment controls and filters in good working order. (See Chapter 5 for details)
  - Inspect excavated areas daily for signs of contaminated water as evidenced by discoloration, oily sheen, or odors.

LIMITATIONS

- The presence of contaminated water may indicate contaminated soil as well. See CA22 (Contaminated Soil Management) in this chapter for more information.

REFERENCES

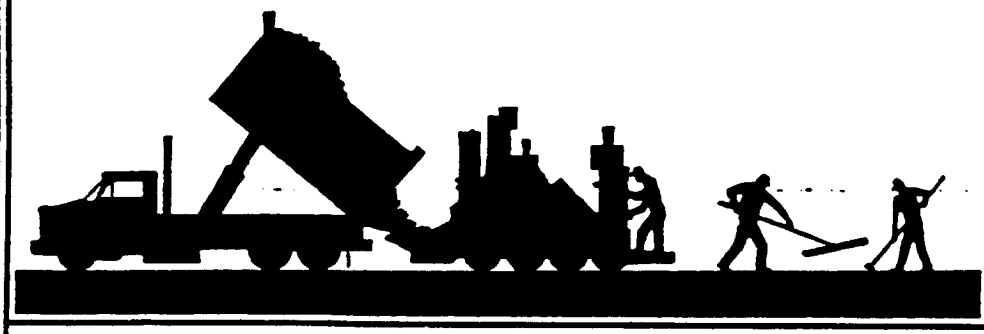
Blueprint for a Clean Bay-Construction-Related Industries: Best Management Practices for Storm Water Pollution Prevention; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

CA1

ACTIVITY: PAVING OPERATIONS

Graphic: North Central Texas COG, 1993



DESCRIPTION

Prevent or reduce the discharge of pollutants from paving operations, using measures to prevent runon and runoff pollution, properly disposing of wastes, and training employees and subcontractors.

APPROACH

- Avoid paving during wet weather.
- Store materials away from drainage courses to prevent storm water runon (see CA10 Material Delivery and Storage).
- Protect drainage courses, particularly in areas with a grade, by employing BMPs to divert runoff or trap/filter sediment (see Chapter 5).
- Leaks and spills from paving equipment can contain toxic levels of heavy metals and oil and grease. Place drip pans or absorbent materials under paving equipment when not in use. Clean up spills with absorbent materials rather than burying. See CA32 (Vehicle and Equipment Maintenance) and CA12 (Spill Prevention and Control) in this chapter.
- Cover catch basins and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- Shovel or vacuum saw-cut slurry and remove from site. Cover or barricade storm drains during saw cutting to contain slurry.
- If paving involves portland cement concrete, see CA23 (Concrete Waste Management) in this chapter.
- If paving involves asphaltic concrete, follow these steps:
  - Do not allow sand or gravel placed over new asphalt to wash into storm drains, streets, or creeks by sweeping. Properly dispose of this waste by referring to CA20 (Solid Waste Management) in this chapter.
  - Old asphalt must be disposed of properly. Collect and remove all broken asphalt from the site and recycle whenever possible.
  - If paving involves on-site mixing plant, follow the storm water permitting requirements for industrial activities.
- Train employees and subcontractors.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Inspect employees and subcontractors to ensure that measures are being followed.
  - Keep ample supplies of drip pans or absorbent materials on-site.

LIMITATIONS

- There are no major limitations to this best management practice.

Objectives

- **Housekeeping Practices**
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ◒ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA2

Best Management Practices

CONTRACTOR ACTIVITY: PAVING OPERATIONS (Continue)

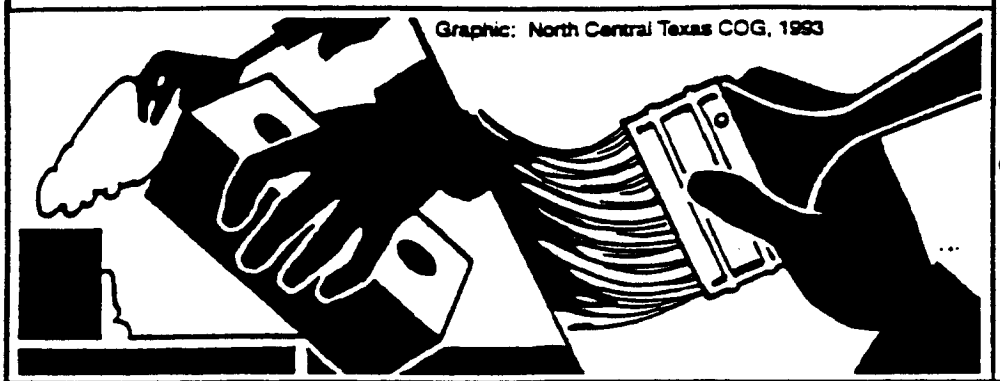
REFERENCES

Blueprint for a Clean Bay-Construction-Related Industries: Best Management Practices for Storm Water Pollution Prevention; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

Hot-mix Asphalt Paving Handbook, U.S. Army Corps of Engineers, AC 150/5370-14, Appendix I, July 1991.

CA2

ACTIVITY: STRUCTURE CONSTRUCTION AND PAINTING



Graphic: North Central Texas COG, 1993

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from structure construction and painting by enclosing or covering or berming building material storage areas, using good housekeeping practices, using safer alternative products, and training employees and subcontractors.

APPROACH

- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep the area.
- Use soil erosion control techniques if bare ground is exposed (See Chapter 5).
- Buy recycled or less hazardous products to the maximum extent practicable.
- Conduct painting operations consistent with local air quality and OSHA regulations.
- Properly store paints and solvents. See CA10 (Material Delivery and Storage) in this chapter.
- Properly store and dispose waste materials generated from the activity. See the waste management BMPs (CA20 to CA24) in this chapter.
- Recycle residual paints, solvents, lumber, and other materials to the maximum extent practicable.
- Make sure that nearby storm drains are well marked to minimize the chance of inadvertent disposal of residual paints and other liquids.
- Clean the storm drain system in the immediate construction area after construction is completed.
- Educate employees who are doing the work.
- Inform subcontractors of company policy on these matters and include appropriate provisions in their contract to make certain proper housekeeping and disposal practices are implemented.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - These BMPs are generally of low to moderate cost.
- Maintenance
  - Maintenance should be minimal.

LIMITATIONS

- Safer alternative products may not be available, suitable, or effective in every case.
- Hazardous waste that cannot be re-used or recycled must be disposed of by a licensed hazardous waste hauler.

Objectives

- **Housekeeping Practices**
- Contain Waste
- Minimize Disturbed Areas
- **Stabilize Disturbed Areas**
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ○ Oil & Grease
- ● Floatable Materials
- ● Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA3

Best Management Practices

ACTIVITY: STRUCTURE CONSTRUCTION AND PAINTING (Continue)

- Be certain that actions to help storm water quality are consistent with Cal- and Fed-OSHA and air quality regulations.

Construction and painting activities can generate pollutants that can reach storm water if proper care is not taken. The sources of these contaminants may be solvents, paints, paint and varnish removers, finishing residues, spent thinners, soap cleaners, kerosene, asphalt and concrete materials, adhesive residues, and old asbestos insulation. For specific information on some of these wastes see the following BMPs in this chapter:

CA20 Solid Waste,
CA21 Hazardous Waste, and
CA23 Concrete Waste.

More specific information on structure construction practices is listed below.

Erosion and Sediment Control

If the work involves exposing large areas of soil or if old buildings are being torn down and not replaced in the near future, employ the appropriate soil erosion and control techniques described in Chapter 5.

Storm/Sanitary Sewer Connections

Carefully install all plumbing and drainage systems. Cross connections between the sanitary and storm drain systems, as well as any other connections into the drainage system from inside a building, are illegal. Color code or flag pipelines on the project site to prevent such connections, and train construction personnel.

Painting

Local air pollution regulations may, in many areas of the state, specify painting procedures which if properly carried out are usually sufficient to protect storm water quality. These regulations may require that painting operations be properly enclosed or covered to avoid drift. Use temporary scaffolding to hang drop cloths or draperies to prevent drift. Application equipment that minimizes overspray also helps. When using sealants on wood, pavement, roofs, etc, quickly clean up spills. Remove excess liquid with absorbent material or rags.

If painting requires scraping or sand blasting of the existing surface, use a drop cloth to collect most of the chips. Dispose the residue properly. If the paint contains lead or tributyl tin, it is considered a hazardous waste. Refer to the waste management BMPs in this chapter for more information.

Mix paint indoors, in a containment area, or in a flat unpaved area not subject to significant erosion. Do so even during dry weather because cleanup of a spill will never be 100% effective. Dried paint will erode from sloped surfaces and be washed away by storms. If using water based paints, clean the application equipment in a sink that is connected to the sanitary sewer or in a containment area where the dried paint can be readily removed. Properly store leftover paints if they are to be kept for the next job, or dispose of properly.

Roof work

When working on roofs, if small particles have accumulated in the gutter, either sweep out the gutter or wash the gutter and trap the particles at the outlet of the downspout. A sock or geofabric placed over the outlet may effectively trap the materials. If the downspout is lined tight, place a temporary plug at the first convenient point in the storm drain and pump out the water with a vactor truck, and clean the catch basin sump where you placed the plug.

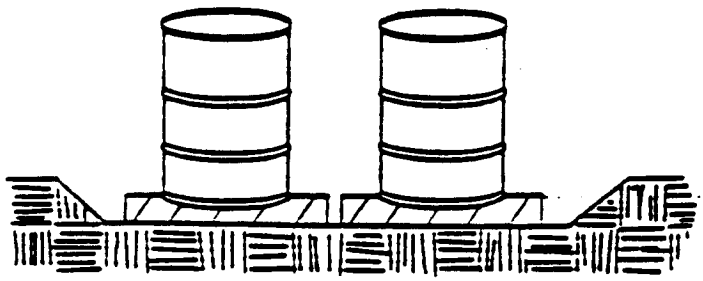
REFERENCES

Blueprint for a Clean Bay-Construction-Related Industries: Best Management Practices for Storm Water Pollution Prevention; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

CA3

R0000492

ACTIVITY: MATERIAL DELIVERY AND STORAGE



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from material delivery and storage by minimizing the storage of hazardous materials on-site, storing materials in a designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

This best management practice covers only material delivery and storage. For other information on materials, see CA11 (Material Use), or CA12 (Spill Prevention and Control). For information on wastes, see the waste management BMPs in this chapter.

APPROACH

The following materials are commonly stored on construction sites:

- Soil,
- Pesticides and herbicides,
- Fertilizers,
- Detergents,
- Plaster or other products,
- Petroleum products such as fuel, oil, and grease, and
- Other hazardous chemicals such as acids, lime, glues, paints, solvents, and curing compounds.

Storage of these materials on-site can pose the following risks:

- Storm water pollution,
- Injury to workers or visitors,
- Groundwater pollution, and
- Soil contamination.

Therefore, the following steps should be taken to minimize your risk:

- Designate areas of the construction site for material delivery and storage.
  - Place near the construction entrances, away from waterways
  - Avoid transport near drainage paths or waterways
  - Surround with earth berms (see ESC30, Earth Dike.)
  - Place in an area which will be paved
- Storage of reactive, ignitable, or flammable liquids must comply with the fire codes of your area. Contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code, NFPA30.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.
- Keep an accurate, up-to-date inventory of materials delivered and stored on-site.
- Keep your inventory down.

Targeted Pollutants

- ◒ Sediment
- ◒ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ◒ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA10

Best Management Practices

ACTIVITY: MATERIAL DELIVERY AND STORAGE (Continue)

- Minimize hazardous materials on-site storage.
- Handle hazardous materials as infrequently as possible.
- During the rainy season, consider storing materials in a covered area. Store materials in secondary containments such as an earthen dike, horse trough, or even a children's wading pool for non-reactive materials such as detergents, oil, grease, and paints. Small amounts of material may be secondarily contained in "bus boy" trays or concrete mixing trays.
- Do not store chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and, when possible, in secondary containment.
- If drums must be kept uncovered, store them at a slight angle to reduce ponding of rainwater on the lids and to reduce corrosion.
- Try to keep chemicals in their original containers, and keep them well labeled.
- Train employees and subcontractors.
- Employees trained in emergency spill cleanup procedures should be present when dangerous materials or liquid chemicals are unloaded.
- If significant residual materials remain on the ground after construction is complete, properly remove materials and any contaminated soil (See CA22). If the area is to be paved, pave as soon as materials are removed to stabilize the soil.

REQUIREMENTS

- Cost (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Keep the designated storage area clean and well organized.
  - Conduct routine weekly inspections and check for external corrosion of material containers.
  - Keep an ample supply of spill cleanup materials near the storage area.

LIMITATIONS

- Storage sheds often must meet building and fire code requirements.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites; Flood Control District of Maricopa County, AZ. September 1992.

Blueprint for a Clean Bay-Construction-Related Industries: Best Management Practices for Storm Water Pollution Prevention; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

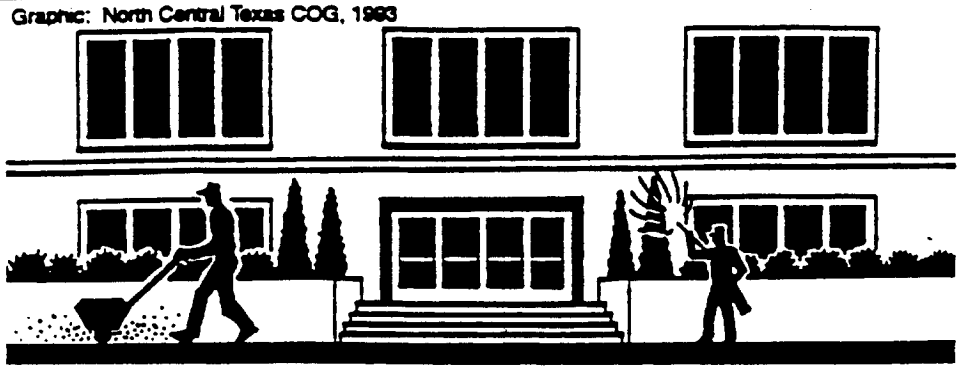
Storm Water Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

CA10

R0000494

ACTIVITY: MATERIAL USE

Graphic: North Central Texas COG, 1993



DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from material use by using alternative products, minimizing hazardous material use on-site, and training employees and subcontractors.

APPROACH

The following materials are commonly used on construction sites:

- Pesticides and herbicides,
- Fertilizers,
- Detergents,
- Plaster and other products,
- Petroleum products such as fuel, oil, and grease, and
- Other hazardous chemicals such as acids, lime, glues, paints, solvents, and curing compounds.

Use of these materials on-site can pose the following risks:

- Storm water pollution,
- Injury to workers or visitors,
- Groundwater pollution, and
- Soil contamination.

Therefore, the following steps should be taken to minimize your risk:

- Use less hazardous, alternative materials as much as possible.
- Minimize use of hazardous materials on-site.
- Use materials only where and when needed to complete the construction activity.
- Follow manufacturer's instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
- Personnel who use pesticides should be trained in their use. The California Department of Pesticide Regulation and county agricultural commissioners license pesticide dealers, certify pesticide applicators, and conduct on-site inspections.
- Do not over-apply fertilizers, herbicides, and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Unless on steep slopes, till fertilizers into the soil rather than hydroseeding. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried off-site by runoff. Do not apply these chemicals just before it rains.
- Train employees and subcontractors in proper material use.

Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ○ Sediment
- ◒ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ◒ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA11

Best Management Practices

ACTIVITY: MATERIAL USE (Continue)

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Maintenance of this best management practice is minimal.

LIMITATIONS

- Alternative materials may not be available, suitable, or effective in every case.

REFERENCES

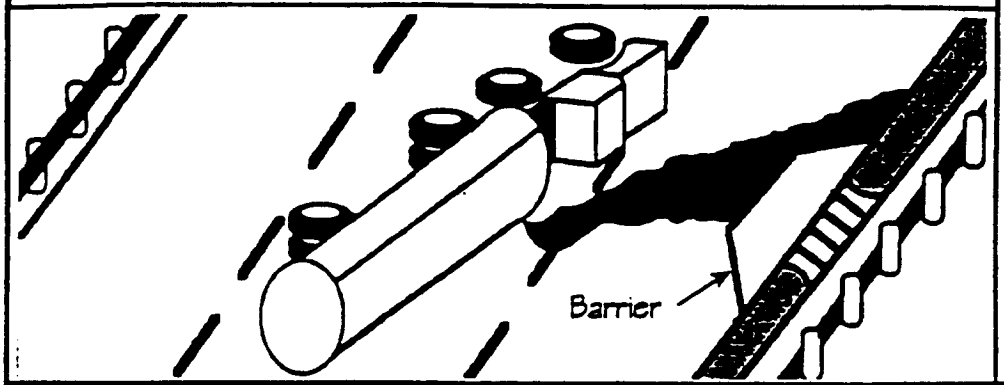
Blueprint for a Clean Bay-Construction-Related Industries: Best Management Practices for Storm Water Pollution Prevention; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Storm Water Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

CA11

ACTIVITY: SPILL PREVENTION AND CONTROL



Objectives

- ***Housekeeping Practices*** (●)
- *Contain Waste*
- *Minimize Disturbed Areas*
- *Stabilize Disturbed Areas*
- *Protect Slopes/Channels*
- *Control Site Perimeter*
- *Control Internal Erosion*

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

This best management practice covers only spill prevention and control. However, CA10 (Material Delivery and Storage) and CA11 (Material Use), also contain useful information, particularly on spill prevention. For information on wastes, see the waste management BMPs in this chapter.

APPROACH

The following steps will help reduce the storm water impacts of leaks and spills:

Define "Significant Spill"

- Different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.

General Measures

- Hazardous materials and wastes should be stored in covered containers and protected from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals.

Cleanup

- Clean up leaks and spills immediately.
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this chapter for specific information.

Reporting

- Report significant spills to local agencies, such as the Fire Department; they can assist in cleanup.
- Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour).

Targeted Pollutants

- ○ *Sediment*
- ○ *Nutrients*
- ◒ *Toxic Materials*
- ◒ *Oil & Grease*
- ○ *Floatable Materials*
- ○ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ○ *Capital Costs*
- ◒ *O&M Costs*
- ○ *Maintenance*
- ◒ *Training*
- ○ *Suitability for Slopes >5%*

● *High* ○ *Low*

CA12

Best Management Practices

ACTIVITY: SPILL PREVENTION AND CONTROL (Continue)

Use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- If maintenance must occur on-site, use a designated area and/or a secondary containment, located away from drainage courses, to prevent the runon of storm water and the runoff of spills.
- Regularly inspect on-site vehicles and equipment for leaks, and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment on-site.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Place drip pans or absorbent materials under paving equipment when not in use.
- Use adsorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- Oil filters disposed of in trash cans or dumpsters can leak oil and pollute storm water. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- If fueling must occur on-site, use designated areas, located away from drainage courses, to prevent the runon of storm water and the runoff of spills.
- Discourage "topping-off" of fuel tanks.
- Always use secondary containment, such as a drain pan, when fueling to catch spills/leaks.

REQUIREMENTS

- Costs (Capital, O&M)
  - Prevention of leaks and spills is inexpensive. Treatment and/or disposal of contaminated soil or water can be quite expensive.
- Maintenance
  - Keep ample supplies of spill control and cleanup materials on-site, near storage, unloading, and maintenance areas.
  - Update your spill prevention and control plan and stock cleanup materials as changes occur in the types of chemicals on-site.

LIMITATIONS

- If necessary, use a private spill cleanup company.

REFERENCES

Blueprint for a Clean Bay-Construction-Related Industries: Best Management Practices for Storm Water Pollution Prevention; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

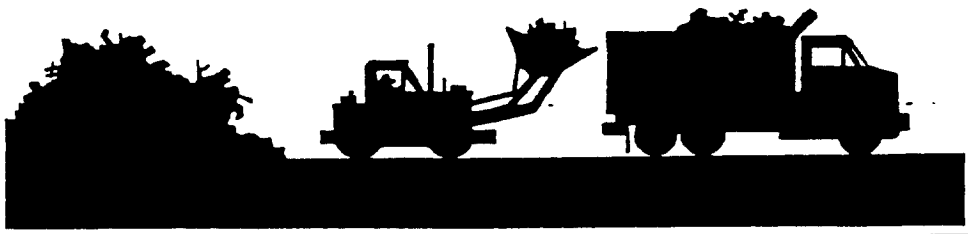
Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

CA12

R0000498

ACTIVITY: SOLID WASTE MANAGEMENT

Graphic: North Central Texas COG, 1993



DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

APPROACH

Solid waste is one of the major pollutants resulting from construction. Construction debris includes:

- Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction;
- Packaging materials including wood, paper and plastic;
- Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces, and masonry products; and
- Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, and plastic wrappers, and cigarettes.

The following steps will help keep a clean site and reduce storm water pollution:

- Select designated waste collection areas on-site.
- Inform trash hauling contractors that you will accept only water-tight dumpsters for on-site use. Inspect dumpsters for leaks and repair any dumpster that is not water tight.
- Locate containers in a covered area and/or in a secondary containment.
- Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it's windy.
- Plan for additional containers and more frequent pickup during the demolition phase of construction.
- Collect site trash daily, especially during rainy and windy conditions.
- Erosion and sediment control devices tend to collect litter. Remove this solid waste promptly.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Salvage or recycle any useful material. For example, trees and shrubs from land clearing can be used as a brush barrier (see ESC53), or converted into wood chips, then used as mulch on graded areas (see ESC11).
- Do not hose out dumpsters on the construction site. Leave dumpster cleaning to trash hauling contractor.
- Arrange for regular waste collection before containers overflow.

Objectives

- Housekeeping Practices
- **Contain Waste**
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ◒ Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ● Floatable Materials
- ● Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA20

Best Management Practices

ACTIVITY: SOLID WASTE MANAGEMENT (Continue)

- If a container does spill, clean up immediately.
- Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas.
- Train employees and subcontractors in proper solid waste management.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Collect site trash daily.
  - Inspect construction waste area regularly.
  - Arrange for regular waste collection.

LIMITATIONS

- There are no major limitations to this best management practice.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites; Flood Control District of Maricopa County, AZ, September 1992.

Processes, Procedures, and Methods to Control Pollution Resulting from all Construction Activity; USEPA, 430/9-73-007, 1973.

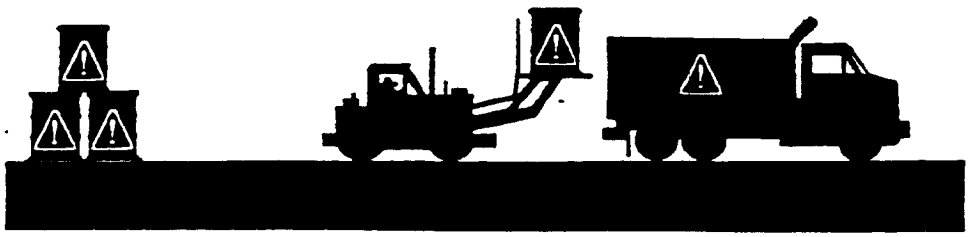
Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

CA20

R0000500

ACTIVITY: HAZARDOUS WASTE MANAGEMENT

Graphic: North Central Texas COG, 1993



DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.

APPROACH

Many of the chemicals used on-site can be hazardous materials which become hazardous waste upon disposal. These wastes may include:

- Paints and solvents;
- Petroleum products such as oils, fuels, and grease;
- Herbicides and pesticides;
- Acids for cleaning masonry; and
- Concrete curing compounds.

In addition, sites with existing structures may contain wastes which must be disposed of in accordance with Federal, State, and local regulations. These wastes include:

- Sandblasting grit mixed with lead-, cadmium-, or chromium-based paints;
- Asbestos; and
- PCBs (particularly in older transformers).

The following steps will help reduce storm water pollution from hazardous wastes:

Material Use

- Use all of the product before disposing of the container.
- Do not remove the original product label, it contains important safety and disposal information.
- Do not over-apply herbicides and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried off-site by runoff. Do not apply these chemicals just before it rains. People applying pesticides must be certified in accordance with Federal and State regulations.
- Do not clean out brushes or rinse paint containers into the dirt, street, gutter, storm drain, or stream. "Paint out" brushes as much as possible. Rinse water-based paints to the sanitary sewer. Filter and re-use thinners and solvents. Dispose of excess oil-based paints and sludge as hazardous waste.

Objectives

- Housekeeping Practices
- **Contain Waste**
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA21

Best Management Practices

ACTIVITY: HAZARDOUS WASTE MANAGEMENT (Continue)

Waste Recycling/Disposal

- Select designated hazardous waste collection areas on-site.
- Hazardous materials and wastes should be stored in covered containers and protected from vandalism.
- Place hazardous waste containers in secondary containment.
- Do not mix wastes, this can cause chemical reactions, make recycling impossible, and complicate disposal.
- Recycle any useful material such as used oil or water-based paint.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Arrange for regular waste collection before containers overflow.
- Make sure that hazardous waste (e.g. excess oil-based paint and sludges) is collected, removed, and disposed of only at authorized disposal areas.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

Training

- Train employees and subcontractors in proper hazardous waste management.
- Warning signs should be placed in areas recently treated with chemicals.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- If a container does spill, clean up immediately.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Inspect hazardous waste receptacles and area regularly.
  - Arrange for regular hazardous waste collection.

LIMITATIONS

- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.

REFERENCES

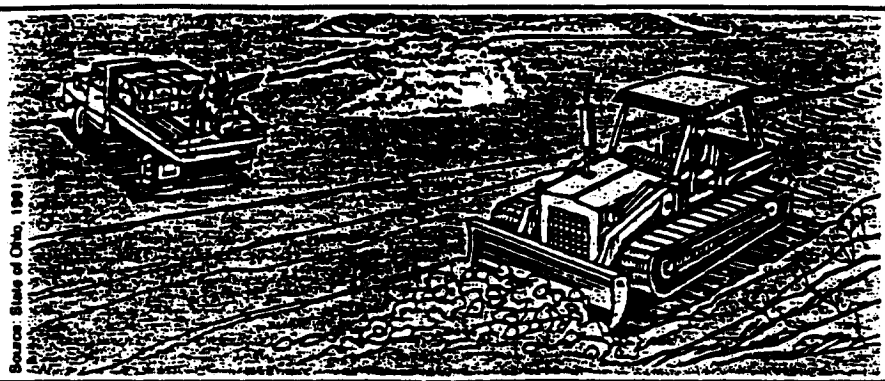
Blueprint for a Clean Bay-Construction-Related Industries: Best Management Practices for Storm Water Pollution Prevention; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

Processes, Procedures, and Methods to Control Pollution Resulting from all Construction Activity; USEPA, 430/9-73-007, 1973.

Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

CA21

ACTIVITY: CONTAMINATED SOIL MANAGEMENT



DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

APPROACH

Contaminated soils may occur on your site for several reasons including:

- Past site uses and activities;
- Detected or undetected spills and leaks; and
- Acid or alkaline solutions from exposed soil or rock formations high in acid or alkaline-forming elements.

Most developers conduct pre-construction environmental assessments as a matter of routine. Recent court rulings holding contractors liable for cleanup costs when they unknowingly move contaminated soil, highlight the need for contractors to confirm that a site assessment is completed before earth moving begins.

The following steps will help reduce storm water pollution from contaminated soil:

- Conduct thorough site planning including pre-construction geologic surveys.
- Look for contaminated soil as evidenced by discoloration, odors, differences in soil properties, abandoned underground tanks or pipes, or buried debris.
- Prevent leaks and spills to the maximum extent practicable. Contaminated soil can be expensive to treat and/or dispose of properly. However, addressing the problem before construction is much less expensive than after the structures are in place.
- Test suspected soils at a certified laboratory.
- If the soil is contaminated, work with the local regulatory agencies to develop options for treatment and/or disposal.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - Prevention of leaks and spills is inexpensive. Treatment and/or disposal of contaminated soil can be quite expensive.
- Maintenance
  - Inspect excavated areas daily for signs of contaminated soil.
  - Implement CA12, Spill Prevention and Control, to prevent leaks and spills as much as possible.

Objectives

- Housekeeping Practices
- **Contain Waste**
- **Minimize Disturbed Areas**
- **Stabilize Disturbed Areas**
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ◒ Sediment
- ○ Nutrients
- ● Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA22

Best Management Practices

ACTIVITY: CONTAMINATED SOIL MANAGEMENT (Continue)

LIMITATIONS

- Contaminated soils that cannot be treated on-site must be disposed of off-site by a licensed hazardous waste hauler.
- The presence of contaminated soil may indicate contaminated water as well. See CA1 (Dewatering Operations) in this chapter for more information.

REFERENCES

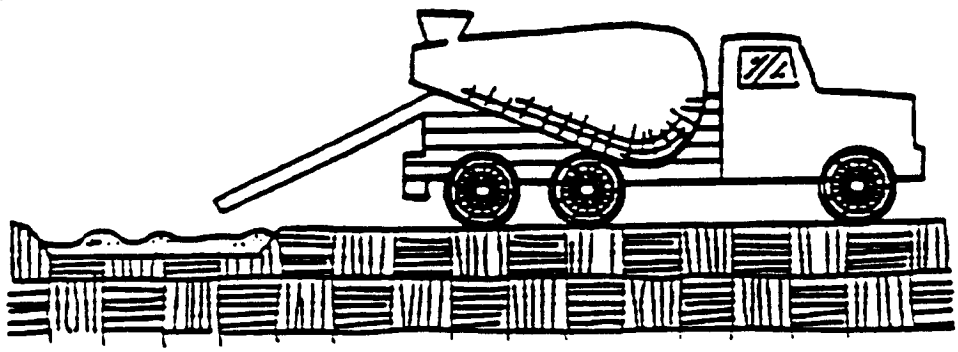
Blueprint for a Clean Bay-Construction-Related Industries: Best Management Practices for Storm Water Pollution Prevention; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

Processes, Procedures, and Methods to Control Pollution Resulting from all Construction Activity; USEPA, 430/9-73-007, 1973.

Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

CA22

ACTIVITY: CONCRETE WASTE MANAGEMENT



Objectives

- Housekeeping Practices
- **Contain Waste**
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from concrete waste by conducting washout off-site, performing on-site washout in a designated area, and training employees and subcontractors.

APPROACH

The following steps will help reduce storm water pollution from concrete wastes:

- Store dry and wet materials under cover, away from drainage areas.
- Avoid mixing excess amounts of fresh concrete or cement on-site.
- Perform washout of concrete trucks off site or in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped on-site, except in designated areas.
- For on-site washout:
  - locate washout area at least 50 feet from storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste;
  - wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed of properly.
- When washing concrete to remove fine particles and expose the aggregate, avoid creating runoff by draining the water to a bermed or level area.
- Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stock pile, or dispose in the trash.
- Train employees and subcontractors in proper concrete waste management.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Inspect subcontractors to ensure that concrete wastes are being properly managed.
  - If using a temporary pit, dispose hardened concrete on a regular basis.

LIMITATIONS

- Off-site washout of concrete wastes may not always be possible.

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ◒ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA23

Best Management Practices

ACTIVITY: CONCRETE WASTE MANAGEMENT (Continue)

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites; Flood Control District of Maricopa County, AZ, July 1992.

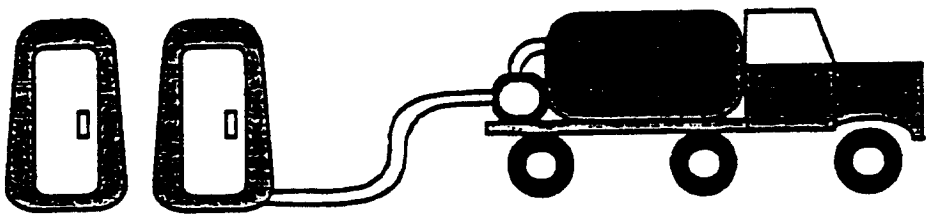
Blueprint for a Clean Bay-Construction-Related Industries: Best Management Practices for Storm Water Pollution Prevention; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

CA23

R0000506

ACTIVITY: SANITARY/SEPTIC WASTE MANAGEMENT



Objectives

- *Housekeeping Practices*
- *Contain Waste*
- *Minimize Disturbed Areas*
- *Stabilize Disturbed Areas*
- *Protect Slopes/Channels*
- *Control Site Perimeter*
- *Control Internal Erosion*

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from sanitary/septic waste by providing convenient, well-maintained facilities, and arranging for regular service and disposal.

APPROACH

Sanitary or septic wastes should be treated or disposed of in accordance with State and local requirements. These requirements may include:

- Locate sanitary facilities in a convenient location.
- Untreated raw wastewater should never be discharged or buried.
- Temporary septic systems should treat wastes to appropriate levels before discharging.
- If using an on-site disposal system (OSDS), such as a septic system, comply with local health agency requirements.
- Temporary sanitary facilities that discharge to the sanitary sewer system should be properly connected to avoid illicit discharges.
- If discharging to the sanitary sewer, contact the local wastewater treatment plant for their requirements
- Sanitary/septic facilities should be maintained in good working order by a licensed service.
- Arrange for regular waste collection by a licensed hauler before facilities overflow.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Inspect facilities regularly.
  - Arrange for regular waste collection.

LIMITATIONS

- There are no major limitations to this best management practice.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites; Flood Control District of Maricopa County, AZ, September 1992.

Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Targeted Pollutants

- ○ *Sediment*
- ○ *Nutrients*
- ○ *Toxic Materials*
- ○ *Oil & Grease*
- ○ *Floatable Materials*
- ◒ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ○ *Capital Costs*
- ○ *O&M Costs*
- ◒ *Maintenance*
- ○ *Training*
- ○ *Suitability for Slopes >5%*

● *High* ○ *Low*

CA24

Best Management Practices

ACTIVITY: VEHICLE AND EQUIPMENT CLEANING

Graphic: North Central Texas COG, 1993

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment cleaning by using off-site facilities, washing in designated, contained areas only, eliminating discharges to the storm drain by infiltrating or recycling the wash water, and/or training employees and subcontractors.

APPROACH

- Use off-site commercial washing businesses as much as possible. Washing vehicles and equipment outdoors or in areas where wash water flows onto paved surfaces or into drainage pathways can pollute storm water. If you wash a large number of vehicles or pieces of equipment, consider conducting this work at an off-site commercial business. These businesses are better equipped to handle and dispose of the wash waters properly. Performing this work off-site can also be economical by eliminating the need for a separate washing operation at your site.
- If washing must occur on-site, use designated, bermed wash areas to prevent wash water contact with storm water, creeks, rivers, and other water bodies. The wash area can be sloped for wash water collection and subsequent infiltration into the ground.
- Use as little water as possible to avoid having to install erosion and sediment controls for the wash area.
- Use phosphate-free, biodegradable soaps.
- Educate employees and subcontractors on pollution prevention measures.
- Do not permit steam cleaning on-site. Steam cleaning can generate significant pollutant concentrations.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Minimal, some berm repair may be necessary.

LIMITATIONS

- Even phosphate-free, biodegradable soaps have been shown to be toxic to fish before the soap degrades.
- Sending vehicles/equipment off-site should be done in conjunction with ESC24 (Stabilized Construction Entrance).

REFERENCE

Swisher, R.D., 1987. Surfactant Biodegradation, Marcel Decker Corporation

Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

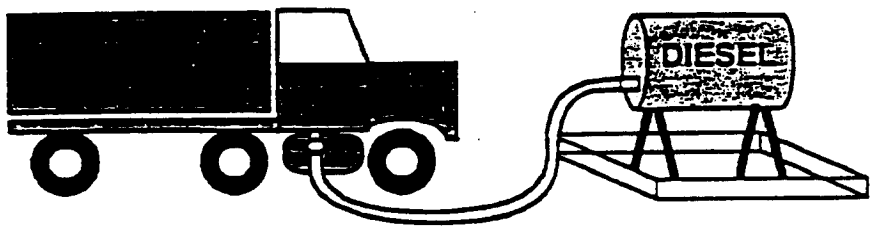
- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA30

Best Management Practices

ACTIVITY: VEHICLE AND EQUIPMENT FUELING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent fuel spills and leaks, and reduce their impacts to storm water by using off-site facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors.

APPROACH

- Use off-site fueling stations as much as possible. Fueling vehicles and equipment outdoors or in areas where fuel may spill/leak onto paved surfaces or into drainage pathways can pollute storm water. If you fuel a large number of vehicles or pieces of equipment, consider using an off-site fueling station. These businesses are better equipped to handle fuel and spills properly. Performing this work off-site can also be economical by eliminating the need for a separate fueling area at your site.
- If fueling must occur on-site, use designated areas, located away from drainage courses, to prevent the runon of storm water and the runoff of spills.
- Discourage "topping-off" of fuel tanks.
- Always use secondary containment, such as a drain pan or drop cloth, when fueling to catch spills/leaks.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Use adsorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.
- Carry out all Federal and State requirements regarding stationary above ground storage tanks.
- Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and perhaps forklifts, most vehicles should be able to travel to a designated area with little lost time.
- Train employees and subcontractors in proper fueling and cleanup procedures.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above measures are low cost, except for the capital costs of above ground tanks that meet all local environmental, zoning, and fire codes.
- Maintenance
  - Keep ample supplies of spill cleanup materials on-site.
  - Inspect fueling areas and storage tanks on a regular schedule.

LIMITATIONS

- Sending vehicles/equipment off-site should be done in conjunction with ESC24 (Stabilized Construction Entrance).

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

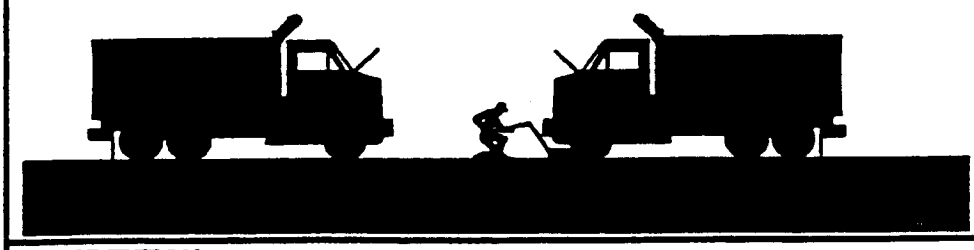
● High ○ Low

CA31

Best Management Practices

ACTIVITY: VEHICLE AND EQUIPMENT MAINTENANCE

Graphic: North Central Texas COG, 1993



DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment maintenance by running a "dry site". This involves using off-site facilities, performing work in designated areas only, providing cover for materials stored outside, checking for leaks and spills, containing and cleaning up spills immediately, and training employees and subcontractors.

APPROACH

- Keep vehicles and equipment clean, don't allow excessive build-up of oil and grease.
- Use off-site repair shops as much as possible. Maintaining vehicles and equipment outdoors or in areas where vehicle or equipment fluids may spill or leak onto the ground can pollute storm water. If you maintain a large number of vehicles or pieces of equipment, consider using an off-site repair shop. These businesses are better equipped to handle vehicle fluids and spills properly. Performing this work off-site can also be economical by eliminating the need for a separate maintenance area.
- If maintenance must occur on-site, use designated areas, located away from drainage courses, to prevent the runon of storm water and the runoff of spills.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Use adsorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.
- Regularly inspect on-site vehicles and equipment for leaks, and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment on-site.
- Segregate and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic, and transmission fluids.
- Train employees and subcontractors in proper maintenance and spill cleanup procedures.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Keep ample supplies of spill cleanup materials on-site.
  - Inspect maintenance areas on a regular schedule.

Objectives

- **Housekeeping Practices**
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA32

Best Management Practices

ACTIVITY: VEHICLE AND EQUIPMENT MAINTENANCE (Continue)

LIMITATIONS

- Sending vehicles/equipment off-site should be done in conjunction with ESC24 (Stabilized Construction Entrance).

Outdoor vehicle or equipment maintenance is a potentially significant source of storm water pollution. Activities that can contaminate storm water include engine repair and service, particularly changing or replacement of fluids, and outdoor equipment storage and parking (dripping engines). For further information on vehicle or equipment servicing, see CA30, Vehicle and Equipment Cleaning, and CA31, Vehicle and Equipment Fueling.

Listed below is further information if you must perform vehicle or equipment maintenance on-site.

Waste Reduction

Parts are often cleaned using solvents such as trichloroethylene, 1,1,1-trichloroethane, or methylene chloride. Many of these parts cleaners are harmful and must be disposed of as a hazardous waste. Reducing the number of solvents makes recycling easier and reduces hazardous waste management costs. Often, one solvent can perform a job as well as two different solvents. Also, if possible, eliminate or reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous materials. For example, replace chlorinated organic solvents (1,1,1-trichloroethane, methylene chloride, etc.) with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check list of active ingredients to see whether it contains chlorinated solvents. The "chlor" term indicates that the solvent is chlorinated. Also, try substituting a wire brush for solvents to clean parts.

Recycling/Disposal

Separating wastes allows for easier recycling and may reduce disposal costs. Keep hazardous and non-hazardous wastes separate, do not mix used oil and solvents, and keep chlorinated solvents (like 1,1,1-trichloroethane) separate from non-chlorinated solvents (like kerosene and mineral spirits). Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.

Oil filters disposed of in trash cans or dumpsters can leak oil and contaminate storm water. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.

Do not dispose of extra paints and coatings by dumping liquid onto the ground or throwing it into dumpsters. Allow coatings to dry or harden before disposal into covered dumpsters.

Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Do not bury used tires.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites; Flood Control District of Maricopa County, AZ, September 1992.

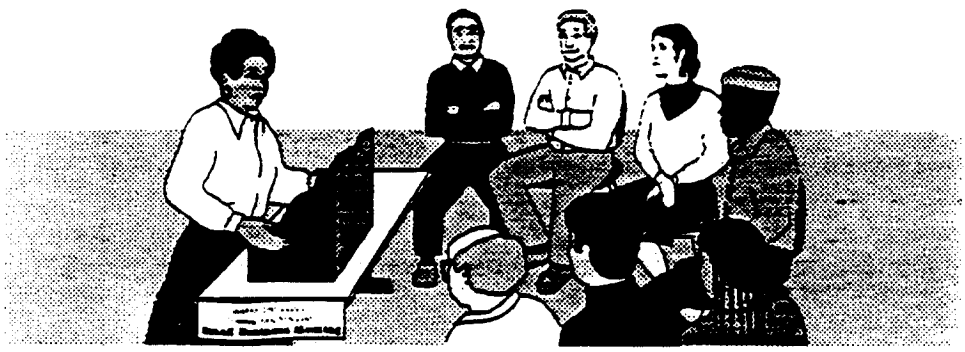
Blueprint for a Clean Bay-Construction-Related Industries: Best Management Practices for Storm Water Pollution Prevention; Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

CA32

R0000511

ACTIVITY: EMPLOYEE/SUBCONTRACTOR TRAINING



Objectives

- ***Housekeeping Practices***
- ***Contain Waste***
- *Minimize Disturbed Areas*
- *Stabilize Disturbed Areas*
- *Protect Slopes/Channels*
- *Control Site Perimeter*
- *Control Internal Erosion*

DESCRIPTION

Employee/subcontractor training, like maintenance or a piece of equipment, is not so much a best management practice as it is a method by which to implement BMPs. This fact sheet highlights the importance of training and of integrating the elements of employee/subcontractor training from the individual source controls into a comprehensive training program as part of a company's Storm Water Pollution Prevention Plan (SWPPP).

The specific employee/subcontractor training aspects of each of the source controls are highlighted in the individual fact sheets. The focus of this fact sheet is more general, and includes the overall objectives and approach for assuring employee/subcontractor training in storm water pollution prevention. Accordingly, the organization of this fact sheet differs somewhat from the other fact sheets in this chapter.

OBJECTIVES

Employee/subcontractor training should be based on four objectives:

- Promote a clear identification and understanding of the problem, including activities with the potential to pollute storm water;
- Identify solutions (BMPs);
- Promote employee/subcontractor ownership of the problems and the solutions; and
- Integrate employee/subcontractor feedback into training and BMP implementation.

APPROACH

- Integrate training regarding storm water quality management with existing training programs that may be required for your business by other regulations such as: the Illness and Injury Prevention Program (IIPP) (SB 198) (California Code of Regulations Title 8, Section 3203), the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard (29 CFR 1910.120), the Spill Prevention Control and Countermeasure (SPCC) Plan (40 CFR 112), and the Hazardous Materials Management Plan (Business Plan) (California Health and Safety Code, Section 6.95).
- Businesses, particularly smaller ones that may not be regulated by Federal, State, or local regulations, may use the information in this Handbook to develop a training program to reduce their potential to pollute storm water.
- Use the quick reference on disposal alternatives (Table 4.2) to train employee/subcontractors in proper and consistent methods for disposal.

CA40

Best Management Practices

ACTIVITY: EMPLOYEE/SUBCONTRACTOR TRAINING (Continue)

- Consider posting the quick reference table around the job site or in the on-site office trailer to reinforce training.
- Train employee/subcontractors in standard operating procedures and spill cleanup techniques described in the fact sheets. Employee/subcontractors trained in spill containment and cleanup should be present during the loading/ unloading and handling of materials.
- Personnel who use pesticides should be trained in their use. The California Department of Pesticide Regulation and county agricultural commissioners license pesticide dealers, certify pesticide applicators, and conduct on-site inspections.
- Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employee/ subcontractors can be lost by unknowing off-site contractors, so make sure they are well informed about what they are expected to do on-site.

CA40

R0000513

TABLE 4.2 QUICK REFERENCE - DISPOSAL ALTERNATIVES
(Adopted from Santa Clara County Nonpoint Source Pollution Control Program - December 1992)

All of the waste products on this chart are prohibited from discharge to the storm drain system. Use this matrix to decide which alternative disposal strategies to use. **ALTERNATIVES ARE LISTED IN PRIORITY ORDER.**

Key: HHW Household hazardous waste (Government-sponsored drop-off events)
POTW Publically Owned Treatment Plant
Reg.Bd. Regional Water Quality Control Board (Oakland)
"Dispose to sanitary sewer" means dispose into sink, toilet, or sanitary sewer clean-out connection.
"Dispose as trash" means dispose in dumpsters or trash containers for pickup and/or eventual disposal in landfill.
"Dispose as hazardous waste" for business/commercial means contract with a hazardous waste hauler to remove and dispose.

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
General Construction and Painting; Street and Utility Maintenance			
Excess paint (oil-based)	1. Recycle/reuse. 2. Dispose as hazardous waste.		1. Recycle/reuse. 2. Take to HHW drop-off.
Excess paint (water-based)	1. Recycle/reuse. 2. Dry residue in cans, dispose as trash. 3. If volume is too much to dry, dispose as hazardous waste.		1. Recycle/reuse. 2. Dry residue in cans, dispose as trash. 3. If volume is too much to dry, take to HHW drop-off
Paint cleanup (oil-based)	Wipe paint out of brushes, then: 1. Filter & reuse thinners, solvents. 2. Dispose as hazardous waste.		Wipe paint out of brushes, then: 1. Filter & reuse thinners, solvents. 2. Take to HHW drop-off.
Paint cleanup (water-based)	Wipe paint out of brushes, then: 1. Rinse to sanitary sewer.		Wipe paint out of brushes, then: 1. Rinse to sanitary sewer.
Empty paint cans (dry)	1. Remove lids, dispose as trash.		1. Remove lids, dispose as trash.
Paint stripping (with solvent)	1. Dispose as hazardous waste.		1. Take to HHW drop-off.
Building exterior cleaning (high-pressure water)	1. Prevent entry into storm drain and remove offsite 2. Wash onto dirt area, spade in 3. Collect (e.g. mop up) and discharge to sanitary sewer	POTW	
Cleaning of building exteriors which have **HAZARDOUS MATERIALS** (e.g. mercury, lead) in paints	1. Use dry cleaning methods 2. Contain and dispose washwater as hazardous waste (Suggestion: dry material first to reduce volume)		

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
General Construction and Painting; Street and Utility Maintenance (cont'd)			
Non-hazardous paint scraping/ sand blasting	1. Dry sweep, dispose as trash		1. Dry sweep, dispose as trash
HAZARDOUS paint scraping/sand blasting (e.g. marine paints or paints containing lead or tributyl tin)	1. Dry sweep, dispose as hazardous waste		1. Dry sweep, take to HHW drop-off
Soil from excavations during periods when storms are forecast	1. Should not be placed in street or on paved areas 2. Remove from site or backfill by end of day 3. Cover with tarpaulin or surround with hay bales, or use other runoff controls 4. Place filter mat over storm drain Note: Thoroughly sweep following removal of dirt in all four alternatives.		
Soil from excavations placed on paved surfaces during periods when storms are not forecast	1. Keep material out of storm conveyance systems and thoroughly remove via sweeping following removal of dirt		
Cleaning streets in construction areas	1. Dry sweep and minimize tracking of mud 2. Use silt ponds and/or similar pollutant reduction techniques when flushing pavement		
Soil erosion, sediments	1. Cover disturbed soils, use erosion controls, block entry to storm drain. 2. Seed or plant immediately.		
Fresh cement, grout, mortar	1. Use/reuse excess 2. Dispose to trash		1. Use/reuse excess 2. Dispose as trash
Washwater from concrete/mortar (etc.) cleanup	1. Wash onto dirt area, spade in 2. Pump and remove to appropriate disposal facility 3. Settle, pump water to sanitary sewer	POTW	1. Wash onto dirt area, spade in 2. Pump and remove to appropriate disposal facility 3. Settle, pump water to sanitary sewer
Aggregate wash from driveway/patio construction	1. Wash onto dirt area, spade in 2. Pump and remove to appropriate disposal facility 3. Settle, pump water to sanitary sewer	POTW	1. Wash onto dirt area, spade in 2. Pump and remove to appropriate disposal facility 3. Settle, pump water to sanitary sewer

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
General Construction and Painting; Street and Utility Maintenance (cont'd)			
Rinsewater from concrete mixing trucks	1. Return truck to yard for rinsing into pond or dirt area 2. At construction site, wash into pond or dirt area		
Non-hazardous construction and demolition debris	1. Recycle/reuse (concrete, wood, etc.) 2. Dispose as trash		1. Recycle/reuse (concrete, wood, etc. 2. Dispose as trash
Hazardous demolition and construction debris (e.g. asbestos)	1. Dispose as hazardous waste		1. Do not attempt to remove yourself. Contact asbestos removal service for safe removal and disposal 2. Very small amounts (less than 5 lbs) may be double-wrapped in plastic and taken to HHW drop-off
Saw-cut slurry	1. Use dry cutting technique and sweep up residue 2. Vacuum slurry and dispose off-site. 3. Block storm drain or berm with low weir as necessary to allow most solids to settle. Shovel out gutters; dispose residue to dirt area, construction yard or landfill.		
Construction dewatering (Nonturbid, uncontaminated groundwater)	1. Recycle/Reuse 2. Discharge to storm drain		
Construction dewatering (Other than nonturbid, uncontaminated groundwater)	1. Recycle/reuse 2. Discharge to sanitary sewer 3. As appropriate, treat prior to discharge to storm drain	POTW Reg. Bd.	
Portable toilet waste	1. Leasing company shall dispose to sanitary sewer at POTW	POTW	
Leaks from garbage dumpsters	1. Collect, contain leaking material. Eliminate leak, keep covered, return to leasing company for immediate repair 2. If dumpster is used for liquid waste, use plastic liner		

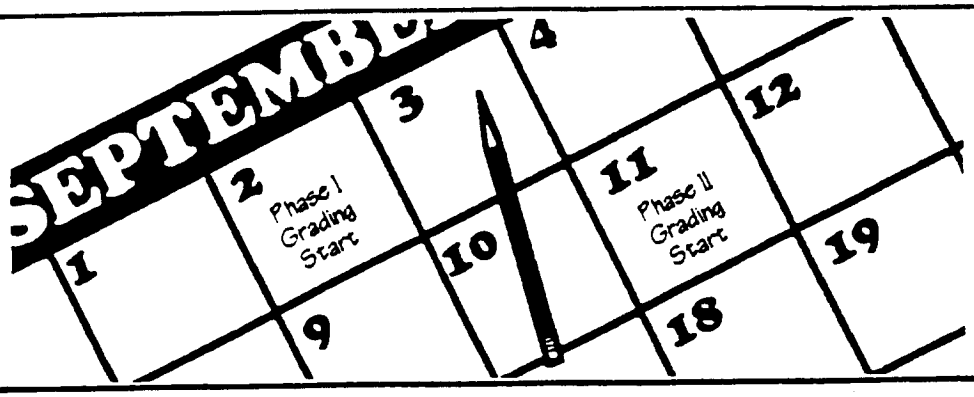
DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
General Construction and Painting; Street and Utility Maintenance (cont'd)			
Leaks from construction debris bins	1. Insure that bins are used for dry nonhazardous materials only (Suggestion: Fencing, covering help prevent misuse)		
Dumpster cleaning water	1. Clean at dumpster owner's facility and discharge waste through grease interceptor to sanitary sewer 2. Clean on site and discharge through grease interceptor to sanitary sewer	POTW POTW	
Cleaning driveways, paved areas * (Special Focus = Restaurant alleys Grocery dumpster areas) * Note: Local drought ordinances may contain additional restrictions	1. Sweep and dispose as trash (Dry cleaning only). 2. For vehicle leaks, restaurant/grocery alleys, follow this 3-step process: a. Clean up leaks with rags or absorbents. b. Sweep, using granular absorbent material (cat litter). c. Mop and dispose of mopwater to sanitary sewer (or collect rinsewater and pump to the sanitary sewer). 3. Same as 2 above, but with rinsewater (2c)(no soap) discharged to storm drain.		1. Sweep and dispose as trash (Dry cleaning only). 2. For vehicle leaks, follow this 3-step process: a. Clean up leaks with rags or absorbents; dispose as hazardous waste. b. Sweep, using granular absorbent material (cat litter). c. Mop and dispose of mopwater to sanitary sewer.
Steam cleaning of sidewalks, plazas * * Note: Local drought ordinances may contain additional restrictions	1. Collect all water and pump to sanitary sewer. 2. Follow this 3-step process: a. Clean oil leaks with rags or adsorbents b. Sweep (Use dry absorbent as needed) c. Use no soap, discharge to storm drain		
Potable water/line flushing Hydrant testing	1. Deactivate chlorine by maximizing time water will travel before reaching creeks		
Super-chlorinated (above 1 ppm) water from line flushing	1. Discharge to sanitary sewer 2. Complete dechlorination required before discharge to storm drain		

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
Landscape/Garden Maintenance			
Pesticides	1. Use up. Rinse containers use rinsewater as product. Dispose rinsed containers as trash 2. Dispose unused pesticide as hazardous waste		1. Use up. Rinse containers, use rinsewater as pesticide. Dispose rinsed container as trash. 2. Take unused pesticide to HHW drop-off
Garden clippings	1. Compost 2. Take to Landfill		1. Compost 2. Dispose as trash.
Tree trimming	1. Chip if necessary, before composting or recycling		1. Chip if necessary, before composting or recycling
Swimming pool, spa, fountain water (emptying)	1. Do not use metal-based algicides (i.e. Copper Sulfate) 2. Recycle/reuse (e.g. irrigation) 3. Determine chlorine residual = 0, wait 24 hours and then discharge to storm drain.	POTW	1. Do not use metal-based algicides (i.e. Copper Sulfate) 2. Recycle/reuse (e.g. irrigation) 3. Determine chlorine residual = 0, wait 24 hours and then discharge to storm drain.
Acid or other pool/spa/fountain cleaning	1. Neutralize and discharge to sanitary sewer	POTW	
Swimming pool, spa filter backwash	1. Reuse for irrigation 2. Dispose on dirt area 3. Settle, dispose to sanitary sewer		1. Use for landscape irrigation 2. Dispose on dirt area 3. Settle, dispose to sanitary sewer
Vehicle Wastes			
Used motor oil	1. Use secondary containment while storing, send to recycler.		1. Put out for curbside recycling pickup where available 2. Take to Recycling Facility or auto service facility with recycling program 3. Take to HHW events accepting motor oil
Antifreeze	1. Use secondary containment while storing, send to recycler.		1. Take to Recycling Facility
Other vehicle fluids and solvents	1. Dispose as hazardous waste		1. Take to HHW event
Automobile batteries	1. Send to auto battery recycler 2. Take to Recycling Center		1. Exchange at retail outlet 2. Take to Recycling Facility or HHW event where batteries are accepted
Motor home/construction trailer waste	1. Use holding tank. Dispose to sanitary sewer		1. Use holding tank, dispose to sanitary sewer.

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
Vehicle Wastes (cont'd)			
Vehicle Washing	1. Recycle 2. Discharge to sanitary sewer, never to storm drain	POTW	1. Take to Commercial Car Wash. 2. Wash over lawn or dirt area 3. If soap is used, use a bucket for soapy water and discharge remaining soapy water to sanitary sewer.
Mobile Vehicle Washing	1. Collect washwater and discharge to sanitary sewer.	POTW	
Rinsewater from dust removal at new car fleets	1. Discharge to sanitary sewer 2. If rinsing dust from exterior surfaces from appearance purposes, use no soap (water only); discharge to storm drain.	POTW	
Vehicle leaks at Vehicle Repair Facilities	Follow this 3-step process: 1. Clean up leaks with rags or absorbents 2. Sweep, using granular absorbent material (cat litter) 3. Mop and dispose of mopwater to sanitary sewer.		
Other Wastes			
Carpet cleaning solutions & other mobile washing services	1. Dispose to sanitary sewer	POTW	1. Dispose to sanitary sewer
Roof drains	1. If roof is contaminated with industrial waste products, discharge to sanitary sewer 2. If no contamination is present, discharge to storm drain		
Cooling water Air conditioning condensate	1. Recycle/reuse 2. Discharge to sanitary sewer	POTW	
Pumped groundwater, infiltration/ foundation drainage (contaminated)	1. Recycle/reuse (landscaping, etc.) 2. Treat if necessary; discharge to sanitary sewer 3. Treat and discharge to storm drain	Reg. Bd. POTW Reg. Bd.	
Fire fighting flows	If contamination is present, Fire Dept. will attempt to prevent flow to stream or storm drain		

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
Other Wastes (cont'd)			
Kitchen Grease	1. Provide secondary containment, collect, send to recyler. 2. Provide secondary containment, collect, send to POTW via hauler.	POTW	1. Collect, solidify, dispose as trash
Restaurant cleaning of floor mats, exhaust filters, etc.	1. Clean inside building with discharge through grease trap to sanitary sewer. 2. Clean outside in container or bermed area with discharge to sanitary sewer.		
Clean-up wastewater from sewer back-up	1. Follow this procedure: a. Block storm drain, contain, collect, and return spilled material to the sanitary sewer. b. Block storm drain, rinse remaining material to collection point and pump to sanitary sewer. (no rinse-water may flow to storm drain)		

BMP: SCHEDULING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Sequencing the construction project to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking.

SUITABLE APPLICATIONS

Proper sequencing of construction activities to reduce erosion potential should be incorporated into the schedule of every construction project. Use of other, more costly yet less effective, erosion and sedimentation controls, may often be reduced through proper construction sequencing.

APPROACH

- Project design considerations: Design project to integrate into existing land contours. Significant regrading of a site will require more costly erosion and sedimentation control measures and may require that on-site drainage facilities be installed.
- Incorporate existing, natural areas: Inventory and evaluate the existing site terrain and vegetation. Disturbance of highly erosive natural areas (e.g., steep, unstable slope areas, watercourses) should be minimized, while protecting other areas may enhance site aesthetics. Construction should not disturb these areas (see ESC2).
- Avoid rainy periods: Schedule major grading operations during dry months. Allow enough time before rainfall begins to stabilize the soil with vegetation or physical means (see ESC 10 to 24) or to install temporary sediment trapping devices (see ESC 50 to 56).
- Practice erosion and sediment control year round: Erosion may be caused during dry seasons by "freak" rainfall, wind and vehicle tracking. Therefore, keep the site stabilized year-round, and retain wet season sediment trapping devices.
- Minimize soil exposed at one time: Schedule projects to disturb only small portions of the site at any one time. Complete grading as soon as possible. Immediately stabilize the disturbed portion before grading the next portion. Practice staged seeding—revegetate cut and fill slopes as the work progresses.
- Trenching: Close and stabilize open trenches as soon as possible. Sequence trenching projects so that most open portions of the trench are closed before new trenching is begun.

REQUIREMENTS

- Cost
  - Construction scheduling to reduce erosion may increase other construction costs due to reduced economies of scale in performing site grading. The cost-effectiveness of scheduling techniques should be compared with the other, less effective erosion and sedimentation controls to achieve a cost-effective balance.

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ○ Suitibility for Slopes >5%

● High ○ Low

ESC1

Best Management Practices

BMP: SCHEDULING (Continue)

LIMITATIONS
There are no significant limitations to the use of this BMP.

REFERENCES
Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona - 1992.

Erosion and Sediment Control Guidelines for Developing Areas in Texas, U.S. Department of Agriculture, Soil Conservation Service, Fort Worth, Texas - 1976.

Storm Water Management for Construction Activites. Developing Pollution Prevention Plans and Best Management Practices, U.S. Environmental Protection Agency, Office of Water (EPA 832-R-92-005) - September, 1992.

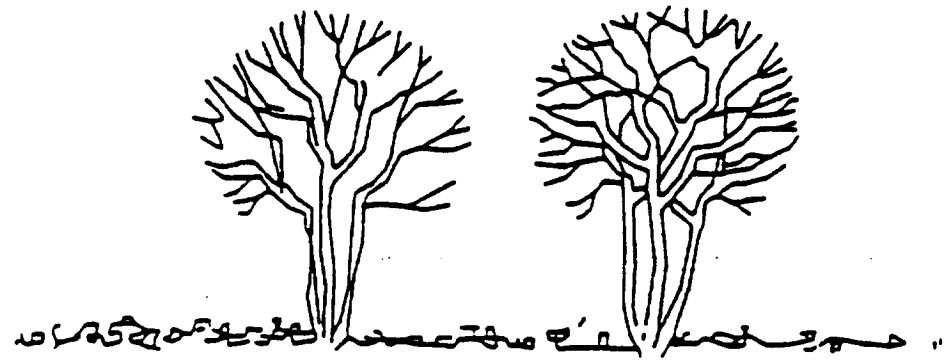
Virginia Erosion and Sediment Control Handbook, Third Edition, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation - 1992.

SUPPLEMENTAL INFORMATION, JUNE 1998

Limit and phase clearing. By clearing only those areas immediately essential for completing site construction, buffer zones are preserved and soil remains undisturbed until construction begins in a particular area. Additionally, the proposed limits of land disturbance should be physically marked off to ensure that no more than the required land area is cleared.

ESC1

BMP: PRESERVATION OF EXISTING VEGETATION



GENERAL DESCRIPTION

Carefully planned preservation of existing vegetation minimizes the potential of removing or injuring existing trees, vines, shrubs and/or grasses that serve as erosion controls.

SUITABLE APPLICATIONS

- Areas within site where no construction activity occurs, or occurs at a later date.
- Sensitive areas where natural vegetation exist and should be preserved, such as: steep slopes, watercourses, and building sites in wooded areas.
- Areas where local, state and federal government requires preservation, such as: vernal pools, wetlands, marshes, certain oak trees, etc.

INSTALLATION/APPLICATION CRITERIA

- Clearly mark, flag or fence vegetation or areas where vegetation should be preserved.
- Prepare landscaping plans which include as much existing vegetation as possible and state proper care of this vegetation both during and after construction.
- Define and protect with berms, fencing, signs, etc., a setback area from vegetation to be preserved. Setback area size should be based on the location, species, size, age and potential impact of adjacent construction activities or permanent improvements.
- Proposed landscaping plans which do not include plant species that compete with the existing vegetation.
- Do not locate construction traffic routes, spoil piles, etc., where significant adverse impact on existing vegetation may occur.

REQUIREMENTS

- Maintenance
  - Inspection and maintenance requirements for protection of vegetation are low.
  - During construction the limits of grading or disturbance should be clearly marked at all times.
  - Irrigation or maintenance of native trees or vegetation should conform to specifications on the Landscape Plan.
- Cost
  - There is little cost associated with preserving existing vegetation if properly planned during the project design, and may yield aesthetic benefits which enhance property values.

LIMITATIONS

- Requires forward planning by the owner/developer, contractor and design staff.
- For sites with diverse topography, it is often difficult and expensive to save existing trees while grading the site satisfactorily for the planned development.

Objectives

- *Housekeeping Practices*
- *Contain Waste*
- *Minimize Disturbed Areas*
- *Stabilize Disturbed Areas*
- *Protect Slopes/Channels*
- *Control Site Perimeter*
- *Control Internal Erosion*

Targeted Pollutants

- ● *Sediment*
- ○ *Nutrients*
- ○ *Toxic Materials*
- ○ *Oil & Grease*
- ○ *Floatable Materials*
- ○ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ○ *Capital Costs*
- ○ *O&M Costs*
- ○ *Maintenance*
- ○ *Training*
- ● *Suitability for Slopes >5%*

● *High* ○ *Low*

ESC2

Best Management Practices

Additional Information — Preservation of Existing Vegetation

The best way to prevent excessive erosion is to not disturb the land. On a construction site, where extensive land disturbance is necessary, a reasonable BMP would be to not disturb land in sensitive areas of the site which need not be altered for the project to be viable (e.g., natural watercourses, steep slopes), and to design the site to incorporate particularly unique or desireable existing vegetation into the site landscaping plan. Clearly marking and leaving a buffer area around these unique areas will both help to preserve these areas as well as take advantage of natural erosion prevention and sediment trapping in naturally vegetated areas.

Existing vegetation to be preserved on the site must be protected from mechanical and other injury while the land is being developed. The purpose of protecting existing vegetation is to insure the survival of desirable vegetation for shade, beautification, and erosion protection. Mature vegetation has extensive root systems that help to hold soil in place, thus reducing erosion. Also, vegetation helps to keep soil from drying rapidly and becoming susceptible to erosion. To effectively save existing vegetation, no disturbances of any kind should be allowed within a defined area around the vegetation. For trees, no construction activity should occur within the drip line of the tree.

The following criteria may be used for deciding which vegetation will remain on the site:

- Aesthetic values: Consideration should be given to foliage, flowering habits, bark and crown characteristics (for trees).
- Freedom from disease and rot.
- Life span of trees: Short-lived trees need not be preserved.
- Environmental values: Habitat; screening; and buffers.
- Sudden exposure: Save vegetation which grows in direct sunlight and is able to withstand radiated heat from proposed buildings and pavement.
- Space needed: Sufficient space must be provided between the vegetation and any structures, electric and telephone lines, water and sewer lines, driveways and streets. Mark trees and shrubs with bright paint or ribbon so there is no doubt as to which trees and shrubs are to be left and protected from damage during construction.

Saving existing vegetation and mature trees on-site, beautifies the area and may save money by reducing new landscaping requirements. Mature trees also increase property values and satisfy consumer aesthetic needs.

Preserving and protecting existing vegetation can often result in more stable soil conditions during construction. Careful site planning and identification of plantings to preserve can provide erosion and sedimentation controls during construction, and contribute to the aesthetics of the development. For example, in Sacramento County a tree ordinance has been adopted that protects the native California Oak tree. Provisions to protect the tree and its root system during construction must be specified in the project plans, and an area must be provided where the soil stability may not be disturbed. No grading or construction storage within the tree dripline is allowed.

Installation/Application

Building sites may be planned to integrate existing vegetation and trees. Construction impacts must be considered. Trench width for pipe construction projects and the location of permanent structures, such as buildings, needs to be considered when preserving existing vegetation, including mature trees and their root system. Native vegetation should be preserved since it is able to adapt to the climate. The USDA Soil Conservation Service should be contacted about existing vegetation for sites throughout California. Mature trees are generally preferable to newly planted trees because of the greater soil stabilization provided by the extensive root system of a mature tree.

ESC2

Additional Information — Preservation of Existing Vegetation

Methods for protecting existing vegetation and trees:

- Stake off root system limits (drip line of tree). Some counties limit construction within 5 feet of the tree drip line.
- Fence off the area to be preserved or along the tree drip line.
- Flag or mark trees to remain in place.
- Tree wells and retaining walls (permanent) help preserve existing vegetation, but must be large enough to protect the root system (see below).
- For the California Oak tree, no trenching or irrigation should be allowed within the driplines of the tree, since both these activities are detrimental to the preservation of the tree.
- Where grading under trees is necessary, excavation and fill should be limited to 1 foot within the driplines.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

County of Sacramento Tree Preservation Ordinance - September 1981.

Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

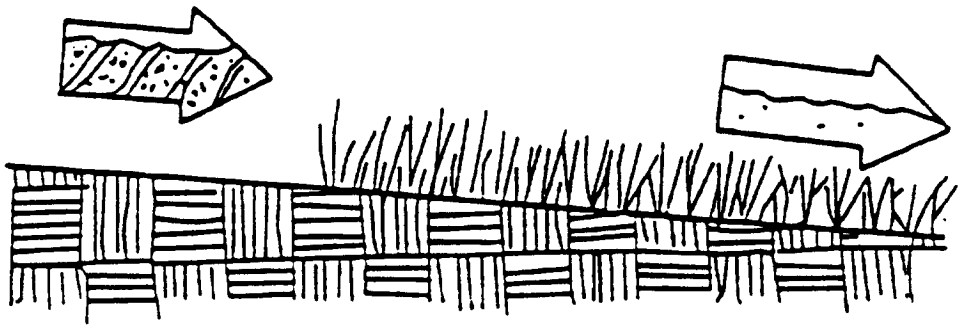
Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

SUPPLEMENTAL INFORMATION, JUNE 1998

Limit and phase clearing. By clearing only those areas immediately essential for completing site construction, buffer zones are preserved and soil remains undisturbed until construction begins in a particular area. Additionally, the proposed limits of land disturbance should be physically marked off to ensure that no more than the required land area is cleared.

ESC2

BMP: SEEDING AND PLANTING



GENERAL DESCRIPTION

Seeding of grasses and plantings of trees, shrubs, vines and ground covers provide long-term stabilization of soil. In some areas, with suitable climates, grasses can be planted for temporary stabilization.

SUITABLE APPLICATIONS

- Appropriate for site stabilization both during construction and post-construction.
- Any graded/cleared areas where construction activities have ceased.
- Open space cut and fill areas.
- Steep slopes.
- Spoil piles.
- Vegetated swales.
- Landscape corridors.
- Stream banks.

INSTALLATION/APPLICATION CRITERIA

Type of vegetation, site and seedbed preparation, planting time, fertilization and water requirements should be considered for each application.

Grasses:

- Ground preparation: fertilize and mechanically stabilize the soil.
- Tolerant of short-term temperature extremes and waterlogged soil conditions.
- Appropriate soil conditions: shallow soil base, good drainage, slope 2:1 or flatter.
- Develop well and quickly from seeds.
- Mowing, irrigating, and fertilizing are vital for promoting vigorous grass growth.

Trees and Shrubs:

- Selection Criteria: vigor, species, size, shape & wildlife food source.
- Soil conditions: select species appropriate for soil,drainage & acidity.
- Other Factors: wind/exposure, temperature extremes, and irrigation needs.

Vines and Ground Covers:

- Ground preparation: lime and fertilizer preparation.
- Use proper seeding rates.
- Appropriate soil conditions: drainage, acidity, slopes.
- Generally avoid species requiring irrigation.

Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- **Stabilize Disturbed Areas**
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ● Sediment
- ◒ Nutrients
- ◒ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ◒ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

ESC10

Best Management Practices

BMP: SEEDING AND PLANTING (Continue)

REQUIREMENTS

- Maintenance
  - Shrubs and trees must be adequately watered and fertilized and if needed pruned.
  - Grasses may need to be watered and mowed.
- Cost: Average annual cost for installation and maintenance (2 year useful life, source: EPA, 1992)
  - Seeding: $300 per acre, appropriate for flat slopes and stable soils.
  - Seeding with Mulching: $1,100 per acre, appropriate for moderate to steep slopes and/or erosive soils.
  - Trees, shrubs, vines, and ground cover: Cost, applicability based on species used and terrain features.

LIMITATIONS

- Permanent and temporary vegetation may not be appropriate in dry periods without irrigation.
- Fertilizer requirements may have potential to create storm water pollution if improperly applied.

SUPPLEMENTAL INFORMATION, JUNE 1998

Limit and phase clearing. By clearing only those areas immediately essential for completing site construction, buffer zones are preserved and soil remains undisturbed until construction begins in a particular area. Additionally, the proposed limits of land disturbance should be physically marked off to ensure that no more than the required land area is cleared.

Stockpile topsoil and re-apply when revegetating the site. Top soil with high organic content is a valuable resource essential to establish new vegetation and can only be replaced with expensive hauling from other sites, or with many years of the natural process of soil formation.

Develop and implement nutrient management plans. Properly time applications and work fertilizers and liming materials into the soil to depths of 4 to 6 inches. Using soil tests to determine specific nutrient needs at the site can greatly decrease the amount of nutrients applied.

ESC10

Additional Information — Seeding and Planting

Permanent seeding of grasses, sodding, and planting of trees, shrubs, vines and ground covers can provide long-term stabilization of soil. Permanent seeding and planting contributes to long-term site aesthetics and helps reduce erosion by reducing the velocity of runoff, allowing infiltration to occur, filtering sediments, and by holding soil particles in place.

Seeding and planting should be applied as soon as final grading is done to all graded and cleared areas of the construction site where plant cover is ultimately desired. For example, vegetation may be established along landscaped corridors and buffer zones where they may act as filter strips (see TC6 in Chapter 5 of the Municipal Handbook). Additionally, vegetated swales, steep and/or rocky slopes and stream banks can also serve as appropriate areas for seeding and plantings.

Installation/Application Criteria

Application of appropriate vegetation must consider: the seedbed or plantbed, proper seasonal planting times, water requirements fertilizer requirements and availability of the selected vegetation within the project's region. Permanent plantings during the construction stage of projects require careful coordination between the local agency inspectors, project managers, construction managers, and landscape contractor. Protocols for coordination and implementation procedures regarding site access, construction staging, and short- and long-term planting areas should be developed prior to the construction bid process. Where possible, these protocols should be established by and remain the responsibility of the site owner.

Because of the many available types of plants and ground covers and because site conditions and land use vary so widely within California, a set of general guidelines is included for installation/application of grasses, trees and shrubs, vines and ground covers. However, your local municipality, Soil Conservation Service, agricultural extention, or other resources should be consulted on appropriate species, planting requirements, and maintenance needs for your climate and soils.

Grasses

Grasses, depending on the type, provide short-term soil stabilization during construction or can serve as long- term/ permanent soil stabilization for disturbed areas. In general, grasses provide low maintenance to areas that have been cleared, graded and mechanically stabilized.

Selection:

The selection of the grass type is determined by the climate, irrigation, mowing frequency, maintenance effort and soil-bed conditions. Although grasses provide quick germination and rapid growth, they also have a shallow root system and are not as effective in stabilizing deep soils, where trees, shrubs and deep rooted ground covers may be more appropriate. Several grasses are adaptable to the various California climates. The figure at the end of these fact sheets shows appropriate grasses for regions within California. Blue grass is well adapted throughout California except for in the valley regions. The blue grass is found on dry, sandy soils that have good drainage. Bermuda grass, on the other hand is well adapted in the valley region where soils are dry, coarse and heavier. Specific seed mix and/or varieties for each site should be provided by an approved/qualified plant materials specialist.

ESC10

Additional Information — Seeding and Planting

Planting:
The following steps should be followed to ensure established growth:

1. Select the proper grass for the site.
2. Prepare the seedbed; soil should be fertilized and contain good topsoil or soil at least a 2:1 or flatter slope.
3. Broadcast the seedings in the late fall or early spring. In the late fall, seedings should be planted by mid- September to have established grass by the October rainy season.
4. Initial irrigation will be required often for most grasses, with follow-up irrigation and fertilization as needed. Mulching may be required in dry climates or during drought years.

Trees & Shrubs

Selection:
Trees and shrubs, when properly selected, are low maintenance plantings that stabilize adjacent soils, moderate the adjacent temperatures, filter air pollutants, and serve as a barrier to wind. Some desirable characteristics to consider in selecting trees and shrubs include: vigor, species, age, size and shape, and use as a wildlife food source and habitat.

Trees and shrubs to be saved should be clearly marked so that no construction activity will take place within the dripline of the plant. The sites for new plantings should be evaluated. Consider the prior use of the land: adverse soil conditions such as poor drainage or acidity; exposure to wind; temperature extremes; location of utilities, paved areas, and security lighting and traffic problems.

Transplanting:
Time of Year - Late fall through winter (November to February) is the preferred time for transplanting in most of California.

Preparation - Proper digging of a tree/shrub includes the conservation of as much of the root system as possible. Soil adhering to the roots should be damp when the tree is dug, and kept moist until re-planting. The soil ball should be 12 inches in diameter for each inch of diameter of the trunk.

Site preparation - Refer to landscape plans and specifications for site and soil preparation, and for ability to coordinate construction strategy with permanent vegetation.

Supporting the trunk - Many newly planted trees/shrubs need artificial support to prevent excessive swaying.

Watering - Soil around the tree should be thoroughly watered after the tree is set in place. When the soil becomes dry, the tree should be watered deeply, but not often. Mulching around the base of the tree is helpful in preventing roots from drying out.

Vines & Ground Covers

Selection:
Vines, ground covers, and low growing plants, that can quickly spread, come in many types, colors, and growth habits. Some are suitable only as part of a small maintained landscape area, while some can stabilize large areas with little maintenance. Flowers, which provide little long-term erosion control may be planted to add color and varietal appearances.

ESC10

R0000529

Additional Information — Seeding and Planting

Caution should be exercised in the non-native vegetation because of impacts to native vegetation on adjacent lands. For example, species that may be planted at the construction site can quickly spread and compete with originally undisturbed vegetation such as the California Poppy and California buckwheat, both of which complete poorly with introduced grasses (e.g., planting wild oats is illegal in California). In addition to stabilizing disturbed soil, vines and ground covers can perform the following functions:

1. Provide attractive cover that does not need mowing.
2. Help to define traffic areas and control pedestrian movement.

Site Preparation:
Ground covers are plants that naturally grow very close together, causing severe competition for space nutrients and water. Soil for ground covers should be well prepared. The entire area should be spaded, disced, or rototilled to a depth of six to eight inches. Two to three inches of organic material, such as good topsoil or peat, should be spread over the entire area.

Planting:
The following steps will help ensure good plant growth.

1. Make the plantings following the contours of the land.
2. Dig the holes 1/3 larger than the plant root ball.
3. Know what depth to place the plants.
4. Use good topsoil or soil mixture with a lot of organic matter.
5. Fill hole 1/3 to 1/2 full, shake plants to settle soil among roots, then water.
6. Leave saucer-shaped depression around the plant to hold water.
7. Water thoroughly and regularly.
8. Space plants according to the type of plant and the extent of covering desired.

Materials:
There are many different species of vines and ground covers from which to choose, but care must be taken in their selection. It is essential to select planting materials suited to both the intended use and specific site characteristics. The plants discussed in this handbook are those which are known to be adapted to California, and commonly available from commercial nurseries. Additional information can be obtained from local nurserymen, landscape architects, and extension agents. An approved low water use plant list may be obtained from the State Department of Water Resources or the Soils Conservation Service.

Requirements
Maintenance

General requirements include:

- Grass maintenance should be minimal to none. Irrigation and regular fertilizing may be required for some types of grasses. Mowing is only required in areas where aesthetics or fire hazards are a concern.
- Young trees should receive an inch of water each week for the first two years after planting. The tree should be watered deeply, but not more often than once per week.
- Transplanted trees should be fertilized on an annual basis.
- Proper pruning, watering, and application of fertilizer is necessary to maintain healthy and vigorous shrubs. A heavy layer of mulch applied around the shrubs reduces weeds and retains moisture.
- Trim old growth as needed to improve the appearance of ground covers. Most covers need once-a-year trimming to promote growth.

ESC10

R0000530

Additional Information — Seeding and Planting

Limitations

- Construction activities are likely to injure or kill trees unless adequate protective measures are taken. Direct contact by equipment is the most obvious problem, but damage is also caused by root stress from filling, excavation, or compacting too close to trees.
- Temporary seeding can only be viable when adequate time is available for plants to grow and establish.
- Over fertilizing of plants may cause pollution of storm water runoff.
- Irrigation source and supply may be limiting.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, September 1992.

"Draft - Sedimentation and Erosion Control, An Inventory of Current Practices", U.S.E.P.A., April, 1990.

Guides for Erosion and Sediment Controls in California, USDA Soils Conservation Service - January 1991.

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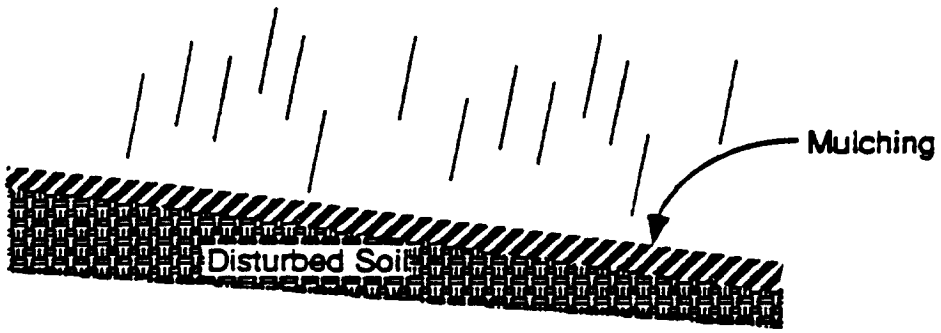
Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC10

R0000531

BMP: MULCHING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- **Stabilize Disturbed Areas**
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

Mulching is used to temporarily and permanently stabilize cleared or freshly seeded areas. Types of mulches include organic materials, straw, wood chips, bark or other wood fibers, decomposed granite, and gravel.

SUITABLE APPLICATIONS

- Temporary stabilization of freshly seeded and planted areas.
- Temporary stabilization during periods unsuitable for growing vegetation.
- Temporary stabilization of areas that cannot be seeded or planted (e.g., insufficient rain, steep slope).
- Mulches such as gravel and decomposed soils may be used as post-construction BMPs, particularly in arid regions.

INSTALLATION/APPLICATION CRITERIA

Mulch prevents erosion by protecting the soil surface and fostering growth of new seedings that do not stabilize by themselves.

- May be used with netting to supplement soil stabilization.
- Apply to planting areas where slopes are 2:1 or greater.
- Binders may be required for steep areas, or if wind and runoff is a problem.
- Type of mulch, binders, and application rates should be recommended by manufacturer/contractor.

REQUIREMENTS

- Maintenance
  - Must be inspected weekly and after rain for damage or deterioration.
- Cost: Average annual cost for installation and maintenance (3–4 month useful life, source: EPA, 1992)
  - Straw Mulch: $7,500 per acre.
  - Wood Fiber Mulch: $3,500 per acre.
  - Jute Netting: $12,500 per acre.

LIMITATIONS

- Wood fiber mulches should be used only in areas with over 20 inches annual precipitation.
- Organic mulches are not permanent erosion control measures.
- Mulches tend to lower the soil surface temperature, and may delay germination of some seeds.
- Permanent mulches for arid regions should include gravel and decomposed soils.

Targeted Pollutants

- ● Sediment
- ◒ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

● High ○ Low

ESC11

Best Management Practices

Additional Information — Mulching

Mulching protects the soil from rainfall impact; increases infiltration; conserves moisture around trees, shrubs and seedings; prevents compaction and cracking of soil; and aids plant growth for seedings and plantings by holding the seeds, fertilizers and topsoil in place until growth occurs. Mulches include organic materials, straw, wood chips, bark or other wood fibers, decomposed granite and gravel. A variety of nettings or mats of organic or non-organic materials and chemical soil stabilization are practices that may be used conjunctively with mulching.

Mulching may be applied to all graded and cleared areas of the construction site:

- Areas which have been permanently seeded to assist in retaining moisture, and to hold seedings;
- Areas which need temporary soil surface protection because seeding cannot occur due to the season;
- Areas between trees, shrubs and certain ground covers;
- Areas where climatic conditions require a soil moisture retention aid to avoid cracking of the soil and associated compaction, and require soil temperature modification.

Installation/Application Criteria

Only a set of general guidelines is included for application and installation of mulching on disturbed lands because of the various climates, soil conditions and land uses in California. Installation of mulch consists of furnishing all materials, preparing the soil surface and applying the mulch to all soil surface areas designated on the project plans or established by the site engineer.

Materials

Organic mulch materials, such as straw, wood chips, bark and wood fiber, have been found to be most effective where re-vegetation will be provided by reseeding. The choice of mulch should be based on the size of the area, site slopes, surface conditions such as hardness and moisture; weed growth and availability of mulch materials.

Wood Fiber Mulches: Wood fiber mulches consist of specially prepared wood fiber processed to contain no growth germination inhibiting factors. The mulch should be from virgin wood, and be manufactured and processed so the fibers will remain in uniform suspension in water under agitation to form a homogenous slurry. The fiber lengths should be as long as possible to increase the effectiveness for erosion control. Wood fiber mulching should not be used in areas of extremely hot summer and late fall seasons because of fire danger. When used as a tackifier with straw mulch, wood fiber mulches are good for steep slopes and severe climates. The California Office of the Soils Conservation Service recommends a non-toxic mulch green dye be used to provide a visual aid in metering applications.

Wood Chips and Bark Chips: Wood and bark chips are suitable for application in landscaped areas that will not be closely mowed. Wood chips do not require tacking, but do require nitrogen treatment (12 pounds/ton) to prevent nutrient deficiency. Bark chips do not require additional nitrogen fertilizer. When the wood source is near the project site, wood and bark chips can be very inexpensive. Caution must be used in areas of steep slopes, since both wood and bark chips tend to wash down slopes exceeding 6 percent.

Straw Mulch: Straw mulch is a good short-term protection most commonly used with seeding. The mulch should be from the current season's crop. A letter of certification from the supplier should be required to show that the straw was baled less than 12 months from the delivery date. Wheat or oat straw is recommended.

Emulsified Asphalt: Asphalt is used to adhere the mulch to the ground surface, preventing the mulch from blowing or washing off. The type and quantity of asphalt used should not result in a storm water pollution problem.

Binder: Binder should be free flowing, noncorrosive powder produced from natural plant gum such as those marketed under M-Binder, M145 Binder, or AZ-TAC. Synthetic, spray-on materials are not recommended since they tend to create an impervious surface, and may enter the stormwater sewer system via discharge runoff.

ESC11

R0000533

Additional Information — Mulching

Preparations/Methods and Equipment

Straw Mulch: Should be applied in an even, uniform manner, either by hand or by mulch blowing equipment. Straw mulches must be anchored to prevent the mulch from being blown or washed off the site. Anchoring is achieved in two ways:

- Crimping: The mulch is anchored by running a heavy disc with flat, dull, serrated, closely-spaced blades over the mulched soil. Effective crimping embeds the mulch about 2 inches into the soil without completely covering it. The disc should be run once or twice across the soil. About 2 1/2 tons of straw mulch per acre should be applied if the mulch is anchored by crimping.
- Tacking: Achieved using a emulsified asphalt or binder either independently or followed by crimping. If tacked, straw mulch may be applied at a rate of 1 3/4 ton per acre, and tacked with emulsified asphalt at a rate of 500 gallons per acre.

Wood Fiber Mulch: Typically applied with a hydroseeder at a rate of about 1000 to 1500 pounds per acre, or as a slurry consisting of at least 150 pounds of binder, 400 pounds of wood fiber mulch, and 200 gallons of water per acre.

Requirements

Maintenance: Mulched areas require frequent inspection for damage and deterioration. Requirements will vary greatly based on the type of mulch used and the type of vegetation to be established. Vegetative mulches are usually not intended to be permanent; but are extended only as a base for re-seeding or re-vegetation. Where a permanent anchor for vegetation is required, along steep slopes or areas of higher velocity flows, then a geotextile mat or net is recommended (see ESC20).

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, September 1992.

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ESC11

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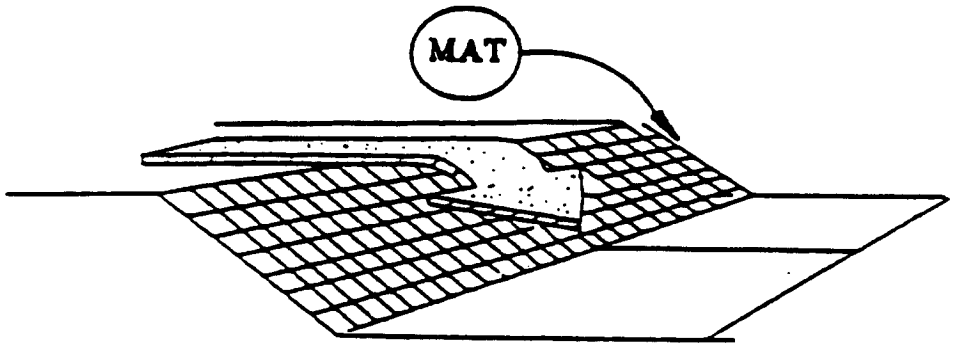
BMP: GEOTEXTILES AND MATS



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- **Stabilize Disturbed Areas**
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

Mattings made of natural or synthetic material which are used to temporarily or permanently stabilize soil.

SUITABLE APPLICATIONS

Typically suited for post-construction site stabilization, but may be used for temporary stabilization of highly erosive soils.

- Channels and streams.
- Steep slopes.

INSTALLATION/APPLICATION CRITERIA

Mattings may be applied to disturbed soils and where existing vegetation has been removed. The following organic matting materials provide temporary protection until permanent vegetation is established, or when seasonal circumstances dictate the need for temporary stabilization until weather or construction delays are resolved.

- Jute mattings.
- Straw mattings.

The following synthetic mattings may be used for either temporary or post-construction stabilization, both with and without vegetation

- Excelsior matting.
- Glass fiber matting.
- Staples.
- Mulch nettings.

REQUIREMENTS

- Maintenance
  - Inspect monthly and after significant rainfall.
  - Re-anchor loosened matting and replace missing matting and staples as required.
- Cost
  - Relatively high compared to other BMPs.

LIMITATIONS

- Mattings are more costly than other BMP practices, limiting their use to areas where other BMPs are ineffective (e.g., channels, steep slopes).
- May delay seed germination, due to reduction in soil temperature.
- Installation requires experienced contractor to ensure soil stabilization and erosion protection.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ● Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

● High ○ Low

ESC20

Best Management Practices

Additional Information — Geotextiles and Mats

Mattings are used to reduce erosion from rainfall impact, hold soil in place, and absorb and hold moisture near the soil surface. Additionally, mattings may be used to stabilize soils until vegetation is established. This practice may be used alone or with a mulch during the establishment of protective cover on critical slopes (see ESC11, Mulching).

Suitable Applications

Mattings are commonly applied on short, steep slopes where erosion hazard is high and vegetation will be slow to establish. Mattings are also used on stream banks where moving water at velocities between 3 fps and 6 fps is likely to wash out new vegetation, and in areas where the soil surface is disturbed and where existing vegetation has been removed. Matting may also be used when seeding cannot occur (e.g., late season construction and/or the arrival of an early rain season). Erosion control matting should be considered when the soils are fine grained and potentially erosive.

The following natural or synthetic mattings are commonly used:

Jute Mat - should be cloth of a uniform plain weave of undyed and unbleached single jute yarn, 48" in width, and weighing an average of 1.2 pounds per linear yard of cloth with a tolerance of plus or minus five (5) percent, with approximately 78 warp ends per width of cloth and 41 weft ends per linear yard of cloth. The yarn should be of a loosely twisted construction having an average twist of not less than 1.6 turns per inch and shall not vary in thickness by more than its normal diameter.

Straw Mat - should be a machine produced mat consisting of 70% (±3%) agricultural straw and 30% (±3%) coconut fiber. The blanket should be of consistent thickness with the straw and coconut fiber evenly distributed over the entire area of the mat. The blanket should be covered on the top side with polypropylene netting having an approximate 5/8" x 5/8" mesh containing ultraviolet additives to resist breakdown, and on the bottom with a polypropylene netting with an approximate " x " mesh. The blanket should be sewn together with cotton thread.

Excelsior Mat - should be wood excelsior, 48 inches in width plus or minus one inch and weighing 0.8 pound per square yard plus or minus ten percent. The excelsior material should be covered with a netting to facilitate handling and to increase strength.

Glass Fiber Matting - should be of bonded textile glass fibers with an average fiber diameter of eight to twelve microns, two to four inch strands of fiber bonded with phenol formaldehyde resin. Mat should be roll type, water permeable, minimum thickness inch, maximum thickness inch, density not less than three pounds per cubic foot.

Staples for anchoring soil stabilizing materials should be Number 11 gauge wire or heavier. Their length should be six to ten inches, with longer staples used in loose, unstable soils.

Other Mulch Netting - such as paper, plastic, cotton or fiber glass matting should be installed according to the manufacturer's recommendations.

Installation/Application Criteria

Organic matting materials have been found to be effective where re-vegetation will be provided by re-seeding. The choice of matting should be based on the size of area, side slopes, surface conditions such as hardness and moisture; weed growth and availability of materials. Matting strengths and uses vary, therefore, manufacturer's specifications must be followed. Proper installation of mattings is critical in order to obtain firm, continuous contact with the soil.

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Additional Information — Geotextiles and Mats

Site Preparation: After the site has been shaped and graded to the approved design, prepare a friable seed bed relatively free from clods and rocks more than 1 inches in diameter and any foreign material that will prevent contact of the protective mat with the soil surface.

Planting: Fertilize and seed in accordance with seeding specifications or other types of landscaping plans. When using jute matting on a seeded area, apply approximately half the seed before laying the mat and the remainder after laying the mat. The protective matting can be laid over areas where grass has been planted and the seedlings have emerged. Where vines or other ground covers are to be planted, lay the protective matting first and then plant through matting according to design of planting.

Erosion Stops: Erosion stops are made of glass fiber strips, excelsior matting strips or tight-folded jute matting blanket or strips for use on steep, highly erodible watercourses. The stops are placed in narrow trenches six to twelve inches deep across the channel and left flush with the soil surface. They are to cover the full cross section of designed flow.

Laying and Securing Matting: Before laying the matting, all erosion stops should be installed and the friable seed bed made free from clods, rocks, and roots. The surface upon which the separation fabric will be placed should be compacted and finished according to the requirements of the manufacturer's recommendations.

Most matting comes with the manufacturer's recommendations for installation. Most channels will require multiple widths of matting, and the matting should be unrolled starting at the upper end of the channel, allowing a four inch overlap of mattings along the center of the channel. To secure, bury the top ends of the matting in a narrow trench, a minimum of six inches deep. Backfill trench and tamp firmly to conform to channel cross section. Secure with a row of staples about four inches down slope from the trench with staples twelve inches apart.

Where matting crosses erosion stops, reinforce with a double row of staples at six inch spacing, using a staggered pattern on either side of the erosion stop. When the matting is overlapped, the discharge end of the matting liner should be similarly secured with a double row of staples.

Mechanical or manual laydown equipment should be capable of handling full rolls of fabric, and laying the fabric smoothly, without wrinkles or folds. The equipment should meet the fabric manufacturer's recommendations or equivalent standards.

Final Check: Check the following after the mating is installed:

- Make sure matting is uniformly in contact with the soil.
- All lap joints are secure.
- All staples are flush with the ground.
- All disturbed areas seeded.

Limitations

Properly installed mattings provide excellent erosion control but do so at relatively high cost. This high cost typically limits the use of mattings to areas of concentrated channel flow and steep slopes.

Installation is critical and requires experienced contractors. The contractor should install the matting material in such a manner that continuous contact between the material and the soil occurs, otherwise the material will not stabilize the soil and erosion will occur beneath the material. Ultraviolet protection may be required on some geotextiles. Matting strengths and uses vary; the manufacturer's specifications should be followed.

ESC20

Additional Information — Geotextiles and Mats

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, September 1992.

Guides for Erosion and Sediment Controls in California, USDA Soils Conservation Service - January 1991.

Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

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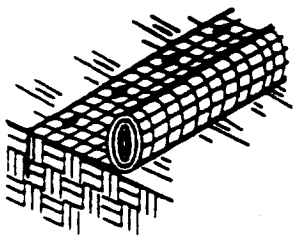
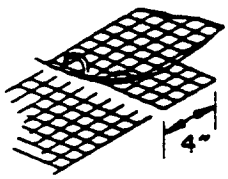
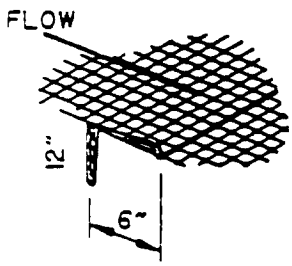


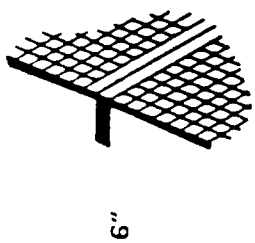
ANCHOR SLOT: BURY THE UP-CHANNEL END OF THE NET IN A 12" DEEP TRENCH. TAMP THE SOIL FIRMLY. STAPLE AT 12" INTERVALS ACROSS THE NET.



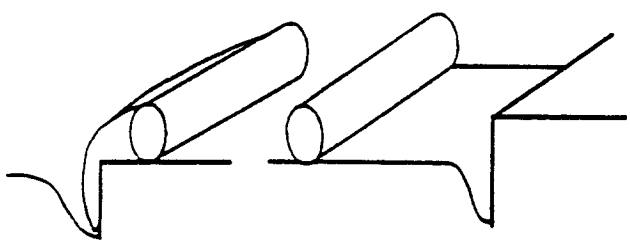
OVERLAP: OVERLAP EDGES OF THE STRIPS AT LEAST 4". STAPLE EVERY 12" DOWN THE CENTER OF THE STRIP.



JOINING STRIPS: INSERT THE NEW ROLL OR NET IN A TRENCH. AS WITH THE ANCHOR SLOT. OVERLAP THE UP-CHANNEL END OF THE PREVIOUS ROLL 18" AND TURN THE END OF THE PREVIOUS ROLL. JUST BELOW THE ANCHOR SLOT. LEAVING 6" OVERLAP.



CHECK SLOTS: ON ERODIBLE SOILS OR STEEP SLOPES. CHECK SLOTS SHOULD BE MADE EVERY 15 FEET. INSERT A FOLD OF THE NET INTO A 6" TRENCH AND TRAMP FIRMLY. STAPLE AT 12" INTERVALS ACROSS THE NET. LAY THE NET SMOOTHLY ON THE SURFACE OF THE SOIL - DO NOT STRETCH THE NET. AND DO NOT ALLOW WRINKLES.



ANCHORING ENDS AT STRUCTURES: PLACE THE END OF THE NET IN A 12" SLOT ON THE UP-CHANNEL SIDE OF THE STRUCTURE. FILL THE TRENCH AND TAMP FIRMLY. ROLL THE NET UP THE CHANNEL. PLACE STAPLES AT 12" INTERVALS ALONG THE ANCHOR END OF THE NET.

INSTALLATION OF NETTING AND MATTING

ESC20

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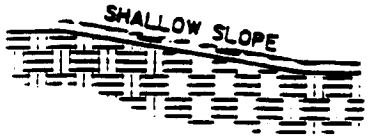
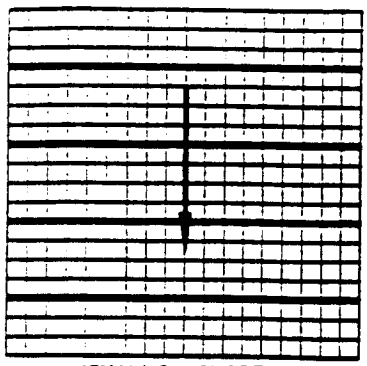
ON SHALLOW SLOPES, STRIPS OF NETTING MAY BE APPLIED ACROSS THE SLOPE.



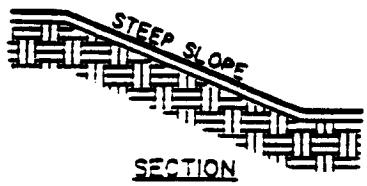
SECTION



(SHALLOW SLOPES)

PLAN

ON STEEP SLOPES, APPLY STRIPS OF NETTING PARALLEL TO THE DIRECTION OF FLOW AND ANCHOR SECURELY.



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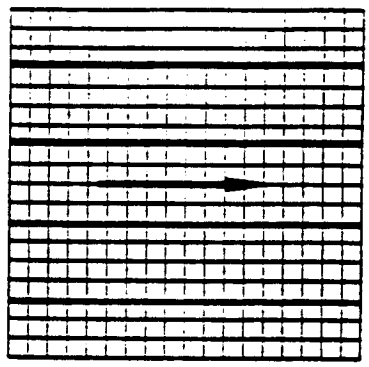
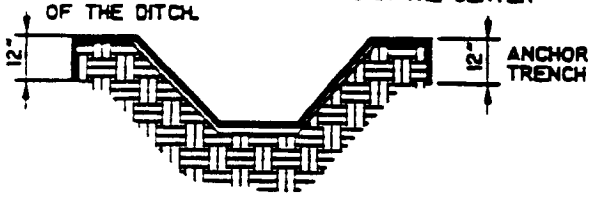


(STEEP SLOPES)

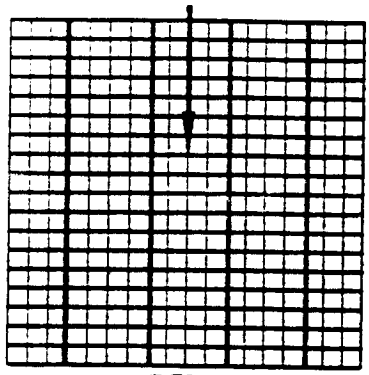
PLAN

IN DITCHES, APPLY NETTING PARALLEL TO THE DIRECTION OF FLOW. USE CHECK SLOTS EVERY 15 FEET. DO NOT JOIN STRIPS IN THE CENTER OF THE DITCH.



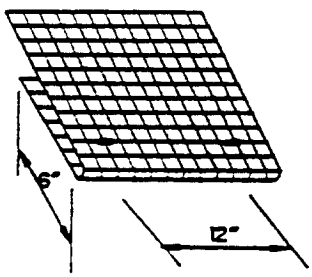
SECTION

FLOW

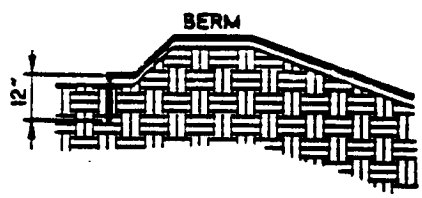


(DITCH)

PLAN



BRING NETTING DOWN TO A LEVEL BEFORE TERMINATING THE INSTALLATION. TURN THE END UNDER 6" AND STAPLE AT 12" INTERVALS.



WHERE THERE IS A BERM AT THE TOP OF THE SLOPE, BRING THE MATTING OVER THE BERM AND ANCHOR IT BEHIND THE BERM WITH A 12" ANCHOR TRENCH.

ESC20

ORIENTATION OF NETTING AND MATTING

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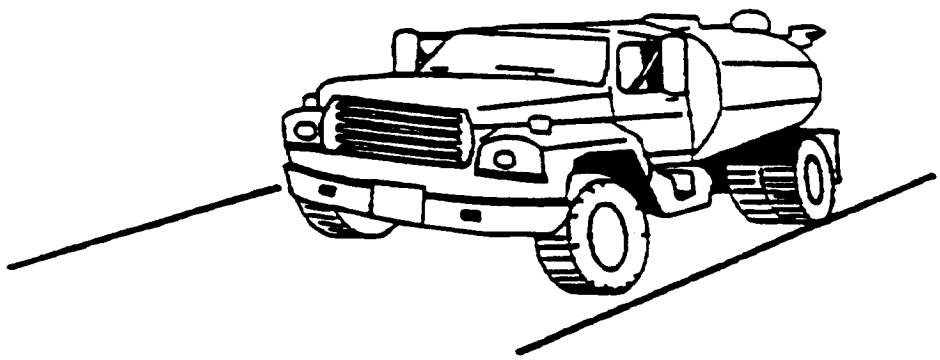
BMP: DUST CONTROLS



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

Dust control measures are used to stabilize soil from wind erosion, and reduce dust generated by construction activities.

SUITABLE APPLICATIONS

- Clearing and grading activities.
- Construction vehicle traffic on unpaved roads.
- Drilling and blasting activities.
- Sediment tracking onto paved roads.
- Soil and debris storage piles.
- Batch drop from front end loaders.
- Areas with unstabilized soil.
- Final grading/site stabilization usually is sufficient to control post-construction dust sources.

INSTALLATION/APPLICATION CRITERIA

- Schedule construction activities to minimize exposed area (See ESC 1).
- Quickly stabilize exposed soils using vegetation, mulching, spray-on adhesives, calcium chloride, sprinkling, and stone/gravel layering (See ESC 10 and 11).
- Identify and stabilize key access points prior to commencement of construction (See ESC 24).
- Minimizing the impact of dust by anticipating the direction of prevailing winds.
- Direct most construction traffic to stabilized roadways within the project site (See ESC 23).

REQUIREMENTS

- Maintenance
  - Most dust control measures require frequent, often daily, attention.
- Cost
  - Installation costs for water/chemical dust suppression are low, but annual costs may be quite high since these measures are effective for only a few hours to a few days.

LIMITATIONS

- Watering prevents dust only for a short period and should be applied daily (or more often) to be effective.
- Overwatering may cause erosion.
- Oil should not be used for dust control because the oil may migrate into drainageway and/or seep into the soil.
- Certain chemically-treated subgrades may make soil water repellant, increasing runoff.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

ESC21

Best Management Practices

Additional Information — Dust Controls

California's mediterranean climate, with short wet seasons and long hot dry seasons, allow the soils to thoroughly dry out. During these dry seasons, construction activities are at their peak, and disturbance and exposed areas are increasingly subject to wind erosion, sediment tracking and dust generated by construction equipment.

Dust control, as a BMP, is a practice that is already in place for many construction activities. Los Angeles, the North Coast and Sacramento, among others have enacted dust control ordinances for construction activities that cause dust to be transported beyond the construction project property line. Recently, the State Air Resources Control Board has, under the authority of the Clean Air Act, started to address air quality in relation to inhalable particulate matter less than 10 microns (PM-10). 90% of these small particles are considered to be dust. Existing dust control regulations by local agencies, municipal departments, public works department, and/or public health departments are in place in some regions within California. For jurisdictions that have no formal dust control regulations and/or standards, Sections 10, 17 and 18 of CalTrans' Standard Specifications provide detailed provisions for dust control practices.

Many local agencies require dust control in order to comply with local nuisance laws, opacity laws (visibility impairment) and the requirements of the Clean Air Act. The following are measures that local agencies may have already implemented as requirements for dust control from contractors:

- Construction & Grading Permits: Require provisions for dust control plans;
- Opacity Emission Limits: Enforce compliance with California air pollution control laws;
- Increase overall enforcement activities: Priority given to cases involving citizen complaints;
- Maintain Field Application Records: Require records of dust control measures from contractor;
- Stormwater Pollution Prevention Plan: (SWPPP): Integrate dust control measures into SWPPP.

Dust Control Practices

Dust control BMP's generally stabilize exposed surfaces and minimize activities that suspend or track dust particles. Table ESC21.1 shows which Dust Control BMPs apply to site conditions which cause dust. For heavily traveled and disturbed areas, wet suppression (watering), chemical dust suppression, gravel or asphalt surfacing, temporary gravel construction entrances, equipment wash-out areas, and haul truck covers can be employed as dust control applications. Permanent or temporary vegetation and mulching and sand fences can be employed for areas of occasional or no construction traffic. Preventive measures would include minimizing surface areas to be disturbed, limiting on-site vehicle traffic to 15 miles per hour, and controlling the number and activity of vehicles on a site at any given time.

Many of the reasonably available control measures for controlling dust from construction sites can also be implemented as BMPs for storm water pollution prevention. Those BMPs include:

- Pave, vegetate, or chemically stabilize access points where unpaved traffic surfaces adjoin paved roads.
- Provide covers for haul trucks transporting materials that contribute to dust.
- Provide for wet suppression or chemical stabilization of exposed soils.
- Provide for rapid clean-up of sediments deposited on paved roads. Furnish stabilized construction road entrances and vehicle wash down areas.
- Stabilize unpaved haul roads, parking and staging areas. Reduce speed and trips on unpaved roads.
- Implement dust control measures for material stockpiles.
- Prevent drainage of sediment laden storm water onto paved surfaces.
- Stabilize abandoned construction sites using vegetation or chemical stabilization methods.
- Limit the amount of areas disturbed by clearing and earth moving operations by scheduling these activities in phases.

For the chemical stabilization, there are many products available for chemically stabilizing gravel roadways and stockpiles. The types of chemicals available and recommendations for their use are tabulated in Table ESC 21.2, Commonly Used Chemicals for Dust Control.

ESC21

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Additional Information — Dust Controls

In addition, there are many other BMPs identified in this handbook that provide dust control including:

- Seeding and Plantings (ESC 10)
- Mulching (ESC 11)
- Construction Road Stabilization (ESC 23)
- Stabilized Construction Entrances (ESC 24)

Limitations

- Oil treated subgrades should not be used because the oil may migrate into drainageways and/or seep into the soil.
- Chemically treated subgrades may make the soil water repellant, interfering with long-term infiltration, and the vegetation/re-vegetation of the site. Some chemical dust suppressants may be subject to freezing and may contain solvents and should be handled properly.
- Asphalt, as a mulch tack or chemical mulch, requires a 24 hour curing time to avoid adherence to equipment, worker shoes, etc. Application should be limited because asphalt surfacing may eventually migrate into the drainage system.
- In compacted areas, watering and other liquid dust control measures may wash sediment or other constituents into the drainage system.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

California Air Pollution Control Laws, California Air Resources Board, 1992.

CalTrans, Standard Specifications, Sections 10, "Dust Control"; Section 17, "Watering"; and Section 18, "Dust Palliative".

Prospects for Attaining the State Ambient Air Quality Standards for Suspended Particulate Matter (PM10), Visibility Reducing Particles, Sulfates, Lead, and Hydrogen Sulfide, California Air Resources Board, April 1991.

Sacramento County, Winterization Ordinance & Dust Control Ordinance (example).

USDA Soil Conservation Service, "Guides for Erosion and Sediment Control".

ESC21

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TABLE ESC 21.1 DUST CONTROL BMPs FOR GIVEN SITE CONDITIONS

SITE CONDITION	DUST CONTROL BMPs								
	Permanent Vegetation	Mulching	Wet Suppression (Watering)	Chemical Dust Suppression	Gravel or Asphalt Surfacing	Sand Fences	Temporary Gravel Construction Entrances/Equipment Wash Down	Haul Truck Covers	Minimize Extent of Area Disturbed
Disturbed Areas not Subject to Traffic	X	X	X	X	X				X
Disturbed Areas Subject to Traffic			X	X	X				X
Material Stock Pile Stabilization			X	X		X			X
Demolition			X				X	X	
Clearing/Excavation			X	X					X
Truck Traffic on Unpaved Roads			X	X	X			X	
Mud/Dirt Carry-Out					X		X		

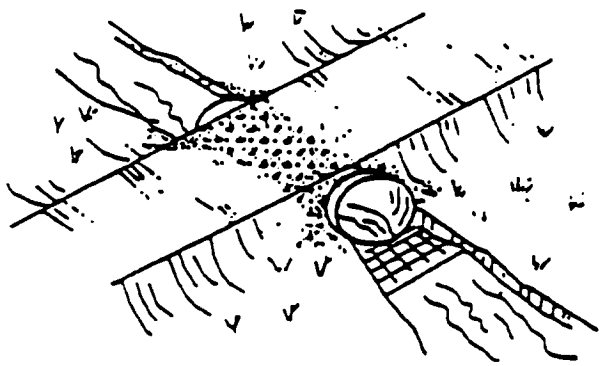
TABLE ESC 21.2 COMMONLY USED CHEMICALS FOR DUST CONTROL

	SALTS	ORGANIC, NON PETROLEUM-BASED	PETROLEUM BASED PRODUCTS[1]
CHEMICAL TYPES	• Calcium Chloride[2] • Magnesium Chloride • Natural Brines	• Calcium Lignosulfonate • Sodium Lignosulfonate • Ammonium Lignosulfonate	• Bunker Oil • Asphalt Primer • Emulsified Asphalt
LIMITATIONS	Can lose effectiveness in dry periods with low humidity. Leaches from road in heavy rain Not recommended for gravel road surfaces with low fines. Recommended 10-20% fines.	Not affected by dry weather and low humidity. Leached from road in heavy rain if not sufficiently cured. Best performance on gravel roads with high surface fines (10-30%) and dense compact surface with loose gravel.	Generally effective regardless of climatic conditions may pothole in wet weather. Best performance on gravel roads with 5-10% fines.
COMMENTS	Calcium Chloride is popular. May become slippery when wet on gravel surfaces with high fines.	Ineffective on gravel surfaces low in fines. May become slippery when wet on gravel surfaces with high fines content.	Creates a hardened crust.

[1] Motor oils and oil treatments are not recommended due to adverse effects on plant life and groundwater.

[2] Not recommended due to adverse effects on plant life.

BMP: TEMPORARY STREAM CROSSING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

A temporary access stream crossing is a temporary culvert, ford or bridge placed across a waterway to provide access for construction purposes for a period of less than one year. Temporary access crossings are not intended to be used to maintain traffic for the general public.

SUITABLE APPLICATIONS

Temporary stream crossings should be installed at all designated crossings of perennial and intermittent streams on the construction site, as well as for dry channels which may be significantly eroded by construction traffic.

INSTALLATION/APPLICATION CRITERIA

Requires knowledge of stream flows and soil strength and should be designed under the direction of a California registered engineer with knowledge of both hydraulics and construction loading requirements for structures.

REQUIREMENTS

- Maintenance
  - Inspect weekly and after each significant rainfall, including assessment of foundations.
  - Periodically remove silt from crossings.
  - Replace lost aggregate from inlets and outlets of culverts.
- Cost
  - CalTrans Construction Cost Index for temporary bridge crossing is $45-$95 per square feet.

LIMITATIONS

- May be an expensive for a temporary improvement.
- Requires other BMPs to minimize soil disturbance during installation and removal.
- Fords should only be used in dry weather.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

ESC22

Best Management Practices

Additional Information — Temporary Stream Crossing

A temporary access stream crossing is a culvert, ford, or bridge placed across a waterway to provide access for construction for a period of less than one year. Temporary access crossings are not intended to be used for general public traffic.

The purpose of this BMP is to provide a safe, erosion-free access across a stream for construction equipment. Minimum standards and specifications for the design, construction, maintenance, and removal of the structure should be established by an engineer registered in California. Temporary stream crossings may be necessary to prevent construction equipment from causing erosion of the stream and tracking sediment and other pollutants into the stream.

Temporary stream crossings are used as access points to construction sites when other detour routes may be too long or burdensome for the construction equipment. Often heavy construction equipment must cross streams or creeks, and detour routes may impose too many constraints such as being too narrow or poor soil strength for the equipment loadings. Additionally, the contractor may find a temporary stream crossing more economical for light-duty vehicles to use for frequent crossings, and may have less environmental impact than construction of a temporary access road.

Installation/Application

Temporary access stream crossings should be sized and installed according to the drainage design criteria of the local municipality. Design criteria should be based on standard engineering practices for culvert design with provisions for minimizing impacts on disturbed crossing areas. Three types of temporary access stream crossings may be considered:

Temporary Access Culvert: A temporary access culvert is effective in controlling erosion but will cause erosion during installation and removal. A temporary culvert can be easily constructed and allows for heavy equipment loads.

Temporary Access Ford: A temporary access ford provides little sediment and erosion control and is ineffective in controlling erosion in the stream channel. A temporary ford is the least expensive stream crossing and allows for maximum load limits. It also offers very low maintenance. Fords are more appropriate during the dry season and in arid areas of California.

Temporary Access Bridge: With the appropriate materials and designs, a temporary access bridge causes the least erosion of the stream channel crossing during its installation and removal.

During the long summer construction season in California, rainfall is infrequent and many streams are dry. Under these conditions, a temporary access ford may be sufficient. A ford is not appropriate if construction will continue through the winter rainy season, if summer thunderstorms are likely, or if the stream flows during most of the year. Temporary access culverts and bridges should then be considered and, if used, should be sized to pass a significant design storm (i.e., at least a 10-year storm). The temporary stream crossing should be protected against erosion, both to prevent excessive sedimentation in the stream and to prevent washout of the crossing (and, consequently, costly construction delays).

Limitations

Special care must be taken when crossing an environmentally sensitive waterway. Oils or other potentially hazardous materials shall not be used for surface treatments. Street runoff should not be allowed to spill down crossing sideslopes. Construction in watercourses should be at or near the natural elevation of the stream bed to prevent any potential flooding upstream of the crossing. In addition, the following limitations may apply:

ESC22

R0000547

Additional Information — Temporary Stream Crossing

- May be expensive temporary cost
- Increased soil disturbance upon installation and removal
- Temporary culverts need regular maintenance and can cause erosion if the culvert becomes clogged.
- A temporary ford offers little if any erosion control in flowing streams and can often make erosion worse. Fords should only be used in the dry season on dry streams.

Construction in waterways is subject to additional permit requirements. Contact the local municipal storm water agency for additional information.

REFERENCES

Bank and Shore Protection, CalTrans - November 1970.

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September, 1992.

ESC22

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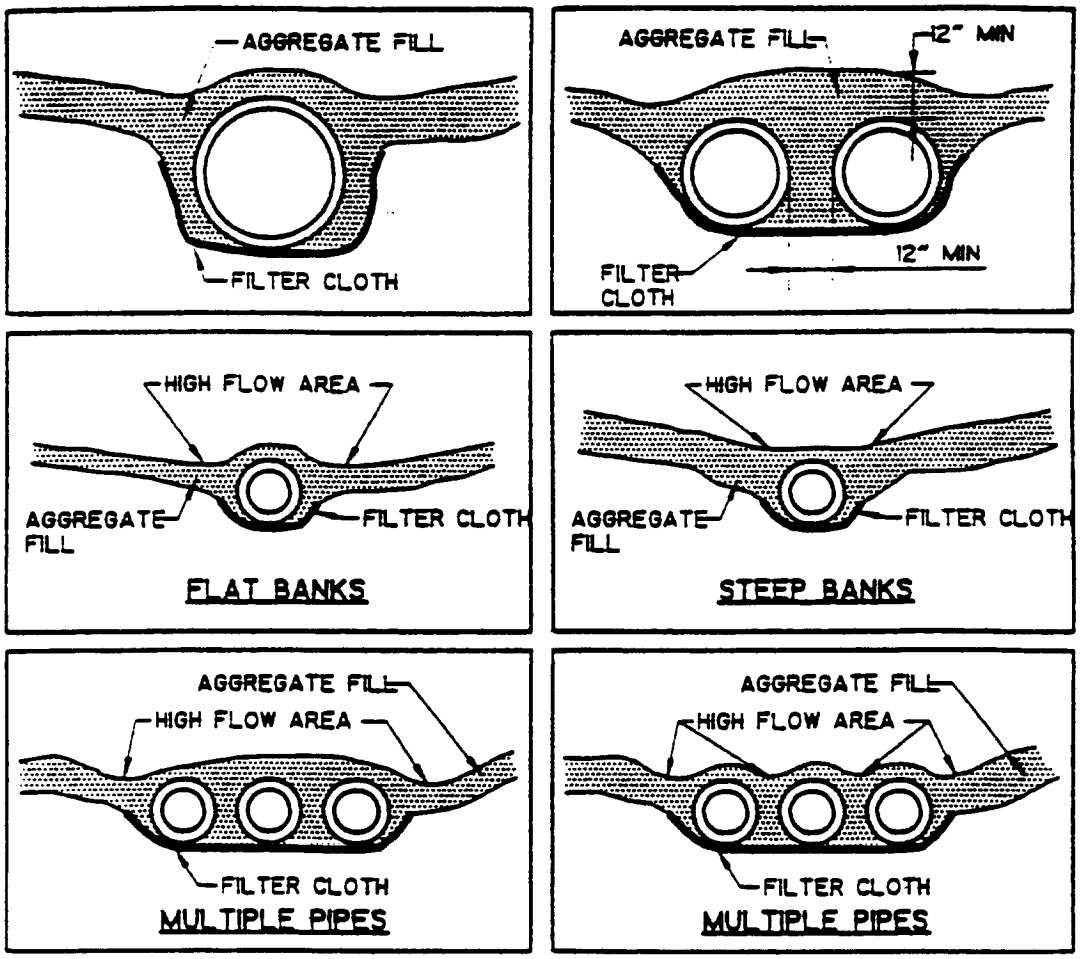
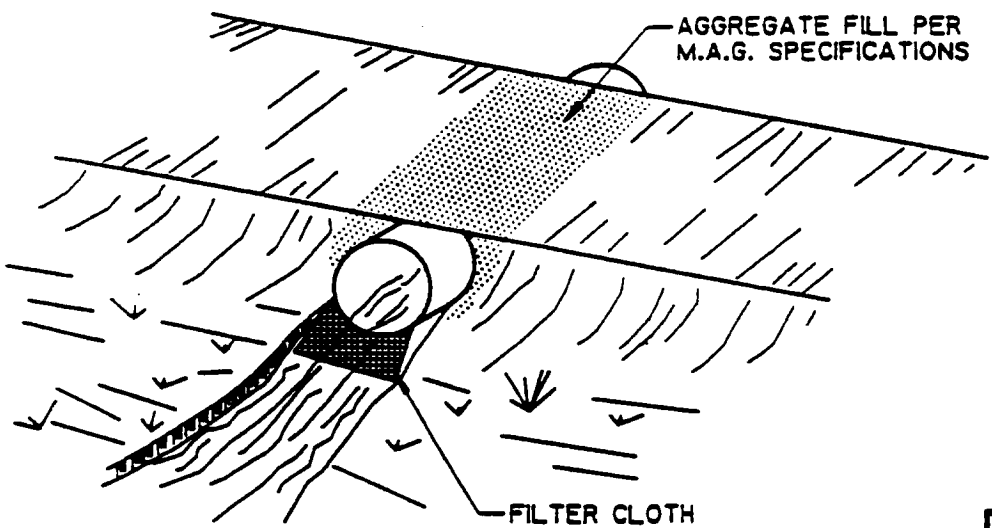
Additional Information — Temporary Stream Crossing





TEMPORARY ACCESS CULVERT

ESC22

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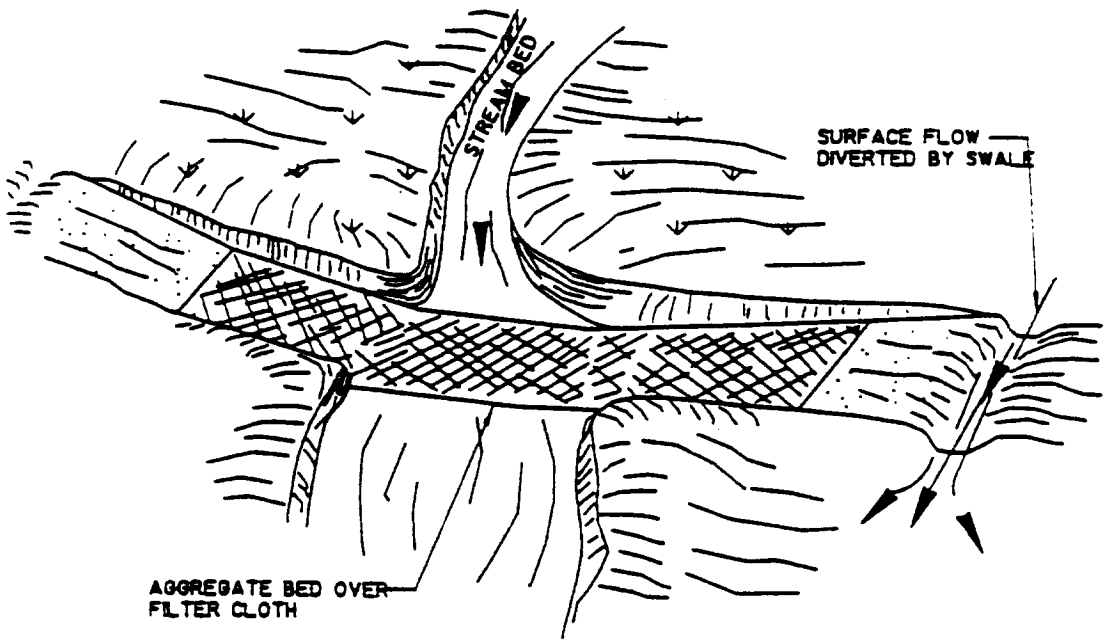
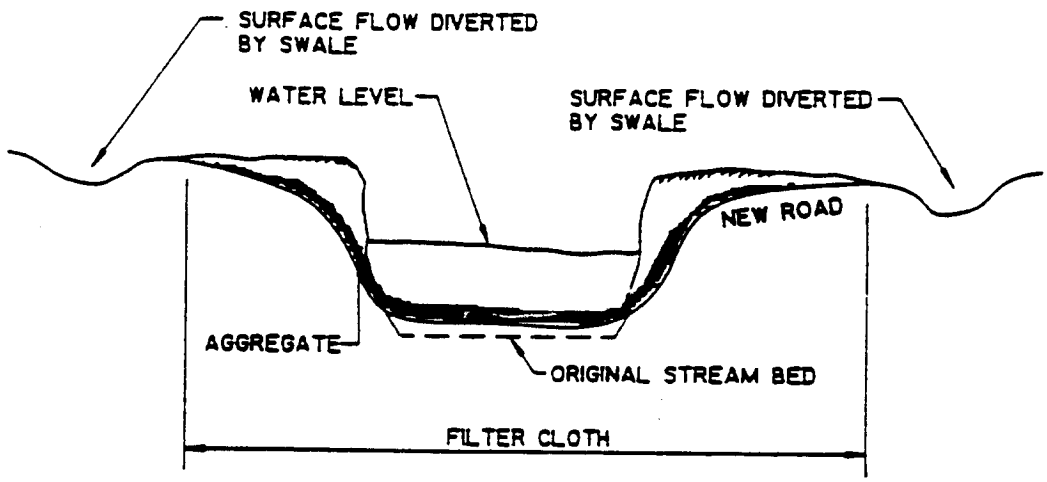
Additional Information — Temporary Stream Crossing



AGGREGATE APPROACH
5 : 1 MAXIMUM SLOPE ON ROAD

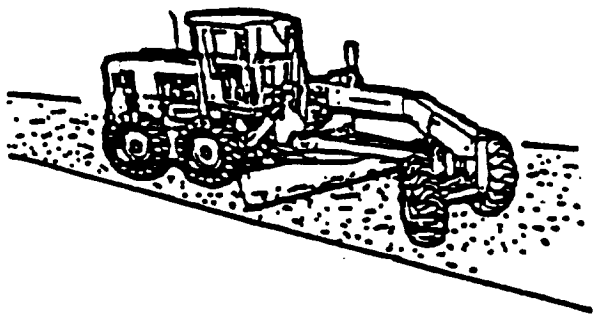


TEMPORARY ACCESS FORD

ESC22

R0000550

BMP: CONSTRUCTION ROAD STABILIZATION



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

Access roads, subdivision roads, parking areas, and other on-site vehicle transportation routes should be stabilized immediately after grading and frequently maintained to prevent erosion and control dust.

SUITABLE APPLICATIONS

- Temporary construction traffic.
- Phased construction projects and off-site road access.
- Detour roads.
- Construction during wet weather.

INSTALLATION/APPLICATION CRITERIA

- Road should follow topographic contours to reduce erosion of the roadway.
- The roadway slope should not exceed 15 percent.
- Gravel roads should be a minimum 4-inch thick, 2-3 inch coarse aggregate base applied immediately after grading, or as recommended by soils engineer.
- Chemical stabilizers or water are usually required on gravel or dirt roads to prevent dust (see Dust Control ESC 21).

REQUIREMENTS

- Maintenance
  - Periodically apply additional aggregate on gravel roads.
  - Active dirt construction roads are commonly watered three or more times per day during the dry season.
  - Inspect weekly, and after each rain.
  - Repair any eroded areas immediately.
- Cost
  - Gravel construction roads are moderately expensive, but cost is often balanced by reductions in construction delay.
  - No additional costs for dust control on construction roads should be required above that needed to meet local air quality requirements.

LIMITATIONS

- The roadway must be removed or paved when construction is complete.
- Certain chemical stabilization methods may cause storm water or soil pollution and should not be used (see Dust Control ESC 21).
- Management of construction traffic is subject to air quality control measures. Contact the local air quality management agency.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

ESC23

Best Management Practices

Additional Information — Construction Road Stabilization

Areas which are graded for construction vehicle transport and parking purposes are especially susceptible to erosion and dust. The exposed soil surface is continually disturbed, leaving no opportunity for vegetative stabilization. Such areas also tend to collect and transport runoff waters along their surfaces. During wet weather, they often become muddy quagmires which generate significant quantities of sediment that may pollute nearby streams or be transported off-site on the wheels of construction vehicles. Dirt roads can become so unstable during wet weather that they are virtually unusable.

Efficient construction road stabilization not only reduces on-site erosion but can significantly speed on-site work, avoid instances of immobilized machinery and delivery vehicles, and generally improve site efficiency and working conditions during adverse weather.

Installation/Application Criteria

Where feasible, alternative routes should be made for construction traffic; one for use in dry condition, the other for wet conditions which incorporate the measures listed for this BMP. Permanent roads and parking areas should be paved as soon as possible after grading. As an alternative where construction will be phased, the early application of gravel or chemical stabilization may solve potential erosion and stability problems. Temporary gravel roadway should be considered during the rainy season and/or on slopes greater than 5 percent.

When gravel road is needed, apply a minimum 4-inch course of 2 to 4-inch crushed rock, gravel base, or crushed surfacing base course immediately after grading or the completion of utility installation within the right-of-way. Chemical stabilization may also be used upon compacted native sub-grade (see the Dust Control BMP ESC 21). These chemical controls should be applied per the manufacturer's directions.

Temporary roads should follow the contour of the natural terrain to the maximum extent possible. Slope should not exceed 15 percent. Roadways should be carefully graded to drain transversely. Provide drainage swales on each side of the roadway in the case of a crowned section, or one side in the case of super-elevated section. Simple gravel berms without a trench can also be used.

Installed inlets should be protected to prevent sediment-laden water from entering the storm sewer system (see "Storm Drain Inlet Protection" ESC 54).

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September1992.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, June1981.

Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

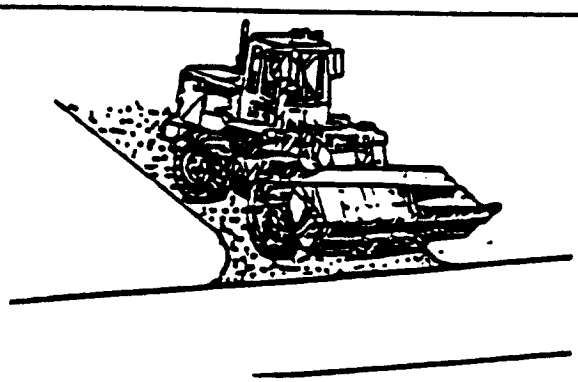
Virginia Erosion and Sedimentation Control Handbook, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, 1991.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC23

R0000552

BMP: STABILIZED CONSTRUCTION ENTRANCE



GENERAL DESCRIPTION

The construction entrance practice is a stabilized pad of aggregate underlain with filter cloth located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk or parking area. Stabalizing the construction entrance significantly reduces the amount of sediment (dust, mud) tracked off-site, especially if a washrack incorporated for removing caked on sediment.

SUITABLE APPLICATIONS

- All points of construction ingress and egress.
- Unpaved areas where sediment tracking occurs from site onto paved roads.

INSTALLATION/APPLICATION CRITERIA

- Construct on level ground where possible.
- Stones should be 1-3 inches.
- Minimum depth of stones should be 6 inches or as recommended by soils engineer.
- Length should be 50-foot minimum, and 30-foot minimum width.
- Provide ample turning radii as part of entrance.

REQUIREMENTS

- Maintenance
  - Inspect monthly and after each rainfall.
  - Replace gravel material when surface voids are visible.
  - Remove all sediment deposited on paved roadways within 24 hours.
  - Remove gravel and filter fabric at completion of construction
- Cost: Average annual cost for installation and maintenance (Source: EPA, 1992)
  - Without Wash Rack: $1500 each.
  - With Wash Rack: $2200 each.

LIMITATIONS

- Requires periodic top dressing with additional stones.
- Should be used in conjunction with street sweeping on adjacent public right-of-way.

Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ◒ Sediment
- ◒ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

ESC24

Best Management Practices

Additional Information — Stabilized Construction Entrance

A stabilized construction entrance is a pad of aggregate underlain with filter cloth located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets. Reducing trackout of sediments and other pollutants onto paved roads helps prevent deposition of sediments into local storm drains and production of airborne dust.

Where traffic will be entering or leaving, a stabilized construction entrance should be used at all points of construction ingress and egress. NPDES permits require that appropriate measures be implemented to prevent trackout of sediments onto paved roadways, which is a significant source of sediments derived from mud and dirt carryout from the unpaved roads and construction sites.

Stabilized construction entrances are moderately effective in removing sediment from equipment leaving a construction site. The entrance should be build on the level ground. Advantages of the Stabilized Construction Entrance is that it does remove some sediment from equipment and serves to channel construction traffic in and out of the site at specified locations. Efficiency is greatly increased when a washing rack is included as part of a stabilized construction entrance.

The aggregate for a stabilized construction entrance aprons should be 1 to 3 inches in size, washed, well-graded gravel or crushed rock. Minimum apron dimensions of 30 ft. x 50 ft. and 6 inches deep is adequate for two-way ingress/egress traffic.

The entrance must be properly graded to prevent runoff from leaving the construction site.
When wash areas are provided, washing is done on a reinforced concrete pad (if significant washing is necessary) or in an area stabilized with crushed stone which drains into a properly constructed sediment trap or basin (ESC 55 and 56). Sediment barriers are provided to prevent sediments from entering into the stormwater sewer system, ditch, or waterway.

Limitations

- Construct on level ground.
- Stabilized construction entrances are rather expensive to construct and when a wash rack is included, a sediment trap of some kind must also be provided to collect wash water runoff.
- Requires periodic top dressing with additional stones.
- Should be used in conjunction with street sweeping on adjacent public right-of-way.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, June 1981.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April, 1992.

Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

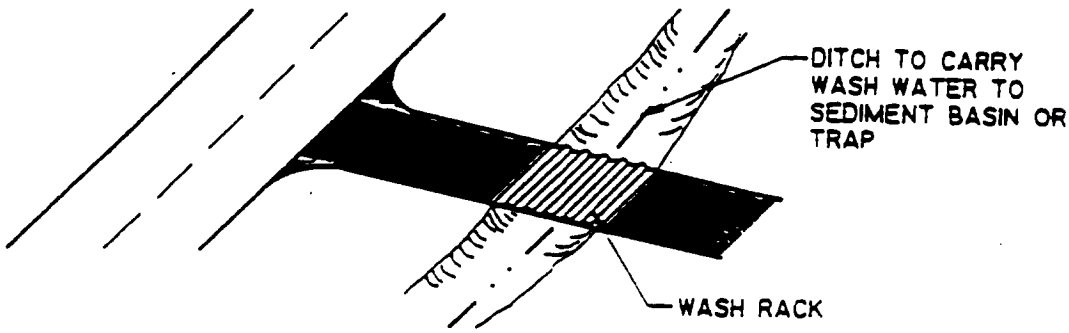
Virginia Erosion and Sedimentation Control Handbook, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, 1991.

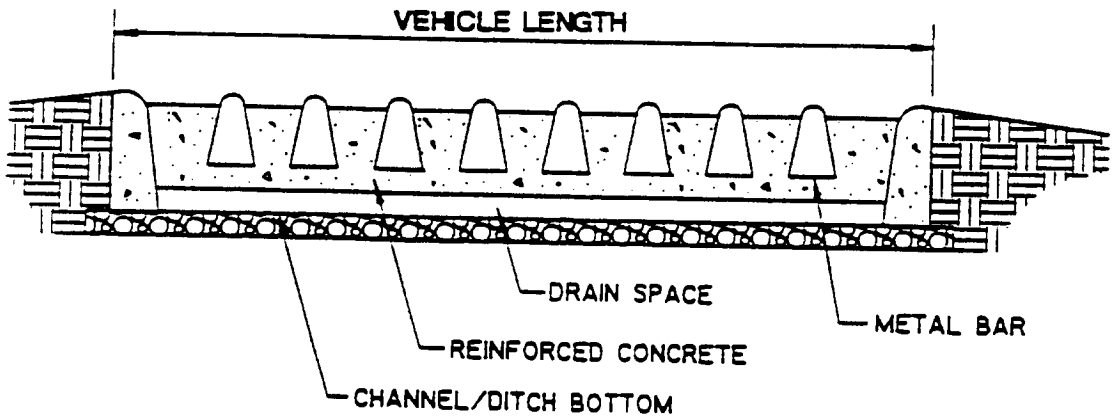
Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC24

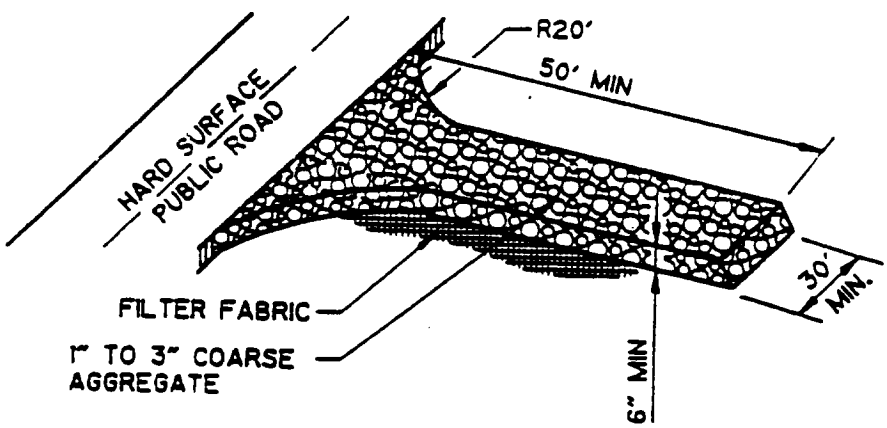
R0000554

Additional Information — Stabilized Construction Entrance





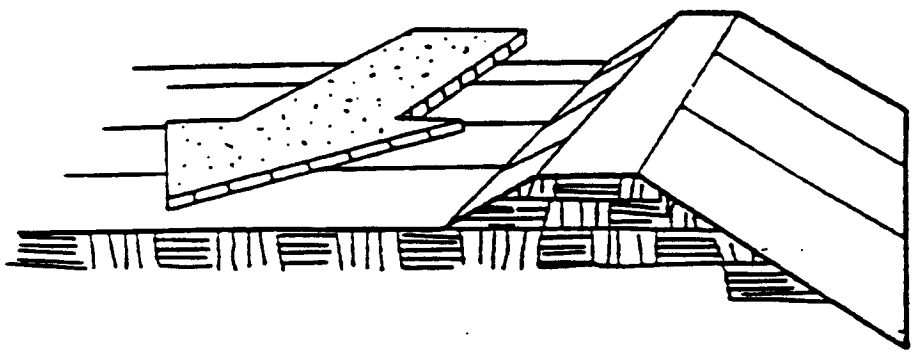
WASH RACK (SCHEMATIC)



STABILIZED CONSTRUCTION ENTRANCE

ESC24

BMP: EARTH DIKE



Objectives

- Housekeeping Practices
- **Contain Waste**
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- **Protect Slopes/Channels**
- **Control Site Perimeter**
- **Control Internal Erosion**

GENERAL DESCRIPTION

The temporary earth dike is a temporary berm or ridge of compacted soil, used to divert runoff or channel water to a desired location.

SUITABLE APPLICATIONS

Earth dikes are typically used to divert concentrated runoff through disturbed areas into another BMP (e.g., sediment basins), to divert runoff away from disturbed or unstable slopes, to divert runoff from off-site and undisturbed areas around disturbed areas, and as a containment for construction materials and wastes. The dikes should remain in place until the disturbed areas are permanently stabilized. The dikes must be on-site and must safely convey anticipated flood flows.

INSTALLATION/APPLICATION CRITERIA

- All dikes should be compacted by earth-moving equipment.
- All dikes should have positive drainage to a stabilized outlet.
- Top width may be wider and side slopes may be flatter at crossings for construction traffic.
- Dikes should direct sediment-laden runoff into a sediment trapping device.
- Dikes should be stabilized with vegetation, chemicals, or physical devices.

REQUIREMENTS

- Maintenance
  - Inspect periodically and after every significant rainfall; repair as necessary.
- Cost
  - Cost ranges from $15 to $55 per foot for both earthwork and stabilization and depends on availability of material, site location, and access.

LIMITATIONS

Dikes should not be used for drainage areas greater than 10 acres, or along slopes greater than 10 percent. For larger areas more permanent drainage structures should be built. All drainage structures should be built in compliance with local municipal requirements.

- Earth dikes may create more disturbed area on site and become barriers to construction equipment.
- Earth dikes must be stabilized immediately, which adds cost and maintenance concerns.
- Diverted storm water may cause downstream flood damage.
- Dikes should not be constructed of soils which may be easily eroded.
- Regrading the site to remove the dike may add additional cost.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ◒ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

ESC30

Best Management Practices

Additional Information — Earth Dike

The temporary earth dike is a berm or ridge of compacted soil, located in such a manner as to divert storm water to a sediment trapping device or stabilized outlet, thereby reducing the potential for erosion and offsite sedimentation. Earth dikes can also be used to divert runoff from off-site and from undisturbed areas away from disturbed areas, and to divert sheet flows away from unprotected slopes.

An earth dike does not itself control erosion or remove sediment from runoff; a dike prevents erosion by directing runoff to an erosion control device such as a sediment trap or directing runoff away from an erodible area. Temporary diversion dikes should not adversely impact adjacent properties and must conform to local floodplain management regulations, and should not be used in areas with slopes steeper than 10%.

- The advantages of the temporary earth dike include the ability to handle flows from large drainage areas.
- Once stabilized, earth dikes require relatively little maintenance. Additionally, the earth dikes are relatively inexpensive to install since the soil material required for construction may be available on-site, and can be constructed as part of the initial grading operations, while the equipment is on-site.
- Uses on-site materials.

Installation/Application Criteria

Temporary earth dikes are a practical, inexpensive BMP used to divert storm water runoff. Temporary diversion dikes should be installed in the following manner:

1. All dikes should be compacted by earth-moving equipment.
2. All dikes should have positive drainage to an outlet.
3. All dikes should have 2:1 side slopes, 18 inches minimum height, and a minimum top width of 24 inches. Top width may be wider and side slopes may be flatter at crossings for construction traffic.
4. The outlet from the earth dike must function with a minimum of erosion. Runoff should be conveyed to a sediment trapping device such as a sediment trap (ESC 55) or sediment basin (ESC 56)when either the dike channel or the drainage area above the dike are not adequately stabilized.
5. Temporary stabilization may be achieved using seed and mulching for slopes less than 5%, and either rip-rap or sod for slopes in excess of 5%. In either case, stabilization of the earth dike should be completed immediately after construction or prior to the first rain.
6. If riprap is used to stabilize the channel formed along the toe of the dike, the following typical specifications apply:

CHANNEL GRADE	RIPRAP STABILIZATION
0.5-1.0%	4" Rock
1.1-2.0%	6" Rock
2.1-4.0%	8" Rock
4.1-5.0%	8-12" Riprap

7. The stone riprap, recycled concrete, etc. used for stabilization should be pressed into the soil with construction equipment.
8. Filter cloth may be used to cover dikes in use for long periods.
9. Construction activity on the earth dike should be kept to a minimum.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

"Draft - Sedimentation and Erosion Control, An Inventory of Current Practices", U.S.E.P.A., April, 1990.

ESC30

R0000557

Additional Information — Earth Dike

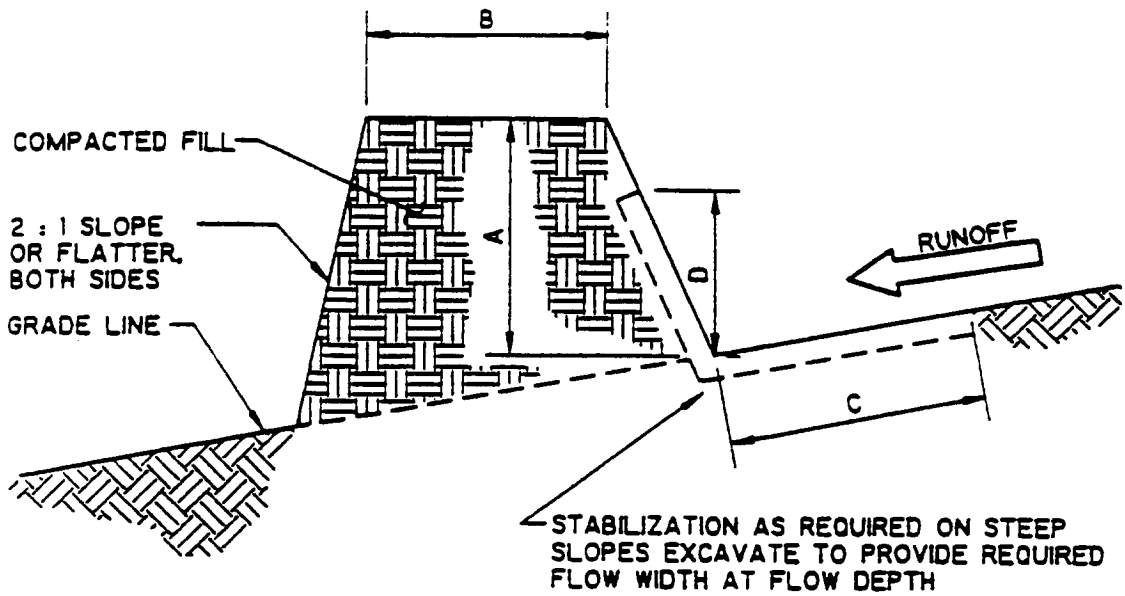
Erosion and Sediment Control Handbook, S.J. Goldman, K. Jackson, T.A. Bursetynsky, P.E., McGraw Hill Book Company.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, June 1981.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC30

Additional Information — Earth Dike



REQUIREMENTS BASED ON UPSTREAM DRAINAGE AREA

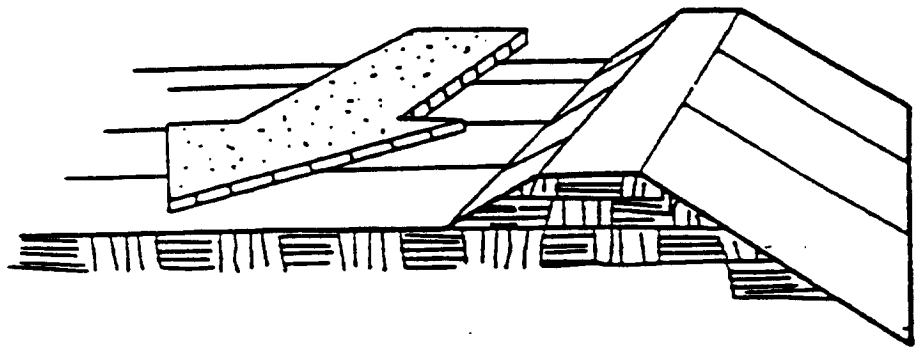
	DIKE 1 (5 ACRES OR LESS)	DIKE 2 (5-10 ACRES)
A-DIKE HEIGHT	18"	36"
B-DIKE WIDTH	24"	36"
C-FLOW WIDTH	4'	6'
D-FLOW DEPTH	8"	15"

TEMPORARY DIVERSION DIKE

ESC30

R0000559

BMP: EARTH DIKE



Objectives

- Housekeeping Practices
- **Contain Waste**
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- **Protect Slopes/Channels**
- **Control Site Perimeter**
- **Control Internal Erosion**

GENERAL DESCRIPTION

The temporary earth dike is a temporary berm or ridge of compacted soil, used to divert runoff or channel water to a desired location.

SUITABLE APPLICATIONS

Earth dikes are typically used to divert concentrated runoff through disturbed areas into another BMP (e.g., sediment basins), to divert runoff away from disturbed or unstable slopes, to divert runoff from off-site and undisturbed areas around disturbed areas, and as a containment for construction materials and wastes. The dikes should remain in place until the disturbed areas are permanently stabilized. The dikes must be on-site and must safely convey anticipated flood flows.

INSTALLATION/APPLICATION CRITERIA

- All dikes should be compacted by earth-moving equipment.
- All dikes should have positive drainage to a stabilized outlet.
- Top width may be wider and side slopes may be flatter at crossings for construction traffic.
- Dikes should direct sediment-laden runoff into a sediment trapping device.
- Dikes should be stabilized with vegetation, chemicals, or physical devices.

REQUIREMENTS

- Maintenance
  - Inspect periodically and after every significant rainfall; repair as necessary.
- Cost
  - Cost ranges from $15 to $55 per foot for both earthwork and stabilization and depends on availability of material, site location, and access.

LIMITATIONS

Dikes should not be used for drainage areas greater than 10 acres, or along slopes greater than 10 percent. For larger areas more permanent drainage structures should be built. All drainage structures should be built in compliance with local municipal requirements.

- Earth dikes may create more disturbed area on site and become barriers to construction equipment.
- Earth dikes must be stabilized immediately, which adds cost and maintenance concerns.
- Diverted storm water may cause downstream flood damage.
- Dikes should not be constructed of soils which may be easily eroded.
- Regrading the site to remove the dike may add additional cost.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ◒ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

ESC30

Best Management Practices

Additional Information — Earth Dike

The temporary earth dike is a berm or ridge of compacted soil, located in such a manner as to divert storm water to a sediment trapping device or stabilized outlet, thereby reducing the potential for erosion and offsite sedimentation. Earth dikes can also be used to divert runoff from off-site and from undisturbed areas away from disturbed areas, and to divert sheet flows away from unprotected slopes.

An earth dike does not itself control erosion or remove sediment from runoff; a dike prevents erosion by directing runoff to an erosion control device such as a sediment trap or directing runoff away from an erodible area. Temporary diversion dikes should not adversely impact adjacent properties and must conform to local floodplain management regulations, and should not be used in areas with slopes steeper than 10%.

- The advantages of the temporary earth dike include the ability to handle flows from large drainage areas.
- Once stabilized, earth dikes require relatively little maintenance. Additionally, the earth dikes are relatively inexpensive to install since the soil material required for construction may be available on-site, and can be constructed as part of the initial grading operations, while the equipment is on-site.
- Uses on-site materials.

Installation/Application Criteria

Temporary earth dikes are a practical, inexpensive BMP used to divert storm water runoff. Temporary diversion dikes should be installed in the following manner:

1. All dikes should be compacted by earth-moving equipment.
2. All dikes should have positive drainage to an outlet.
3. All dikes should have 2:1 side slopes, 18 inches minimum height, and a minimum top width of 24 inches. Top width may be wider and side slopes may be flatter at crossings for construction traffic.
4. The outlet from the earth dike must function with a minimum of erosion. Runoff should be conveyed to a sediment trapping device such as a sediment trap (ESC 55) or sediment basin (ESC 56)when either the dike channel or the drainage area above the dike are not adequately stabilized.
5. Temporary stabilization may be achieved using seed and mulching for slopes less than 5%, and either rip-rap or sod for slopes in excess of 5%. In either case, stabilization of the earth dike should be completed immediately after construction or prior to the first rain.
6. If riprap is used to stabilize the channel formed along the toe of the dike, the following typical specifications apply:

CHANNEL GRADE	RIPRAP STABILIZATION
0.5-1.0%	4" Rock
1.1-2.0%	6" Rock
2.1-4.0%	8" Rock
4.1-5.0%	8-12" Riprap

7. The stone riprap, recycled concrete, etc. used for stabilization should be pressed into the soil with construction equipment.
8. Filter cloth may be used to cover dikes in use for long periods.
9. Construction activity on the earth dike should be kept to a minimum.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

"Draft - Sedimentation and Erosion Control, An Inventory of Current Practices", U.S.E.P.A., April, 1990.

ESC30

R0000561

Additional Information — Earth Dike

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Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, June 1981.

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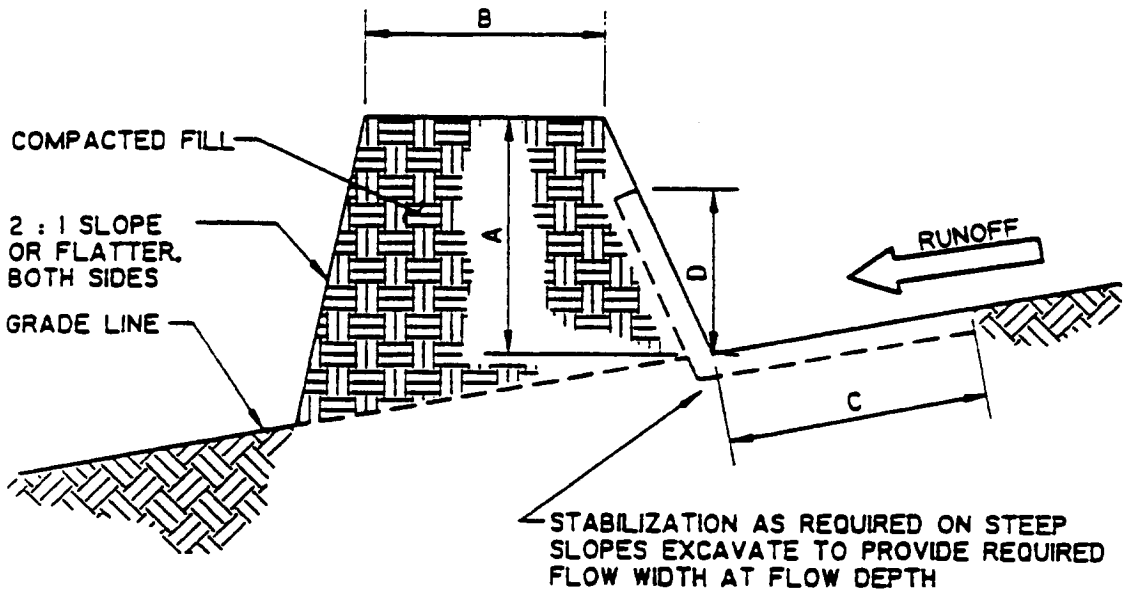
ESC30

R0000562

Additional Information — Earth Dike



REQUIREMENTS BASED ON UPSTREAM DRAINAGE AREA

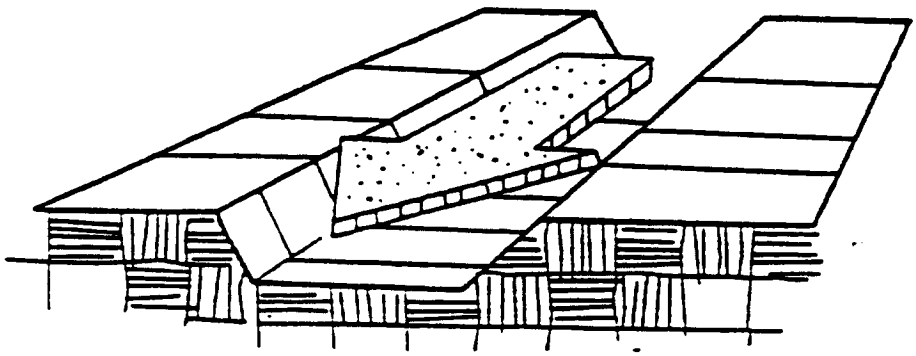
	DIKE 1 (5 ACRES OR LESS)	DIKE 2 (5-10 ACRES)
A-DIKE HEIGHT	18"	36"
B-DIKE WIDTH	24"	36"
C-FLOW WIDTH	4'	6'
D-FLOW DEPTH	8"	15"

TEMPORARY DIVERSION DIKE

ESC30

R0000563

BMP: TEMPORARY DRAINS AND SWALES



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- **Protect Slopes/Channels**
- **Control Site Perimeter**
- **Control Internal Erosion**

GENERAL DESCRIPTION

Temporary drains and swales are used to divert off-site runoff around the construction site, divert runoff from stabilized areas around disturbed areas, and direct runoff into sediment basins or traps.

SUITABLE APPLICATIONS

Temporary drains and swales are appropriate for diverting any upslope runoff around unstabilized or disturbed areas of the construction site:

- Prevent slope failures.
- Prevent damage to adjacent property.
- Prevents erosion and transport of sediments into water ways.
- Increases the potential for infiltration.
- Diverts sediment-laden runoff into sediment basins or traps.

INSTALLATION/APPLICATION CRITERIA

Temporary drainage swales will effectively convey runoff and avoid erosion if built properly:

- Size temporary drainage swales using local drainage design criteria.
- A permanent drainage channel must be designed by a professional engineer (see the local drainage design criteria for proper design).
- At a minimum, the drain/swale should conform to predevelopment drainage patterns and capacities.
- Construct the drain/swale with an uninterrupted, positive grade to a stabilized outlet.
- Provide erosion protection or energy dissipation measures if the flow out of the drain or swale can reach an erosive velocity.

REQUIREMENTS

- Maintenance
  - Inspect weekly and after each rain.
  - Repair any erosion immediately.
  - Remove sediment which builds up in the swale and restricts its flow capacity.
- Cost
  - The cost of a drainage swale increases with drainage area and slope. Typical. swales for controlling internal erosion are inexpensive.

LIMITATIONS

- Temporary drains and swales or any other diversion of runoff should not adversely impact upstream or downstream properties.
- Temporary drains and swales must conform to local floodplain management requirements.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

ESC31

Best Management Practices

Additional Information — Temporary Drains and Swales

Slopes that are formed during cut and fill operations should be protected from erosion by runoff. A combination of a temporary drainage swale and an earth dike (see ESC30) at the top of a slope can safely divert runoff to a location where it can safely be brought to the bottom of the slope (see Pipe Slope Drain ESC32). A combination dike and swale is easily constructed by a single pass of a bulldozer or grader and compacted by a second pass of the tracks or wheels over the ridge. Diversion structures should be installed when the site is initially graded, and remain in place until post-construction BMPs are installed and/or the slopes are stabilized.

Diversion practices concentrate the volume of surface runoff, increasing its velocity and erosive force. Thus, the flow out of the drain or swale must be directed onto a stabilized area or into a grade stabilization structure. A swale should be stabilized using vegetation, chemical treatment, rock rip-rap, matting, or other physical means of stabilization, if significant erosion will occur. Any drain or swale which conveys sediment-laden runoff must be diverted into a sediment basin or trap before it is discharged from the site.

Installation/Application Criteria

Diversion drains or swales are only effective if they are properly installed. Swales are more effective than dikes because they tend to be more stable. The combination of a swale with a dike on the downhill side is the most cost-effective diversion.

Standard engineering design criteria for small open channel and closed conveyance systems should be used (see the local drainage design manual). Unless local drainage design criteria state otherwise, drains or swales should be designed as follows:

- No more than 5 acres may drain to a temporary drain or swale
- Place the drain or swale above, not on, a cut and fill slope
- Swale bottom width should be at least 2 ft
- Depth of the swale should be at least 18 inches
- Side slopes should be 2:1 or flatter
- Drain or swale should be layed at a grade of at least 1 percent, but not more than 15 percent
- The swale must not be overtopped by the 10-year, 24-hour storm, irrespective of the design criteria stated above
- Remove all trees, stumps, obstructions, and other objectionable material from the swale when it is built
- Compact any fill material along the path of the swale
- Stabilize all swales immediately. Seed and mulch swales at a slope of less than 5 percent, and use rip-rap or sod for swales with a slope between 5 and 15 percent
- Do not operate construction vehicles across a swale unless a stabilized crossing is provided.
- The cost of swales and other diversion devices is generally included in the earthwork cost, as a separate item under the grading budget of the project construction contract.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

"Draft - Sedimentation and Erosion Control, An Inventory of Current Practices", U.S.E.P.A., April, 1990.

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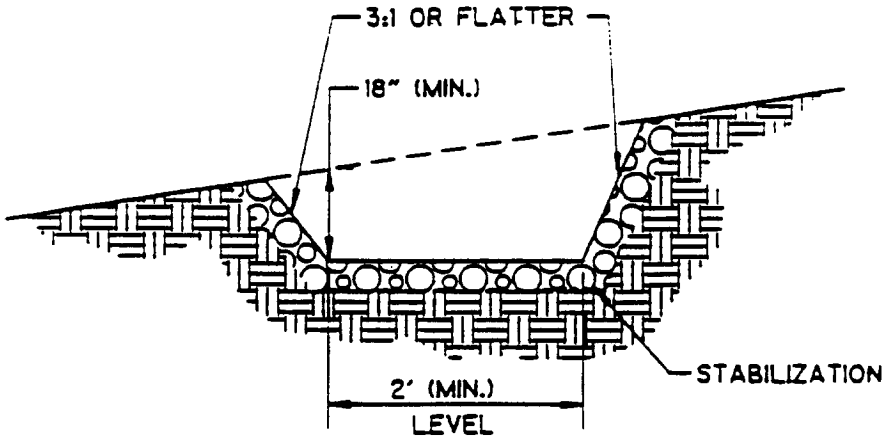
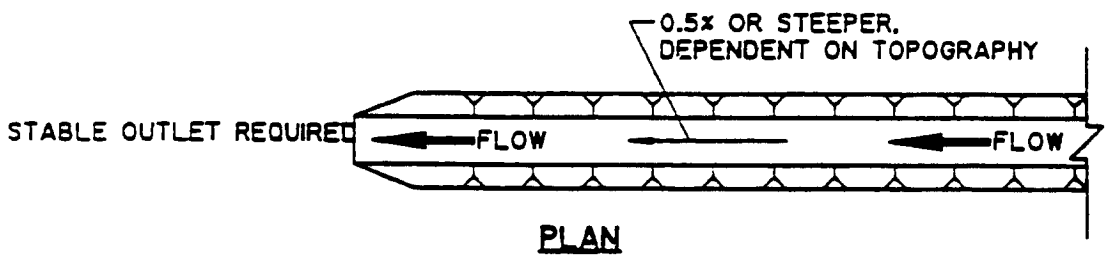
ESC31



CROSS SECTION



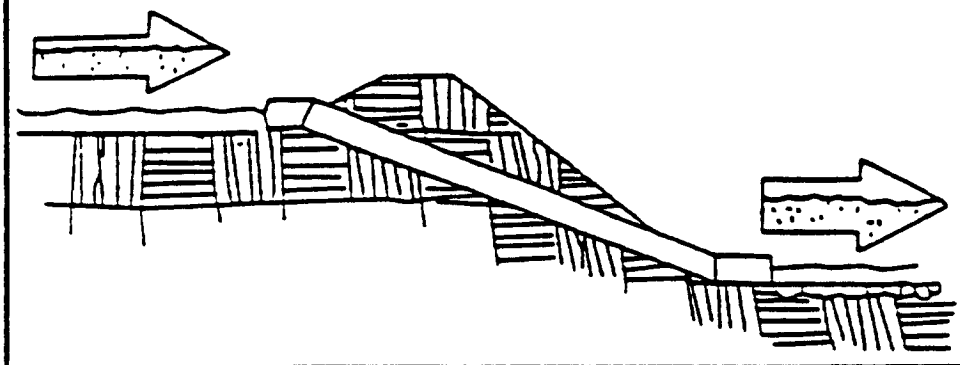
PLAN

TEMPORARY DRAINAGE SWALE

ESC31

R0000566

BMP: SLOPE DRAIN



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

A temporary pipe or lined channel to drain the top of a slope to a stable discharge point at the bottom of a slope without causing erosion.

SUITABLE APPLICATIONS

- Where concentrated flow of surface runoff must be conveyed down a slope in order to prevent erosion.
- Drainage for top of slope diversion dikes or swales.
- Emergency spillway for a sediment basin.
- Drainage for top of cut/fill slopes where water can accumulate.

The types of slope drain can include:

- Pipe drops.
- Flexible downdrains.
- Sectional downdrains.
- Lined terrace drains.

INSTALLATION/APPLICATION CRITERIA

- Secure inlet and surround with dikes to prevent gully erosion, and anchor pipe to slope.
- Size to convey at least the peak of a 10-year, 24-hour storm (See local flood control agency for requirements).
- Stabilize outlet.

REQUIREMENTS

- Maintenance
  - Structure must be inspected regularly and after storms.
  - Inlet must be free of undercutting and no water should circumvent the entry.
  - Outlet should not produce erosion; velocity dissipators must be maintained.
  - Pipe anchors must be checked to ensure that the pipe remains anchored to the slope.
- Cost
  - CalTrans Cost Schedule gives regional cost ranges.

LIMITATIONS

- Maximum drainage area per slope drain is 5 acres. (For large areas use a paved chute, rock lined channel or additional pipes.)
- Clogged slope drains will force water around the pipe and cause slope erosion.
- Dissipation of high flow velocities at the pipe outlet is required to avoid downstream erosion.
- Failure can result in flooding and severe erosion.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

ESC32

Best Management Practices

R0000567

Additional Information — Slope Drain

The slope drain may be a rigid pipe, such as corrugated metal, a flexible conduit, or a lined terrace drain with the inlet placed on the top of a slope. The drain conveys concentrated runoff down to the bottom of the slope. The BMP typically is used in combination with a diversion control, such as a temporary dike or swale, at the top of the slope, and serves as a temporary BMP to reduce or eliminate slope erosion until permanent BMPs are installed and the slope is stabilized.

The slope drain is applicable for any construction site where concentrated surface runoff can accumulate and must be conveyed down the slope in order to prevent erosion. The slope drain is effective because it prevents the stormwater from flowing directly down the slope by confining all the runoff into an enclosed pipe or channel. Due to the time lag between grading slopes and installation of permanent storm water collection systems and slope stabilization measures, temporary provisions to intercept runoff are sometimes necessary. Particularly in steep terrain, slope drains can protect unstabilized areas from erosion. Typical uses include:

- Emergency spillway for a sediment basin.
- Drainage for top of cut/fill slopes where storm water can accumulate and must be conveyed down the slope.

Installation/Application Criteria

Temporary slope drains are highly effective in eliminating slope erosion. Installation and maintenance requirements are small, especially when flexible pipe is used. General criteria:

- Gully erosion is the major problem with slope drains. Inlet structures must be securely entrenched and compacted to avoid severe gully erosion.
- The drain must be securely anchored to the slope and must be adequately sized to carry the capacity of the design storm and associated forces.
- The outlet must be stabilized with rip-rap, concrete or other type of energy dissipator, or directed into a stable sediment trap or basin.
- A debris rack is recommended at the inlet, and should be encouraged for larger pipes and at the outlet as a safety device to prevent small children from entering the pipe.

Materials:

Material selection and criteria for the pipe slope drain is often established by the local municipality. Soil type, rainfall patterns, construction schedule, and available supply are some of the factors to be considered. The following types of slope drains are commonly used:

- Rigid Pipe: This type of slope drain is also known as a pipe drop. The pipe usually consists of corrugated metal pipe or rigid plastic pipe. The pipe is placed on undisturbed or compacted soil and secured into the slope. One foot minimum cover is required on the pipe, and concrete thrust blocks must be used when required by the municipality or warranted by the calculated thrust forces. Collars should be properly installed and secured with metal strappings or watertight collars.
- Flexible Pipe: The flexible pipe slope drain consists of a flexible conduit of heavy duty material. The conduit material is securely anchored into the slope and connections are watertight. The conduit should be securely fastened to the metal inlet and outlet conduit sections with metal strappings or water tight collars.
- Sectional Downdrains: The sectional downdrain consists of pre-fabricated, sectional conduit of half-round or third-round material. The sectional downdrain performs similar to a flume or chute. The pipe must be placed on undisturbed or compacted soil and secured into the slope.
- Concrete-lined Terrace Drain: This is a concrete channel for draining water from a terrace on a slope to the next level. These drains are after permenant strucures which should be designed according to local drainage design criteria.

ESC32

R0000568

Additional Information — Slope Drain

Design:
Unless specified by the local municipality, the capacity for temporary drains should be sufficient to handle the peak runoff from a 10-year, 24-hour rainfall event. The pipe size may be computed using the Rational Method or a method established by the local municipality. Higher flows must be safely stored or routed to prevent any offsite concentration of flow, and any erosion of the slope.

As a guide, temporary pipe slope drains should not be sized smaller than shown in the following table:

MINIMUM PIPE DIAMETER	MAXIMUM DRAINAGE AREA (ACRES)
12"	0.5
18"	1.5
21"	2.5
24"	3.5
30"	5.0

Permanent improvements must be designed and installed if the drainage area is greater than 5 acres.

The following additional design criteria should be considered:

- Construct the pipe slope drain entrance of a standard flared end section with a minimum 6-inch metal toe plate to prevent runoff from undercutting the pipe inlet. The slope of the entrance is usually at least 3 percent.
- Thoroughly compact the soil around and under the pipe and entrance section.
- Securely fasten the slope drain sections together, have gasketed watertight fittings, and securely anchored into the soil.
- Secure the flared inlet section to the slope drain and have watertight connecting bands.
- Use interceptor dikes to direct runoff into a slope drain. The height of the dike should be at least 1 foot higher at all points than the top of the inlet pipe.
- If the pipe slope drain is conveying sediment-laden water, direct all flows into a sediment trap (ESC55) or sediment basin (ESC56).
- Unless the pipe directly enters a sediment trap/basin, stabilize the area below the outlet with a riprap apron.

Limitations
Installation is critical for effective use of the pipe slope drain to minimize potential gully erosion. Maximum drainage area per pipe slope drain is 5 acres. For larger areas use a paved chute, rock lined channel or additional pipes. (See the local municipality for drainage requirements)

- During large storms, pipe slope drains may become clogged or overcharged, forcing water around the pipe and causing extreme slope erosion.
- Structures for dissipation of high flow velocities at the pipe outlet must be constructed to avoid downstream erosion.
- Failure of this type of temporary structure may result in flooding and severe erosion.
- If the sectional downdrain is not sized correctly, the runoff can spill over the drain sides causing gully erosion, and potential failure of the structure.

ESC32

R0000569

Additional Information — Slope Drain

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

"Draft - Sedimentation and Erosion Control, An Inventory of Current Practices", U.S.E.P.A., April, 1990.

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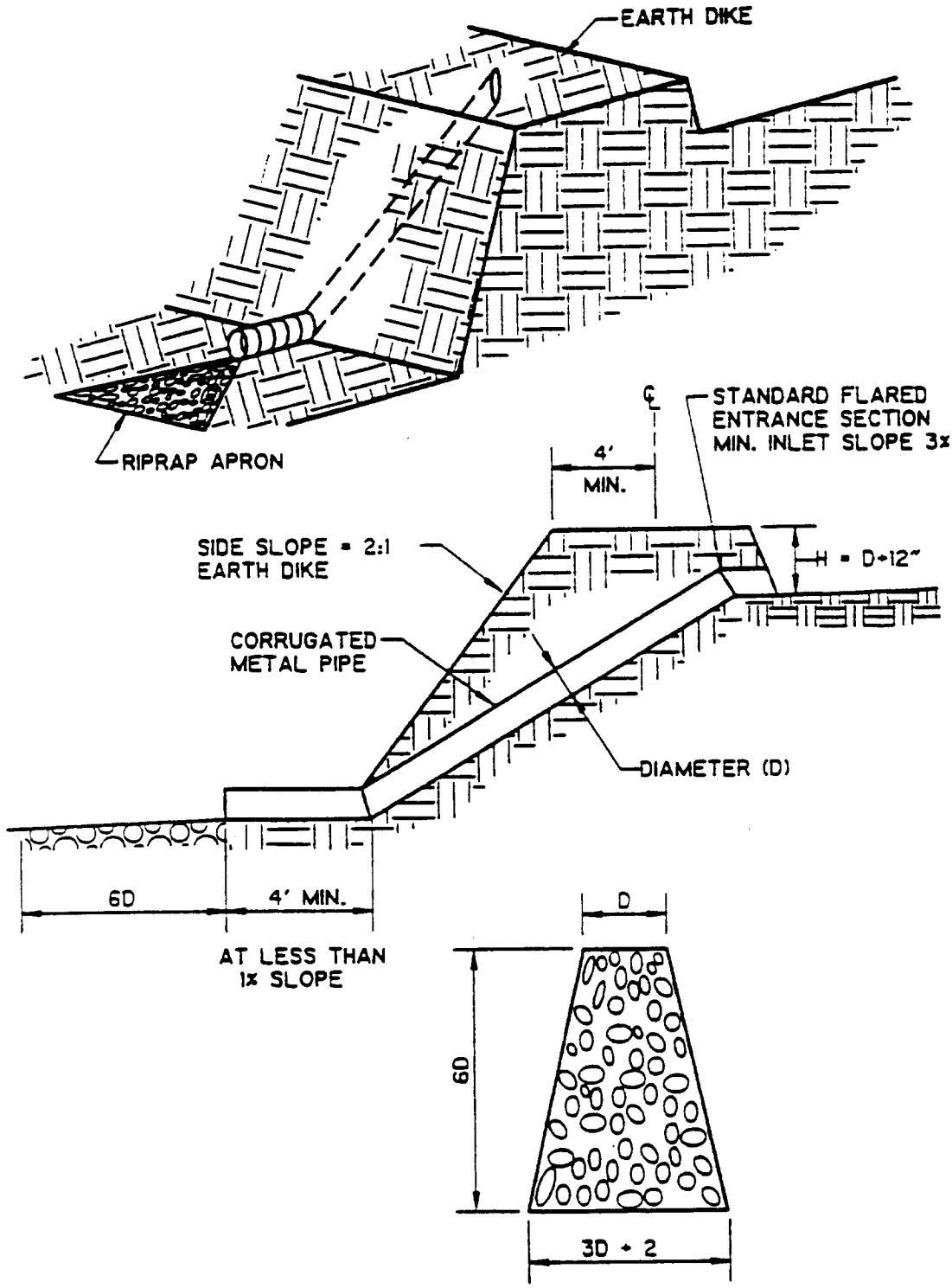
Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC32

R0000570

Additional Information — Slope Drain



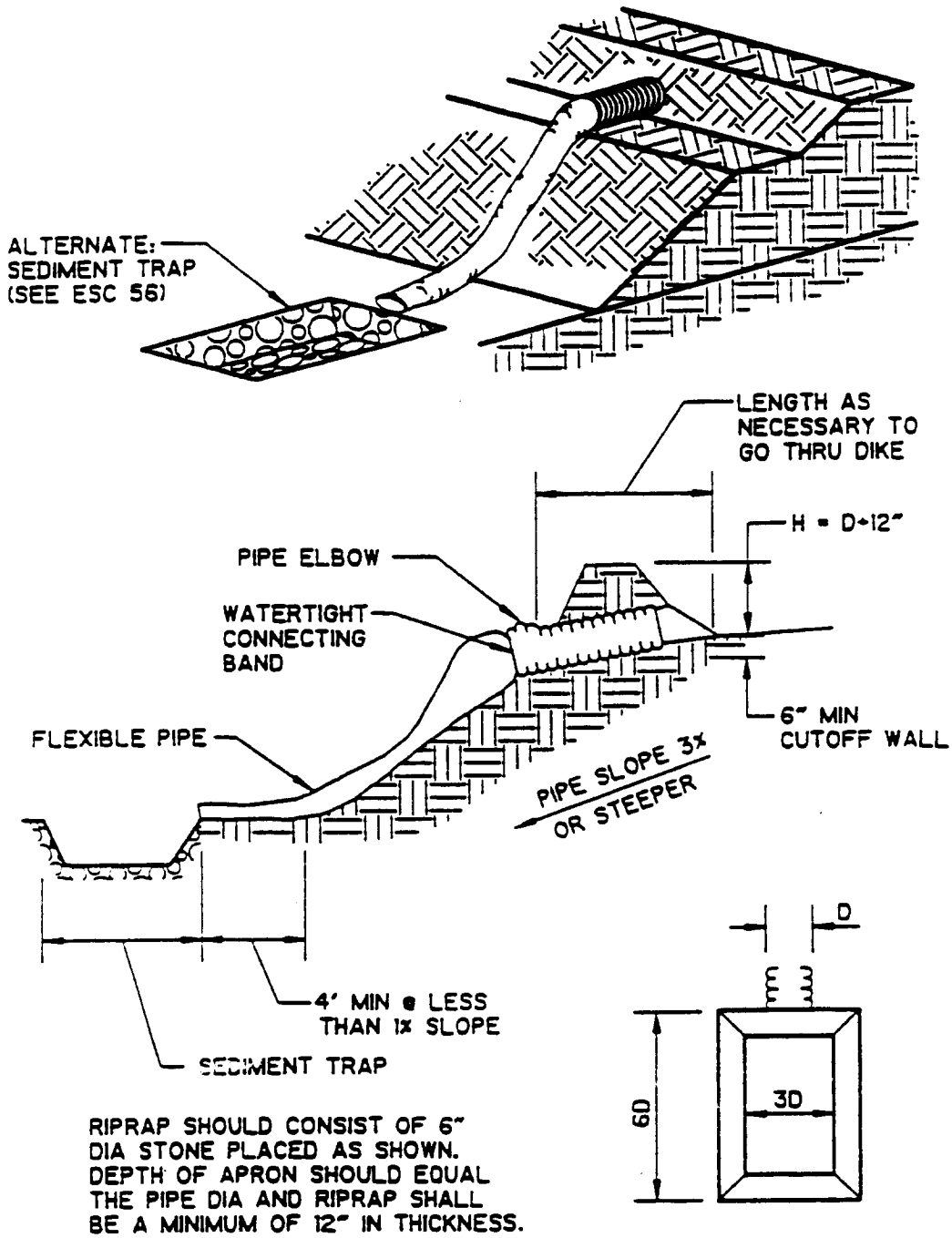
RIPRAP SHOULD CONSIST OF 6" DIAMETER STONE PLACED AS SHOWN AND SHOULD BE A MINIMUM OF 12" IN THICKNESS.

PIPE SLOPE DRAIN (RIGID)

ESC32

R0000571

Additional Information — Slope Drain



RIPRAP SHOULD CONSIST OF 6" DIA STONE PLACED AS SHOWN. DEPTH OF APRON SHOULD EQUAL THE PIPE DIA AND RIPRAP SHALL BE A MINIMUM OF 12" IN THICKNESS.

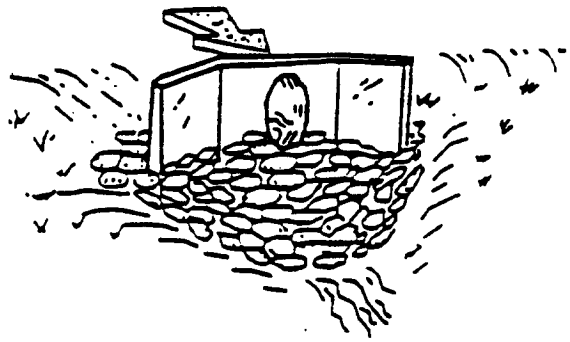
ALTERNATIVE SEDIMENT TRAP: RIPRAP PLAN

PIPE SLOPE DRAIN (FLEXIBLE)

ESC32

R0000572

BMP: OUTLET PROTECTION



Objectives

- *Housekeeping Practices*
- *Contain Waste*
- *Minimize Disturbed Areas*
- *Stabilize Disturbed Areas*
- *Protect Slopes/Channels* (●)
- *Control Site Perimeter*
- *Control Internal Erosion*

GENERAL DESCRIPTION

Rock outlet protection is a physical device composed of rock, grouted riprap, or concrete rubble which is placed at the outlet of a pipe to prevent scour of the soil caused by high pipe flow velocities, and to absorb flow energy to produce non-erosive velocities.

SUITABLE APPLICATIONS

- Wherever discharge velocities and energies at the outlets of culverts, conduits or channels are sufficient to erode the next downstream reach.
- Rock outlet protection is best suited for temporary use during construction because it is usually less expensive and easier to install than concrete aprons or energy dissipators.
- A sediment trap below the pipe outlet is recommended if runoff is sediment laden.
- Permanent rock riprap protection should be designed and sized by the engineer as part of the culvert, conduit or channel design.
- Grouted riprap should be avoided in areas of freeze and thaw because the grout will break up.

INSTALLATION/APPLICATION CRITERIA

Rock outlet protection is effective when the rock is sized and placed properly. When this is accomplished, rock outlets do much to limit erosion at pipe outlets. Rock size should be increased for high velocity flows. General recommendations for rock size and length of outlet protection mat are presented in the additional information sheet. Best results are obtained when sound, durable, angular rock is used. CalTrans Standard Specifications or the local municipality can provide additional specifications for constructing outlet protection devices.

REQUIREMENTS

- Maintenance
  - Inspect after each significant rain for erosion and/or disruption of the rock, and repair immediately.
  - Grouted or wire-tied rock riprap can minimize maintenance requirements.
- Cost
  - CalTrans Cost Schedule gives regional cost ranges.

LIMITATIONS

- Large storms often wash away the rock outlet protection and leave the area susceptible to erosion.
- Sediment captured by the rock outlet protection may be difficult to remove without removing the rock.
- Outlet protection may negatively impact the channel habitat.

Targeted Pollutants

- ● *Sediment*
- ○ *Nutrients*
- ○ *Toxic Materials*
- ○ *Oil & Grease*
- ○ *Floatable Materials*
- ○ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ◒ *Capital Costs*
- ○ *O&M Costs*
- ◒ *Maintenance*
- ○ *Training*
- ○ *Suitability for Slopes >5%*

● *High* ○ *Low*

ESC40

Best Management Practices

R0000573

Additional Information — Outlet Protection

Outlet protection is needed where discharge velocities and energies at the outlets of culverts, conduits or channels are sufficient to erode the immediate downstream reach. This practice protects the inlet or outlet from developing small eroded pools (plunge pools), and protects against gully erosion resulting from scouring at a culvert mouth.

Rock outlet protection is usually less expensive and easier to install than concrete aprons or energy dissipators. It also serves to trap sediment and reduce flow velocities.

As with most channel design projects, depth of flow, roughness, gradient, side slopes, discharge rate and velocity should be considered in the outlet design. Compliance to local and state regulations should also be considered while working in environmentally sensitive streambeds. General recommendations for rock size and length of outlet protection mat is shown in the rock outlet protection figure. Best results are obtained when sound, durable, angular rock is used. Rock depth and outlet protection length are governed by the discharge pipe size, but hydraulic calculations and velocities should be used to determine length. Your local municipality or CalTrans should be consulted for appropriate sizing criteria in your area.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Mariposa County, Arizona, September 1992.

County of Sacramento Improvement Standards, Sacramento County - May 1989.

Environmental Criteria Manual, City of Austin, TX, 1989.

Erosion and Sediment Control Handbook, S.J. Goldman, K. Jackson, T.A. Bursztynsky, P.E., McGraw Hill Book Company, 1986.

Handbook of Steel Drainage & Highway Construction, American Iron and Steel Institute, 1983.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, Jun 1981.

Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

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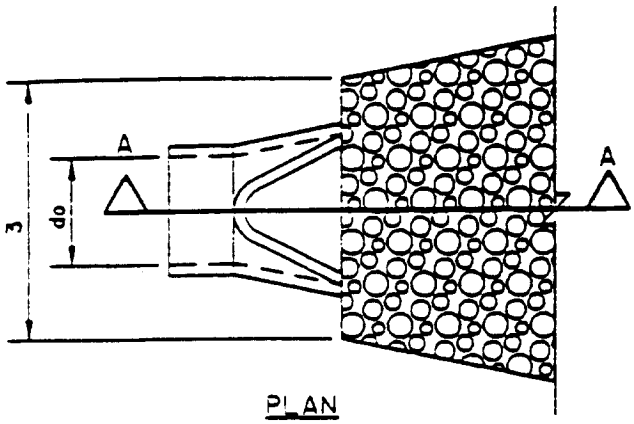
ESC40

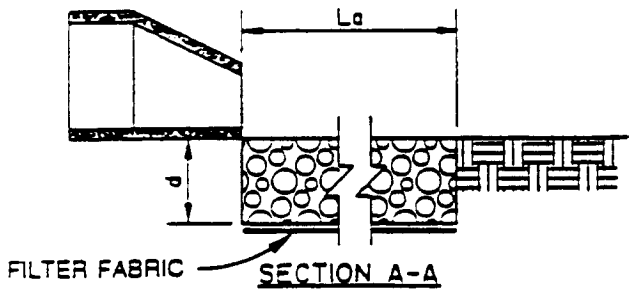
R0000574

Additional Information — Outlet Protection



PLAN

La = LENGTH OF APRON
do = INSIDE PIPE DIAMETER
w = APRON WIDTH
d = APRON THICKNESS

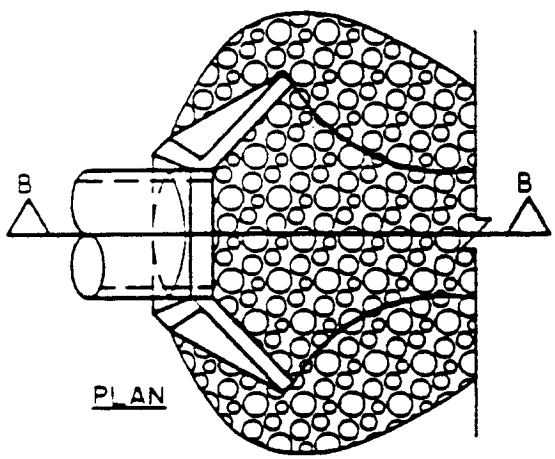


FILTER FABRIC — SECTION A-A

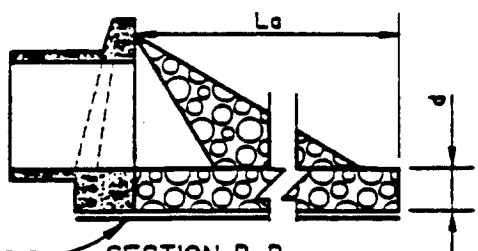
PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL

NOTES

1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, OR CONCRETE
2. PIPE DIAMETER, APRON DIMENSIONS, AND AVERAGE ROCK SIZE FOR RIPRAP ARE BASED ON THE DESIGN FLOW RATE AND VELOCITY. La AND ROCK SIZE MUST BE SET TO SLOW THE FLOW TO NON-EROSIVE VELOCITIES (e.g., LESS THAN 10 fps). SEE CALTRANS AND LOCAL AGENCY DESIGN CRITERIA FOR APPROPRIATE SIZING CRITERIA.
3. d = 1.5 TIMES THE MAXIMUM ROCK SIZE DIAMETER BUT NOT LESS THAN 6 INCHES.



PLAN



FILTER FABRIC — SECTION B-B

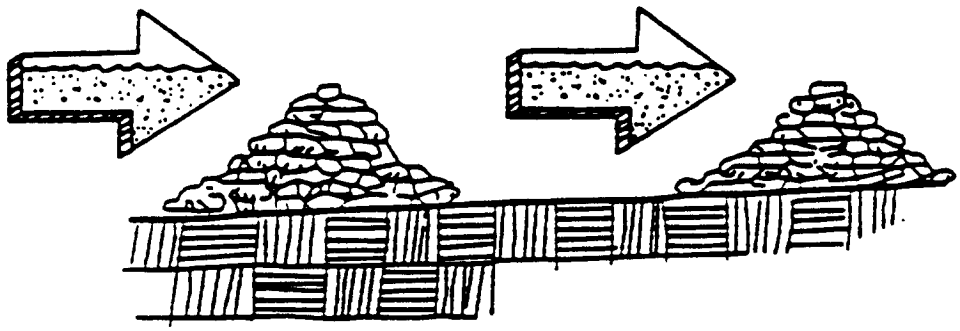
PIPE OUTLET TO WELL-DEFINED CHANNEL

R0000575

ESC40

PIPE OUTLET CONDITIONS

BMP: CHECK DAMS



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

Small temporary dams constructed across a swale or drainage ditch. Check dams reduce the velocity of concentrated stormwater flows, thereby reducing erosion of the swale or ditch, and promoting sedimentation behind the dam. If properly anchored, brush or rock filter berms (ESC53) may be used for check dams.

SUITABLE APPLICATIONS

- Used to prevent erosion by reducing the velocity of channel flow in small intermittent channels and temporary swales.
- May also promote sedimentation behind the dam, but should not be considered to be a primary sediment trapping device because subsequent storms will scour and resuspend much of the trapped sediment.

INSTALLATION/APPLICATION CRITERIA

- Check dams should be placed at a distance and height to allow small pools to form between each one.
- Backwater from a downstream check dam should reach the toe of the upstream check dam.
- Major floods (2 year storm or larger) should safely flow over the check dam without an increase in upstream flooding or destruction of the checkdam.
- Primarily used in small, steep channels where velocities exceed 2 fps.
- Used in steep terrain where velocity reduction is required.
- A deep sump may be provided immediately upstream of the check dam to capture excessive sediment.
- Check dams may be built of rocks or logs, which are secured against damage during significant floods.

REQUIREMENTS

- Maintenance
  - Inspect for sediment buildup behind the check dam and signs of erosion around the check dam after each rain.
  - Remove accumulated sediment whenever it reaches one-half the sump depth.
- Cost
  - See CalTrans Cost Schedule for regional cost data.

LIMITATIONS

- Use only in small open channels which drain 10 acres of less.
- Not to be used in live streams.
- Do not install in lined or vegetated channels.

R0000576

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

ESC41

Best Management Practices

Additional Information — Check Dams

Check dams create small pools in swales and ditches which drain 10 acres or less. These pools reduce the velocity of storm water flows, thus reducing erosion of the swale/ditch. Sedimentation also occurs in these small pools, but probably results in little net sediment removal because of the small detention time and probable scour during longer storms. A sediment trap (ESC55) may be placed immediately upstream of the check dam to increase sediment removal efficiency (but never in a natural stream or channel). Check dams should not be placed in swales/ditches with a base flow during some or all of the year.

Installation/Application Criteria

Check dams must be sized and constructed correctly and maintained properly, or they will be either washed out or cause flooding. Check dams can be constructed of either rock or logs. Use of other natural materials available on-site that can withstand the stormwater flow velocities is acceptable, such as pea-gravel filled in sand bags. Check dams should not be constructed from straw bales or silt fences, since concentrated flows quickly wash out these materials.

A sediment trap (ESC55) may be installed immediately upstream of the check dam, but may be of limited effectiveness if channel flows are large enough to scour the trap during moderate to large storms. Maximum velocity reduction is achieved if the toe of the upstream dam is at the same elevation as the top of the downstream dam. The center section of the dam should be lower than the edge sections so that the check dam will act like a weir during major floods.

Rock check dams are usually constructed of appropriately 8"-12" rock. The rock is placed either by hand or mechanically, but never just dumped into the channel. The dam must completely span the ditch or swale to prevent washout. The rock used must be large enough to stay in place given the expected design flow through the channel.

Log check dams are usually constructed of 4 to 6-inch diameter logs. The logs should be embedded into the soil at least 18 inches.

If grass is planted to stabilize the ditch or swale, the check dam should be removed when the grass has matured (unless the slope of the swale is greater than 4 percent).

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Mariposa County, Arizona, September 1992.

"Draft - Sedimentation and Erosion Control, An Inventory of Current Practices", U.S.E.P.A., April, 1990.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, June 1981.

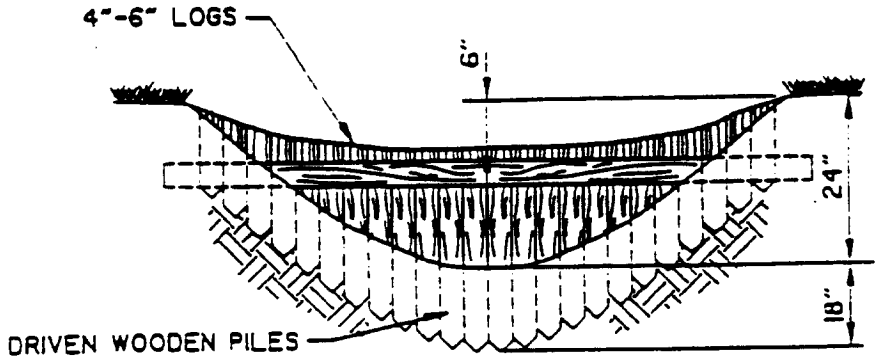
Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

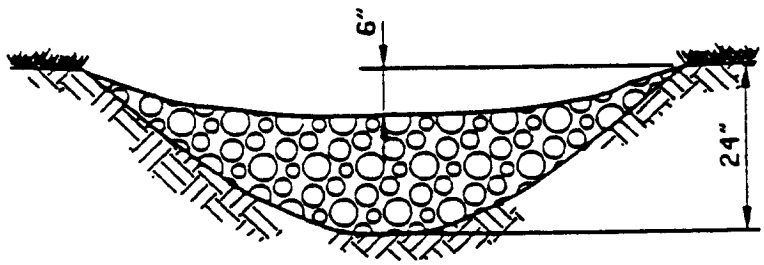
ESC41

R0000577

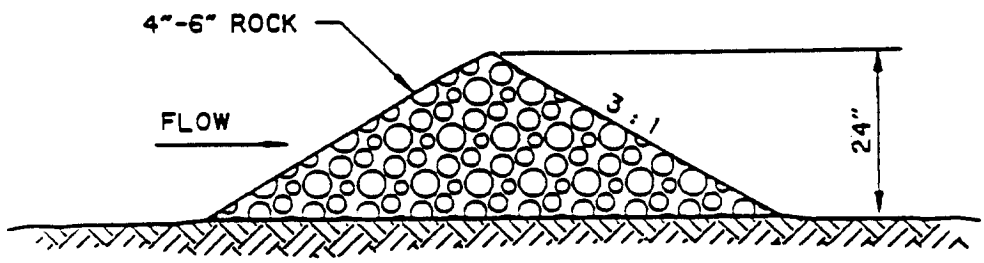
Additional Information — Check Dams



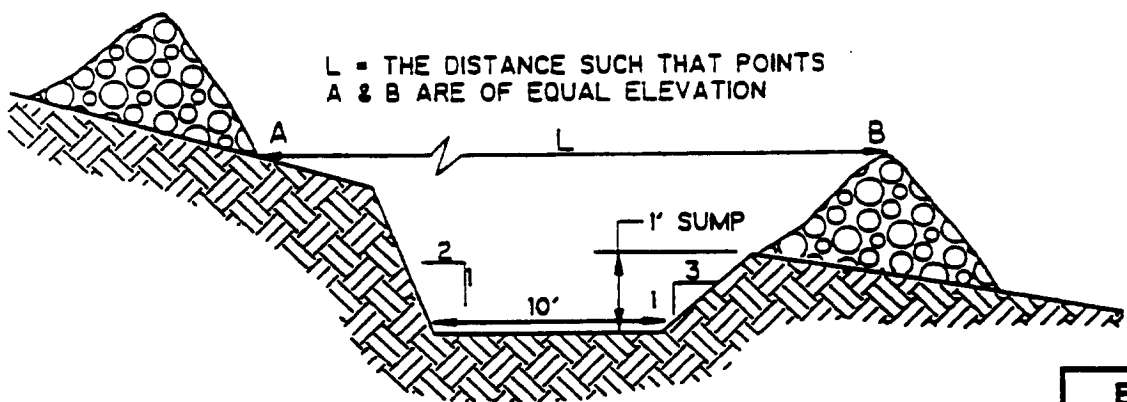
LOG CHECK DAM



ROCK CHECK DAM



ROCK CHECK DAM CROSS-SECTION

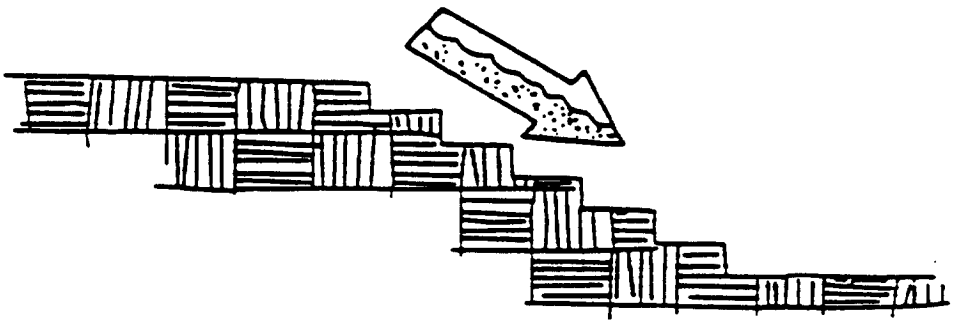


SPACING BETWEEN CHECK DAMS

ESC41

R0000578

BMP: SLOPE ROUGHENING/TERRACING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- **Stabilize Disturbed Areas**
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

GENERAL DEFINITION

Slope roughening/terracing creates microclimates for establishing vegetation, reduces runoff velocity, increases infiltration, and provides small depressions for trapping sediment.

SUITABLE APPLICATIONS

- Any cleared area prior to seeding and planting.
- Required for cleared, erodible slopes steeper than 3:1 and higher than 5 feet prior to seeding and planting.

INSTALLATION/APPLICATION CRITERIA

Slope roughening/terracing is performed in several ways:

- Stair-step grading.
- Grooving.
- Furrowing.
- Tracking.
- Rough grading.
- No grading.

REQUIREMENTS

- Maintenance
  - Inspect roughened slopes weekly and after rainfall for excessive erosion.
  - Revegetate as quickly as possible.
- Cost (source: EPA, 1992)
  - Surface Roughening: Performed at no (e.g., rough grading) to low (e.g., tracking) cost.
  - Terracing: Average annual cost is $4 per linear foot (2 year useful life).

LIMITATIONS

- Roughening is of limited effectiveness on its own, but is used to speed revegetation.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

● High ○ Low

ESC42

Best Management Practices

R0000579

Additional Information — Slope Roughening/Terracing

Slope roughening/terracing creates uneven depressions, steps or grooves on the soil surface to aid in establishment of vegetation, reduce runoff velocity, increase infiltration, and provide for sediment trapping.

Surface roughening may be applied to all slopes steeper than 3:1, and greater than 5 vertical feet, providing some instant erosion protection on bare soil while vegetative cover is being established. It is an inexpensive, simple and short-term erosion control measure for roadway cut slopes.

Terracing usually is a more permanent measure used to stabilize a steep slope. Terraces should be designed by a registered professional engineer and included in the project construction plans. Local design criteria should be used.

Installation/Application

Graded areas with smooth, hard surfaces give a false impression of "finished grading" and a job well done. It is difficult to establish vegetation on such surfaces due to reduced water infiltration and the potential for erosion. Rough slope surfaces with uneven soil and rocks left in place may appear unattractive or unfinished at first, but they encourage water infiltration, speed the establishment of vegetation, and decreased runoff velocity. Rough, loose soil surfaces give lime, fertilizer, and seed some natural coverage. Niches in the surface provide microclimates which generally provide a cooler and more favorable moisture level than hard flat surfaces; this aids seed germination.

There are different methods for achieving a roughened soil surface on a slope, and the selection of an appropriate method depends upon the type of slope. Roughening methods include stair-step grading, grooving, and tracking. Factors to be considered in choosing a method are slope steepness, mowing requirements, and whether the slope is formed by cutting or filling.

1. Disturbed areas which will not require mowing may be stair-step graded, grooved, or left rough after filling.
2. Graded areas steeper than 3:1 should be stair-stepped with benches (See figure at end of fact sheet). The stair-steping will help vegetation become attached and also trap soil eroded from the slopes above. Stair-step grading is particularly appropriate in soils containing large amounts of soft rock. Each "step" catches material which sloughs from above, and provides a level site where vegetation can become established. Stairs should be wide enough to work with standard earth moving equipment.
3. Areas which will be mowed (there areas should have slopes less than 3:1) may have small furrows left by disking, harrowing, raking, or seed-planting machinery operated on the contour.
4. It is important to avoid excessive compacting of the soil surface when scarifying. Tracking with bulldozer treads is preferable to not roughening at all, but is not as effective as other forms of roughening, as the soil surface is severely compacted and runoff is increased. Tracking can be accomplished in a variety of ways, including "track walking," or driving a crawler tractor up and down the slope, in leaving a pattern of cleat imprints parallel to slope contours.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

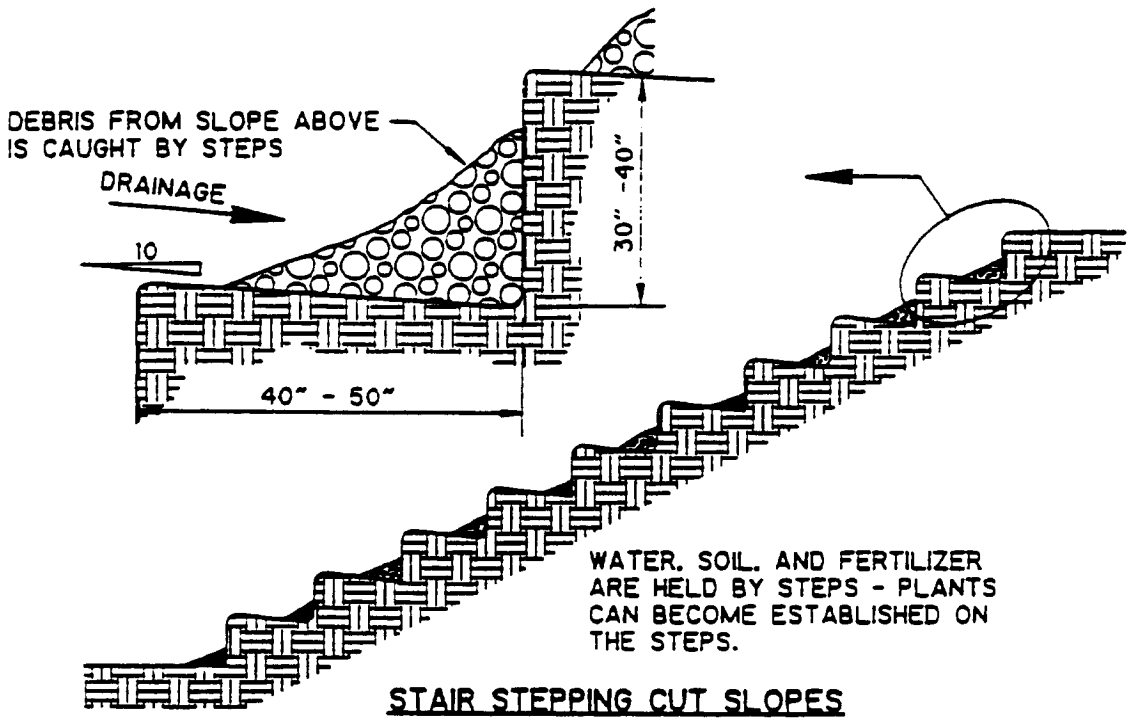
Handbook of Steel, Drainage & Highway Construction, American Iron and Steel Institute, 1983.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April, 1992.

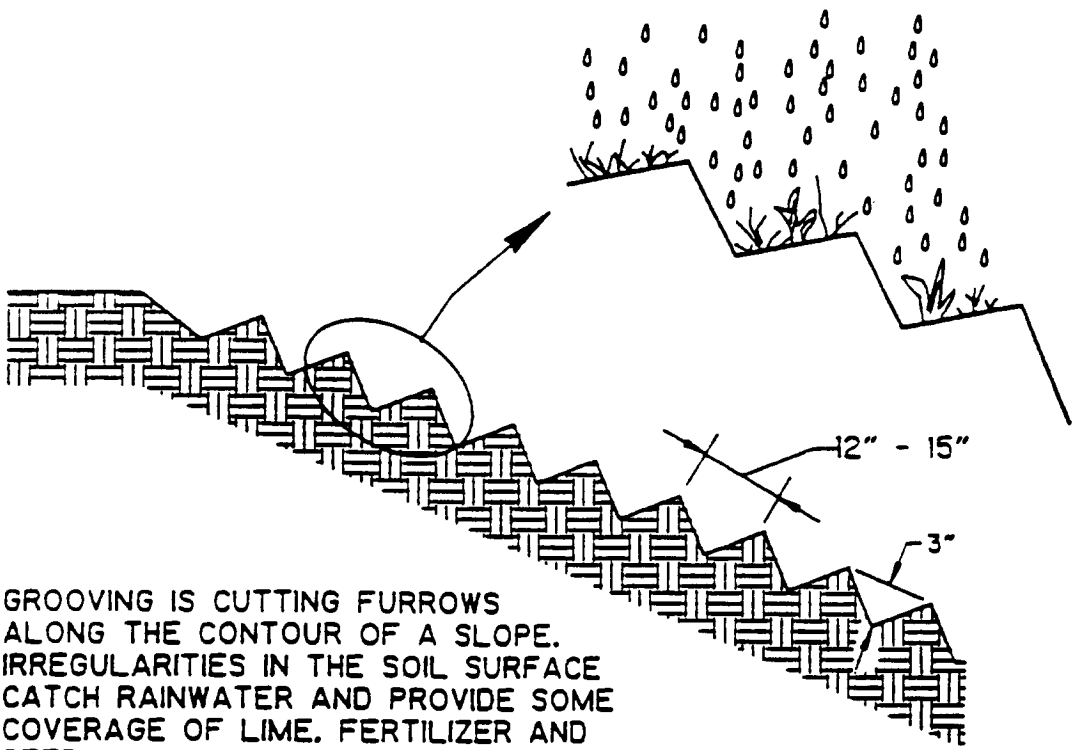
Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

ESC42

R0000580



STAIR STEPPING CUT SLOPES



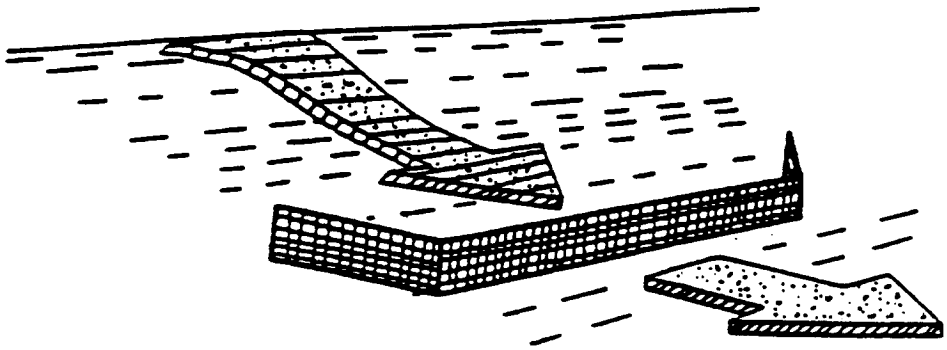
GROOVING IS CUTTING FURROWS ALONG THE CONTOUR OF A SLOPE. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND PROVIDE SOME COVERAGE OF LIME. FERTILIZER AND SEED.

GROOVING SLOPES

ESC42

STAIR-STEPPING CUT SLOPES AND GROOVING SLOPES

BMP: SILT FENCE



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- **Control Site Perimeter**
- **Control Internal Erosion**

GENERAL DESCRIPTION

A silt fence is made of a filter fabric which has been entrenched, attached to supporting poles, and sometimes backed by a wire fence for support. The silt fence detains sediment-laden water, promoting sedimentation behind the fence.

SUITABLE APPLICATIONS

- Along the perimeter of the site.
- Below the toe of a cleared slope.
- Along streams and channels.
- Around temporary spoil areas.
- Across swales with catchments less than 1 acre.
- Below other small cleared areas.

INSTALLATION/APPLICATION

- Use principally in areas where sheet flow occurs.
- Install along a level contour, so water does not pond more than 1.5 feet at any point.
- No more than 1 acre, 100 ft., or 0.5 cfs of concentrated flow should drain to any point along the silt fence.
- Turn ends of fence uphill.
- Provide area behind the fence for runoff to pond and sediment to settle (approx. 1200 sq. ft. per acre draining to the silt fence).
- Select filter fabric which retains 85% of the soil, by weight, based on sieve analysis, but is not finer than an equivalent opening size of 70.

REQUIREMENTS

- Maintenance
  - Inspect weekly and after each rainfall.
  - Repair wherever fence is damaged.
  - Remove sediment when it reaches 1/3 the height of the fence.
- Cost (source: EPA, 1992)
  - Average annual cost for installation and maintenance (assumes 6 month useful life): $7 per lineal foot ($850 per drainage acre)

LIMITATIONS

- Do not use where 85% of the soil, by weight, passes through a No. 200 sieve because the filter fabric will clog.
- Do not place fence on a slope, or across any contour line.
- Do not use in streams, channels, or anywhere flow has concentrated.
- Do not use in locations where ponded water may cause flooding.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

ESC50

Best Management Practices

R0000582

Additional Information — Silt Fence

A silt fence is a temporary sediment barrier consisting of filter fabric stretched across and attached to supporting posts, entrenched, and, depending upon the strength of the fabric used, supported with wire fence. Silt fences trap sediment in two ways: (1) by intercepting and detaining small amounts of sediment from disturbed areas during construction operations in order to promote sedimentation behind the fence; and (2) by decreasing the velocity of low flows (up to 0.5 cfs) in swales.

Silt fences may be used for perimeter control, placed upstream of the point(s) of discharge of sheet flow from a site. They may also be used as interior controls below disturbed areas where runoff may occur in the form of sheet and rill erosion, and perpendicular to minor swales or ditch lines for up to one acre contributing drainage areas. Silt fences are generally ineffective in locations where the flow is concentrated and are only applicable for sheet or overland flows.

Installation/Application

Planning:

Silt fences are generally most effective when the following placement criteria are followed:

- Limit the upstream drainage area to 1 acre or less when used alone or in combination with sediment basin in a larger site.
- The maximum slope perpendicular to the fence line should be 1:1.
- Limit the maximum sheet or overland flow path length to any point along the fence to 100 feet.
- Limit the concentrated flows reaching the fence to 0.5 cfs.

Silt fences are preferable to straw barriers in many cases. Laboratory work at the Virginia Highway and Transportation Research Council has shown that silt fences can trap a much higher percentage of suspended sediments than can straw bales. While the failure rate of silt fences is lower than that of straw barriers, there are many instances where silt fences have been improperly installed. The following installation methods can improve performance and should be followed:

- Construct the silt fence along a level contour.
- Silt fences should remain in place until the disturbed area is permanently stabilized.
- Provide sufficient room for runoff to pond behind the fence and to allow sediment removal equipment to pass between the silt fence and toes of slopes or other obstructions. About 1200 sq. ft. of ponding area should be provided for every acre draining to the fence.
- Turn the ends of the filter fence uphill to prevent storm water from flowing around the fence.
- Leave an undisturbed or stabilized area immediately downslope from the fence.
- Do not place in live streams or intermittently flowing channels.

Design:

Selection of a filter fabric is based on soil conditions at the construction site (which affect the equivalent opening size (EOS) fabric specification) and characteristics of the support fence (which affect the choice of tensile strength). The designer should specify a filter fabric that retains the soil found on the construction site yet will have openings large enough to permit drainage and prevent clogging. The following criteria is recommended for selection of the equivalent opening size:

1. If 50 percent or less of the soil, by weight, will pass the U.S. standard sieve No. 200, select the EOS to retain 85 percent of the soil. The EOS should not be finer than EOS 70.
2. For all other soil types, the EOS should be no larger than the openings in the U.S. Standard Sieve No. 70 [0.0083 in. (0.21 mm.)] except where direct discharge to a stream, lake, or wetland will occur, then the EOS should be no larger than Standard Sieve No. 100.

ESC50

R0000583

Additional Information — Silt Fence

To reduce the chance of clogging, it is preferable to specify a fabric with openings as large as allowed by the criteria. No fabric should be specified with an EOS smaller than U.S. Standard Sieve No. 100 [0.0059 in. (0.15 mm.)]. If 85 percent or more of a soil, by weight, passes through the openings in a No. 200 sieve [0.0029 in. (0.074 mm.)], filter fabric should not be used. Most of the particles in such a soil would not be retained if the EOS was too large, and they would clog the fabric quickly if the EOS was small enough to capture the soil.

The fence should be supported by a wire mesh if the fabric selected does not have sufficient strength and bursting strength characteristics for the planned application (as recommended by the fabric manufacturer). Filter fabric material should contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0° F. to 120° F.

Installation Guidelines:
Filter fences are to be constructed on a level contour. Sufficient area should exist behind the fence for ponding to occur without flooding or overtopping the fence.

- Posts should be spaced a maximum of 6 feet apart and driven securely into the ground a minimum of 30 inches.
- A trench should be excavated approximately 8 inches wide and 12 inches deep along the line of posts and upslope from the barrier.
- When standard strength filter fabric is used, a wire mesh support fence should be fastened securely to the upslope side of the posts using heavy-duty wire staples at least 1 inch long, tie wires or hog rings. The wire should extend into the trench a minimum of 4 inches.
- The standard strength filter fabric should be stapled or wired to the fence, and 40 inches of the fabric should extend into the trench. When extra-strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated and the filter fabric stapled or wired directly to the posts.
- Avoid the use of joints. The filter fabric should be purchased in a continuous roll, then cut to the length of the barrier. When joints are necessary, filter cloth should be spliced together only at a support post, with a minimum 6 inch overlap, and both ends securely fastened to the post.
- The trench should be backfilled with compacted native material.

Requirements
Maintenance:

Inspect monthly during dry periods and immediately after each rainfall. Repair as necessary. Sediment must be removed when it reaches approximately one third the height of the fence, especially if heavy rains are expected.

Filter fences should not be removed until the upslope area has been permanently stabilized.

Limitations
- Filter fences will create a temporary sedimentation pond on the upstream side of the fence and may cause temporary flooding. Fences not constructed on a level contour will be overtopped by concentrated flow resulting in failure of the filter fence.
- Filter fences are not practical where large flows of water are involved, hence the need to restrict their use to drainage areas of one acre or less, and flow rates of less than 0.5 cfs.
- Problems may arise from incorrect selection of pore size and/or improper installation.
- Do not allow water depth to exceed 1.5 ft. at any point.
- Improperly installed fences are subject to failure from undercutting, overlapping, or collapsing.

ESC50

R0000584

Additional Information — Silt Fence

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September1992.

Environmental Action Manual, City of Austin, Texas, 1989.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, Jun 1981.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April, 1992.

Sedimentation and Erosion Control Practices, An Introductory of Current Practices (Draft), USEPA, 1990.

Stormwater Management Manual for The Puget Sound Basin, Washington State Department of Ecology, Public Review Draft, 1991.

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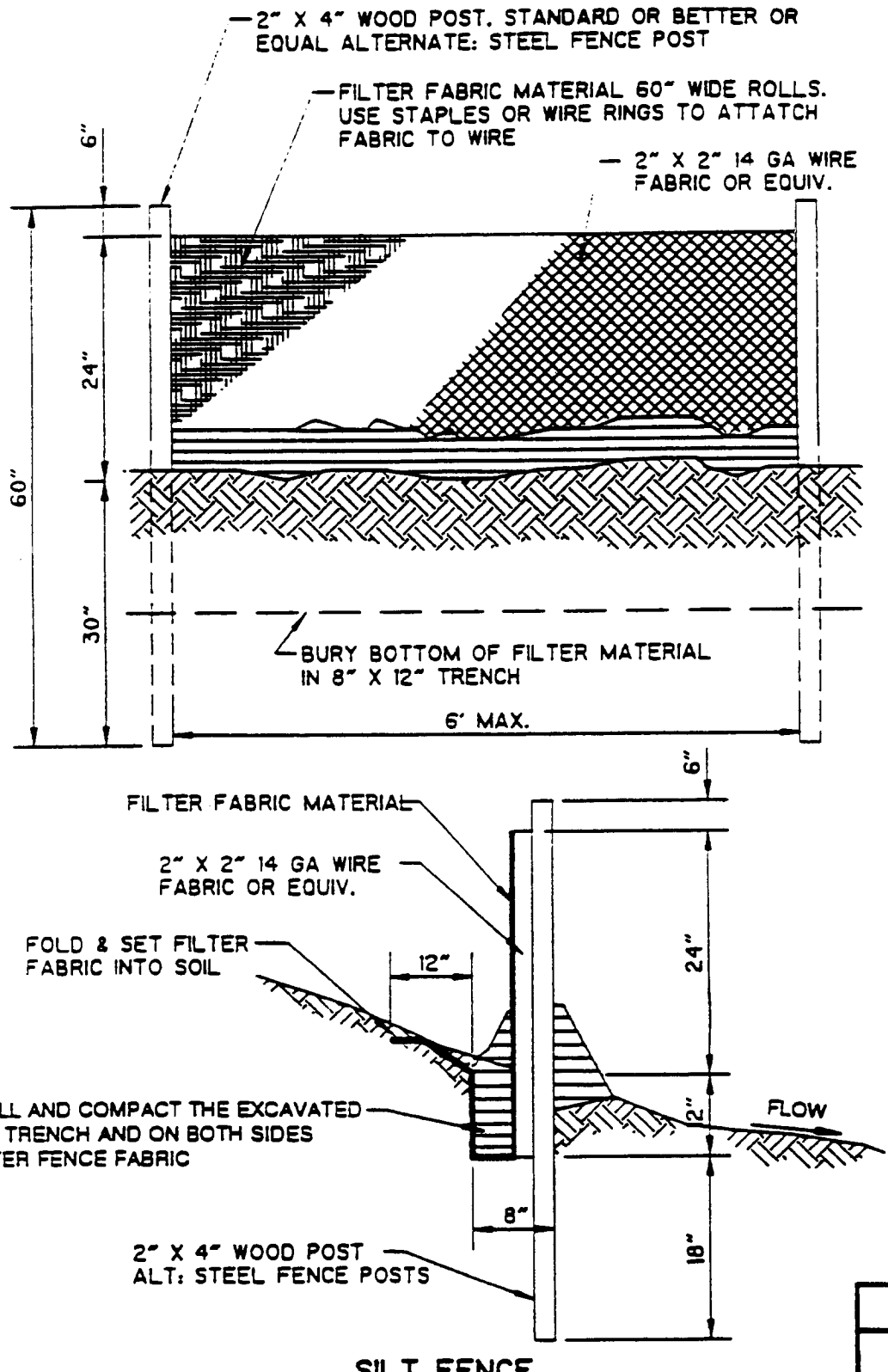
ESC50

R0000585

Additional Information — Silt Fence

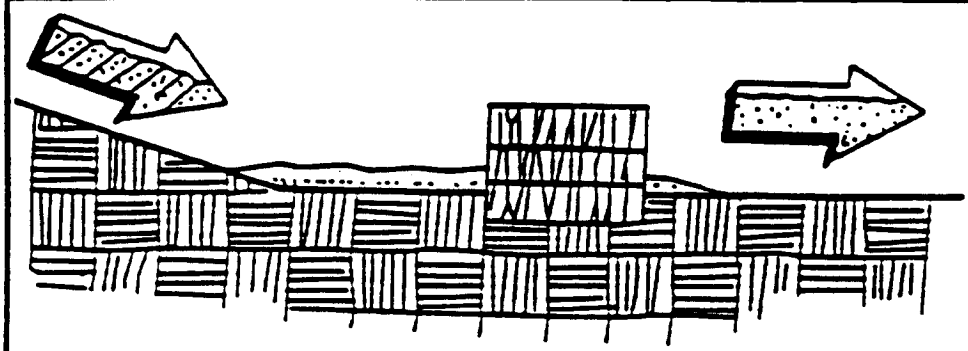


SILT FENCE

ESC50

R0000586

BMP: STRAW BALE BARRIERS



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- (Control Site Perimeter)
- (Control Internal Erosion)

GENERAL DEFINITION

A straw bale barrier consists of straw bales placed end to end along a level contour in a shallow trench and staked to hold them in place. The barrier detains runoff, creating a pond behind the barrier where sedimentation occurs.

SUITABLE APPLICATIONS

- Along the perimeter of the site.
- Along streams and channels.
- Across swales with small catchments.
- Around temporary spoil areas.
- Below other small, cleared areas.

INSTALLATION/APPLICATION CRITERIA

- Use primarily in areas where sheet or rill flow occurs.
- No more than 1/4 acre per 100 feet of barrier should drain to the barrier.
- Install along a level contour.
- Place in a 4-inch deep trench.
- Backfill and compact the excavated soil on the upstream face of the barrier.
- Secure each bale with two stakes.
- Leave enough area (about 1200 sq. ft. per acre) behind the barrier for runoff to pond (no more than 1.5 ft. depth) and sediment to settle.

REQUIREMENTS

- Maintenance
  - Inspect weekly and after each rain.
  - Replace bales which have decomposed or whose bindings have broken.
  - Remove sediment behind the barrier when it reaches a depth of 6 inches.
- Costs (source: EPA, 1992)
  - Average annual cost for installation and maintenance (assumes 3 month useful life): $17 per lineal foot ($6,800 per drainage acre).

LIMITATIONS

- Straw bale barriers are not to be used for extended periods of time because they tend to rot and fall apart.
- Suitable only for sheet flow on slopes of 2% or flatter.
- Not appropriate for large drainage areas, limit to one acre or less.
- Straw bales lose their effectiveness rapidly due to rotting, thus constant maintenance is required.
- Not recommended for concentrated flow, inlet protection, channel flow, and live streams.
- Bale bindings of jute or cotton not recommended.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ● Capital Costs
- ● O&M Costs
- ● Maintenance
- ○ Training
- ○ Suitibility for Slopes >5%

● High ○ Low

ESC51

Best Management Practices

R0000587

BMP: STRAW BALE BARRIERS (Continue)

- Straw bale barriers have not been as effective as expected due to improper use. These barriers have been placed in streams and drainageways where runoff volumes and velocities have caused the barriers to wash out. In addition, failure to stake and entrench the straw bale has allowed undercutting and end flow.

ESC51

R0000588

Additional Information — Straw Bale Barrier

A straw bale barrier consists of a series of secured anchored bales placed to intercept sediment-laden runoff from small drainage areas of disturbed soil. The barrier ponds runoff and allow sediment to settle. Straw bale dikes should not be used for extended periods of time because they tend to rot and fall apart.

The straw bale barrier is used where there are no concentrations of water in a channel or drainageway, and where erosion would occur from sheet flow. These barriers are typically constructed below disturbed areas subject to sheet flow of runoff.

Installation/Application

Straw bale barriers should be used for drainage areas no more than 1/4 acre per 100 feet of barrier length, with no more than 100 ft upstream of any point along the barrier. The barrier should be placed along a level contour no greater than 2:1. When installed and maintained according to the guidelines on this fact sheet, straw bale dikes remove approximately 67% of the sediment transported in construction site runoff. This optimum efficiency can only be achieved through careful maintenance, with special attention to replacing rotted or broken bales. The barrier should be constructed on a level contour to prevent concentration of flow against a small portion of the barrier.

An effective straw bale barrier should be installed in the following manner:

1. Bales should be placed on the contour and in a row with ends tightly abutting the adjacent bales.
2. Leave area for runoff to pond upstream of the barrier by locating barrier away from the toe of slopes. This also provides access for maintenance.
3. Each bale should be embedded in the soil a minimum of (4) inches and placed so the bindings are horizontal. Bindings placed on soil will soon disintegrate and cause the barrier to fail.
4. Bales should be securely anchored in place by either two stakes or re-bars driven through the bale. The first stake in each bale should be driven toward the previously laid bale at an angle to force the bales together. Stakes should be driven flush with the bale.
5. Backfill and compact the excavated soil along the upstream face of the barrier.
6. Remove the barrier when it has served its usefulness so as not to block or impede storm flow or drainage.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona. September 1992.

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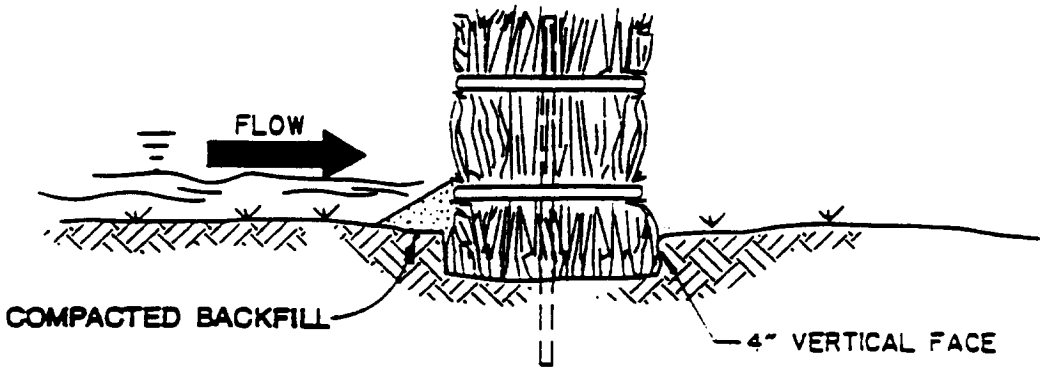
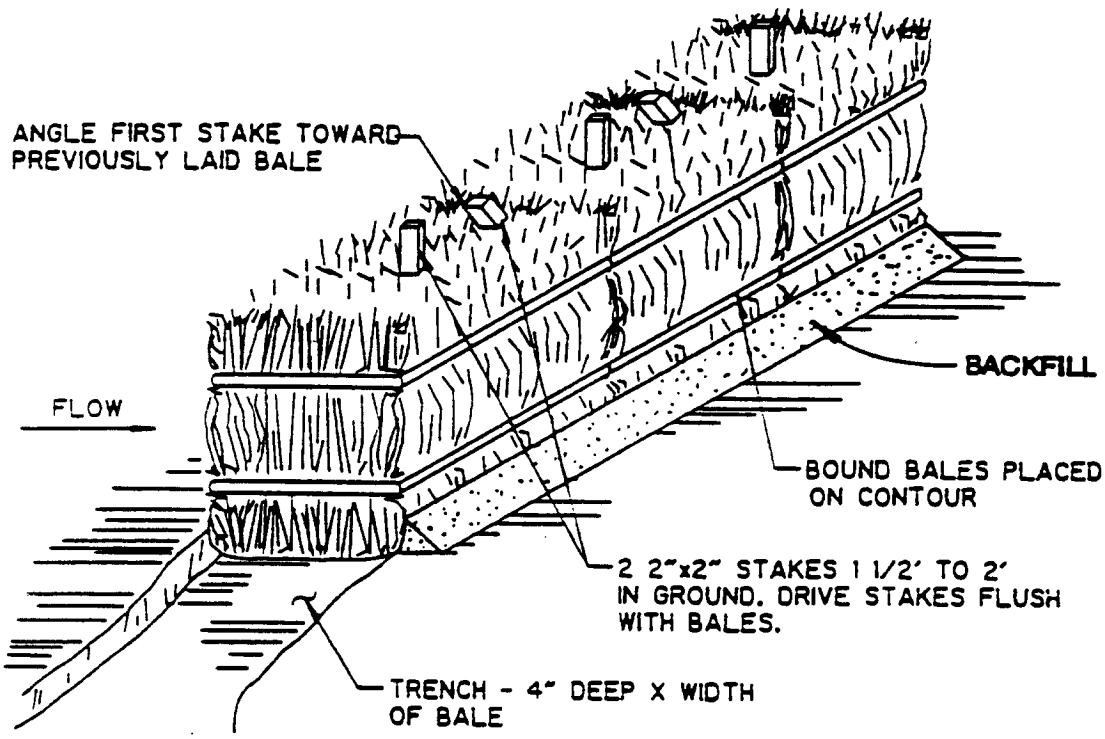
ESC51

Additional Information — Straw Bale Barrier



• PROMOTES ON SITE SEDIMENTATION BY CREATING A TEMPORARY POND.

BEDDING DETAIL



SUBSTITUTION OF STEEL BARS FOR WOODEN STAKES IS NOT RECOMMENDED DUE TO POTENTIAL FOR DAMAGING CONSTRUCTION EQUIPMENT

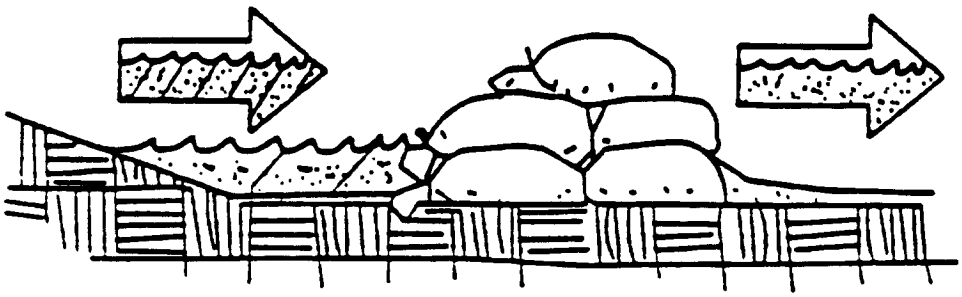
ANCHORING DETAIL

STRAW BALE BARRIERS

R0000590

ESC51

BMP: SAND BAG BARRIER



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

GENERAL DEFINITION

Stacking sand bags along a level contour creates a barrier which detains sediment-laden water, ponding water upstream of the barrier and promoting sedimentation.

SUITABLE APPLICATIONS

- Along the perimeter of the site.
- Check dams across streams and channels.
- Along streams and channels.
- Barrier for utility trenches in a channel.
- Across swales with small catchments.
- Division dike or berm.
- Below the toe of a cleared slope.
- Create a temporary sediment trap.
- Around temporary spoil areas.
- Below other small cleared areas.

INSTALLATION/APPLICATION CRITERIA

- May be used in drainage areas up to 5 acres.
- Install along a level contour.
- Base of sand bag barrier should be at least 48 inches wide.
- Height of sand bag barrier should be at least 18 inches high.
- 4 inch PVC pipe may be installed between the top layer of sand bags to drain large flood flows.
- Provide area behind barrier for runoff to pond and sediment to settle, size according to sediment trap BMP criteria (ESC55).
- Place below the toe of a slope.
- Use sand bags large enough and sturdy enough to withstand major flooding.

REQUIREMENTS

- Maintenance
  - Inspect after each rain.
  - Reshape or replace damaged sand bags immediately.
  - Remove sediment when it reaches six inches in depth.
- Cost
  - Sand bag barriers are more costly, but typically have a longer useful life than other barriers.

LIMITATIONS

- Sand bags are more expensive than other barriers, but also more durable.
- Burlap should not be used for sand bags.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ● Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

ESC52

Best Management Practices

Additional Information — Sand Bag Barrier

Suitable Applications

Sand bag berms may be used during construction activities in stream beds and utility construction in channels, temporary channel crossing for construction equipment, etc. Sand bag berms may also be installed parallel to roadway construction. Sand bag berms may also be used to create temporary sediment traps, retention basins and in place of straw bales or silt fences. Examples of applications include:

- Check dams across stream channels.
- Barriers for utility trenches or other construction in a stream channel.
- At temporary channel crossings.
- May be used on a slope where straw bales and silt fences are not appropriate.
- As a diversion dike.
- Embankment for a temporary sediment basin or retention basin.
- Sediment barriers near the toe of slopes.
- At construction perimeter.

Advantages

- Provides a semi-permeable barrier in potentially wet areas.
- More permanent than silt fences or straw bales.
- Allows for easy relocation on site to meet changing needs during construction.

Installation/Application

Sand bag barriers may be used for sediment trapping in locations where silt fences and straw bale barriers are not strong enough. In addition, sand bag barriers are appropriate to use when construction of check dams or sumps in a stream is undesirable. The sand bag berms can provide the same function as a check dam without disturbing the stream or vegetation. The sand bag berm will also allow a small sediment retention area to be created prior to construction of final detention basins. For installation of a sand bag berm, the following criteria should be observed:

- Drainage Area - Up to five (5) acres.
- Height of Berm - 18 inches minimum height, measured from the top of the existing ground at the upslope toe to the top of the barrier.
- Width of Berm - 48 inches minimum width measured at the bottom of the barrier; 18 inches at the top.
- Sand bag Size - Length 24 to 30 inches, width 16 to 18 inches and thickness six (6) to eight (8) inches. Weight 90 to 125 pounds.
- Sand bag Material - Polypropylene, polyethylene or polyamide woven fabric, minimum unit weight four (4) ounces per square yard, mullen burst strength exceeding 300 psi and ultraviolet stability exceeding 70 percent. Use of burlap is discouraged since it rots and deteriorates easily.
- Grade of Sand - Coarse sand, gravel.
- Runoff water should be allowed to flow over the tops of the sand bags or through four (4) inch polyvinyl chloride pipes embedded below the top layer of bags.
- Area behind the sand bag barrier should be established according to sizing criteria for sediment trap BMP (ESC55).

REFERENCES

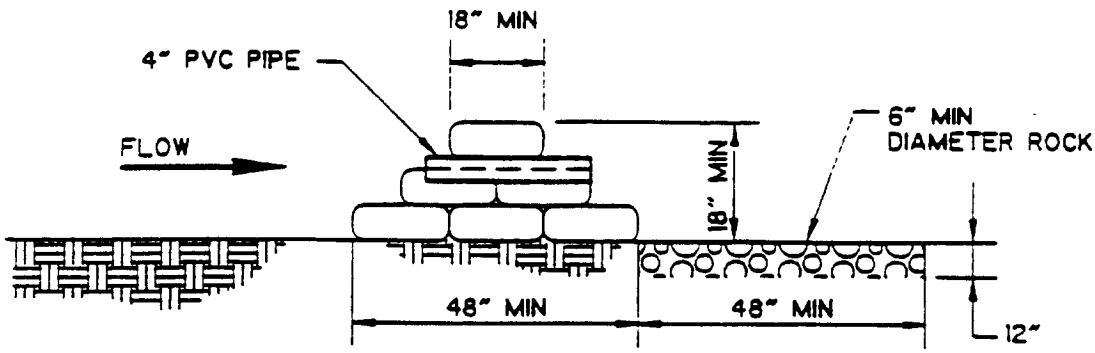
Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC52

R0000592

Additional Information — Sand Bag Barrier



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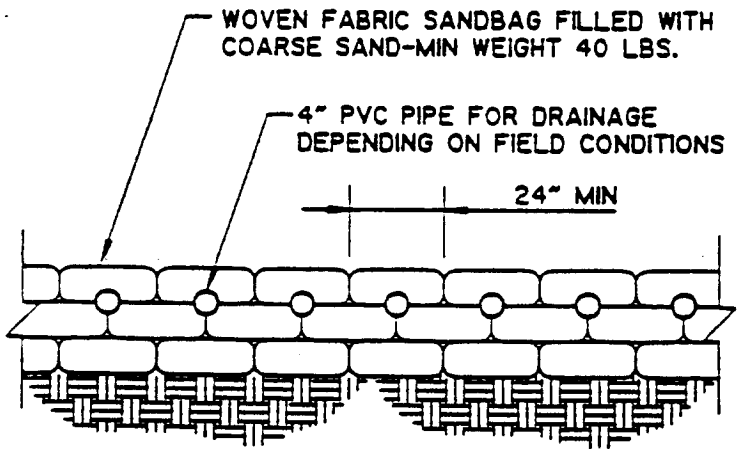


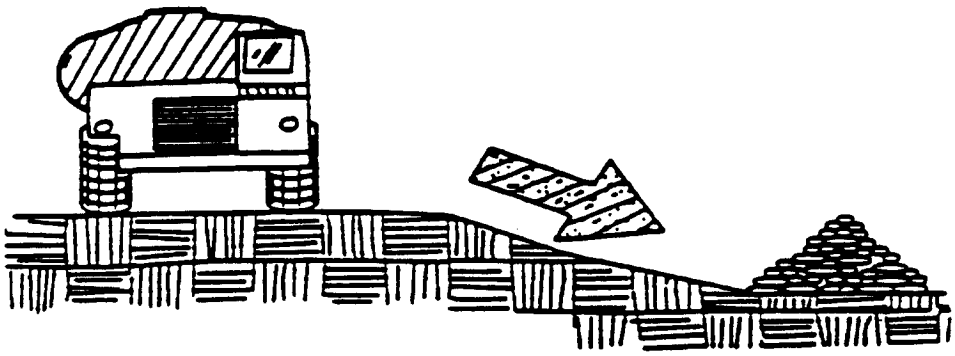
FRONT VIEW

SAND BAG BERM

ESC52

R0000593

BMP: BRUSH OR ROCK FILTER



Objectives

- *Housekeeping Practices*
- *Contain Waste*
- *Minimize Disturbed Areas*
- *Stabilize Disturbed Areas*
- *Protect Slopes/Channels* (●)
- *Control Site Perimeter* (●)
- *Control Internal Erosion* (●)

GENERAL DEFINITION

A rock filter berm is made of rock 3/4 to 3 inches in diameter and placed along a level contour where sheet flow may be detained and ponded, promoting sedimentation. A brush barrier is composed of brush (usually obtained during the site clearing) wrapped in filter cloth and anchored to the toe of the slope. If properly anchored brush or rock filters may be used for sediment trapping and velocity reduction. See Check Dam BMP (ESC41) for more information.

SUITABLE APPLICATIONS

- As check dams across mildly sloped construction roads.
- Below the toe of slopes.
- Along the site perimeter.
- Along streams and channels.
- Around temporary spoil areas.
- Below other small cleared areas.
- At sediment traps at culvert/pipe outlets.

INSTALLATION/APPLICATION CRITERIA

- Use principally in areas where sheet or rill flow occurs.
- For rock filter, use larger rock and place in a staked, woven wire sheathing if placed where concentrated flows occur.
- Install along a level contour.
- Leave area behind berm where runoff can pond and sediment can settle.
- Drainage area should not exceed 5 acres.

REQUIREMENTS

- Maintenance
  - Inspect monthly and after each rainfall.
  - If berm damaged, reshape and replace lost/dislodged rock.
  - Remove sediments when depth reaches 1/3 of berm height, or 1 ft.
- Cost
  - Brush filter: Low to moderate cost if debris from on-site clearing and grubbing is used.
  - Rock filter: Expensive, since off-site materials, hand construction and demolition/ removal are usually required.

Targeted Pollutants

- ● *Sediment*
- ○ *Nutrients*
- ○ *Toxic Materials*
- ○ *Oil & Grease*
- ○ *Floatable Materials*
- ○ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ◒ *Capital Costs*
- ◒ *O&M Costs*
- ○ *Maintenance*
- ○ *Training*
- ◒ *Suitability for Slopes >5%*

● *High* ○ *Low*

ESC53

Best Management Practices

R0000594

BMP: BRUSH OR ROCK FILTER (Continue)

LIMITATIONS

- Rock berms may be difficult to remove.
- Removal problems limit their usefulness in landscaped areas.
- Not appropriate for drainage areas greater than 5 acres.
- Runoff will pond upstream of the filter, possibly causing flooding if sufficient space does not exist.

ESC53

R0000595

Additional Information — Brush or Rock Filter

Rock Filter

A rock filter consists of open graded rock installed at the toe of a slope, along the perimeter of a developing or disturbed area, and as a checkdam across construction roads. Their purpose is to intercept sediment laden runoff from disturbed areas of the site, allow the runoff to pond, promote sedimentation behind the filter, and slowly release the water as sheet flow.

Rock filters are appropriate where a temporary measure is needed to prevent sediments from entering right-of-ways of traffic areas such as near the toe of slopes, incorporated into temporary stabilized construction entrances (ESC 26), or at other locations along the construction site perimeter. Rock filters may also be used as check dams across one or more lanes of construction traffic temporary roads, or unsurfaced rights of way subject to construction traffic.

Advantages of the rock filters are that they may be less costly than other temporary barriers, and are relatively efficient at sediment removal.

Installation/Application:

Planning:

- Rock filters should be placed along a level contour to intercept sheet flow.
- Allow ample room for ponding, sedimentation, and access by sediment removal equipment between the berm and the toes of slopes.
- Flow through the filter should occur as sheet flow into an undisturbed or stabilized area.
- Installation in stream beds requires large rock, staking of woven wire sheathing, and daily inspection.

Design & Sizing Criteria:

The following design criteria are commonly used to construct filters:

- In Non-Traffic Areas:
  - Maximum flow-through rate per square foot of filter = 60 gpm
  - Height = 18 inches minimum
  - Top width = 24 inches minimum
  - Side slopes = 2:1 or flatter
  - Woven wire sheathing (poultry netting) is recommended in areas of concentrated flow. The wire should be 1 inch diameter hexagonal mesh, galvanized 20 gauge.
  - Build the filter along on a level contour.
  - Rock: 3/4 to 3 inches open graded for sheet flow, 3 to 5 inches open graded for concentrated flow.

- In Construction Traffic Areas:
  - Height = 12" maximum
  - Provide multiple filters in series, spaced as shown.
    Every 300 ft on slopes less than 5 percent
    Every 200 ft on slopes 5 to 10 percent
    Every 100 ft on slopes greater than 10 percent.

Brush Filter

Brush filters trap and filter sediments in a manner similar to other barriers in this handbook (e.g., silt fence, straw bale barrier, rock filter), but have the advantage of being constructed from brush cleared from the site and usually disposed off-site at a cost.

ESC53

R0000596

Additional Information — Brush or Rock Filter

Steps in Construction of a Brush Filter:

1. Stack the brush at the toe of a slope or along the perimeter of the site just outside the limits of clearing and grabbing. The brush may be stacked up to 15 ft. high and 15 ft. wide.
2. Construct a trench 1 to 3 ft. deep immediately upslope from the brush.
3. Place filter fabric over the brush filter and in the trench, extending 1 to 2 ft. upslope of the trench.
4. Backfill the trench with aggregate or compacted soil. The trench should be deep enough and backfill material sufficient to hold the barrier in place during a storm.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September1992.

Handbook of Steel Drainage & Highway Construction, American Iron and Steel Institute, 1983.

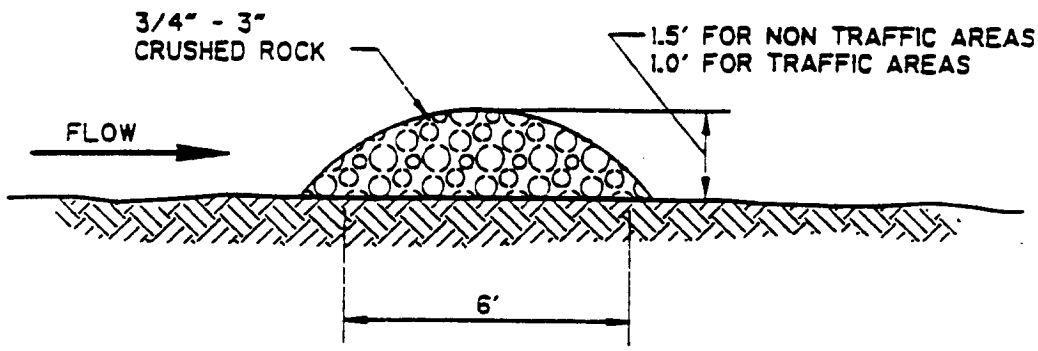
Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

Storm Water Pollution Plan Handbook, First Edition, State of California, Department of Transportation Division of New Technology, Materials and Research, October 1992.

ESC53

R0000597

Additional Information — Brush or Rock Filter



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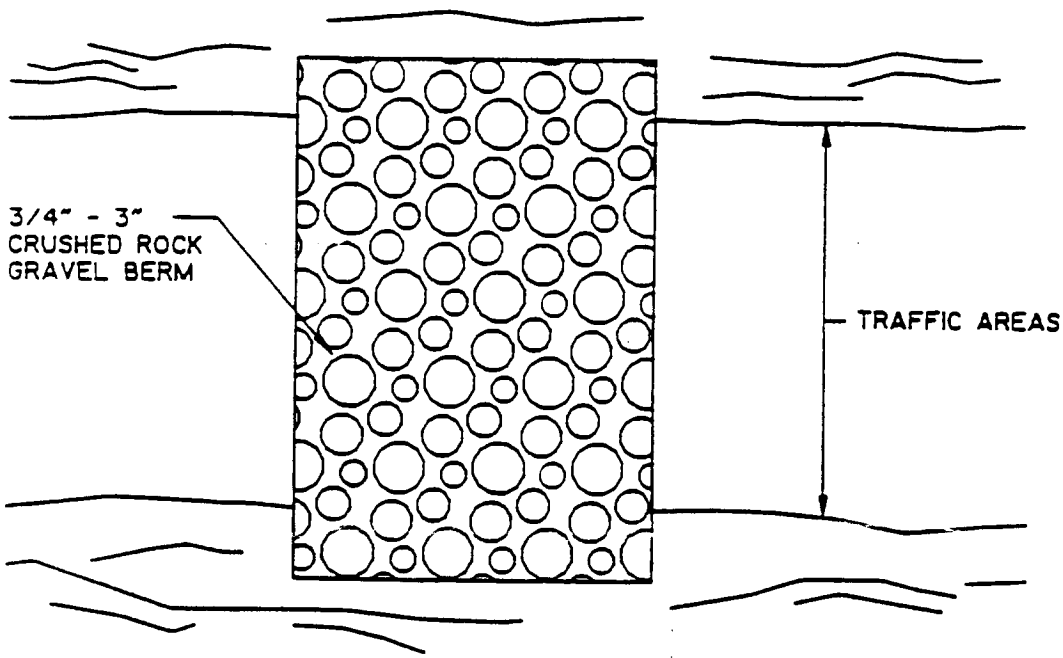


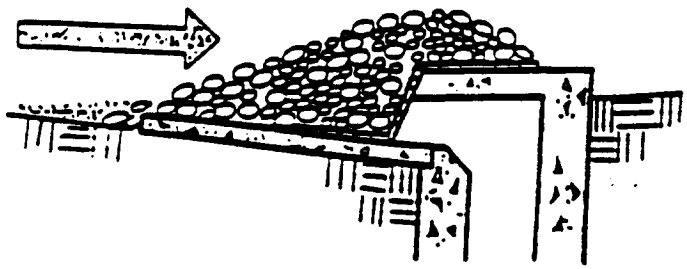
PLAN

GRAVEL FILTER BERM

ESC53

R0000598

BMP: STORM DRAIN INLET PROTECTION



Objectives

- *Housekeeping Practices*
- *Contain Waste*
- *Minimize Disturbed Areas*
- *Stabilize Disturbed Areas*
- *Protect Slopes/Channels*
- *Control Site Perimeter*
- *Control Internal Erosion*

GENERAL DEFINITION

Devices of various designs which detain sediment-laden runoff and allow the sediment it to settle prior to discharge into a storm drain inlet or catch basin.

SUITABLE APPLICATIONS

- Every storm drain inlet receiving sediment-laden runoff should be protected, either by covering the inlet or promoting sedimentation upstream of the inlet.

INSTALLATION/APPLICATION

- Five types of inlet protection are presented below, however, it is recognized that other effective methods and proprietary device, exist and may be selected:
  - Filter Fabric Fence: Appropriate for drainage basins less than one acre with less than a 5 percent slope.
  - Block and Gravel Filter: Appropriate for flows greater than 0.5 cfs.
  - Gravel and Wire Mesh Filter: Used on curb or drop inlets where construction equipment may drive over the inlet.
  - Sand bag barrier: Used to create a small sediment trap upstream of inlets on sloped, paved streets.
  - Excavated Drop Inlet Sediment Trap: An excavated area around the inlet to trap sediment (see Sediment Trap ESC 55).
- Select the appropriate type of inlet protection and design as referred to or as described in this fact sheet.
- Use only for drainage areas smaller than one acre unless a sediment trap first intercepts the runoff.
- Provide area around the inlet for water to pond without flooding structures and property.

REQUIREMENTS

- Maintenance
  - Inspect weekly and after each rain.
  - Replace clogged filter fabric or stone filters immediately.
  - Remove sediment when depth exceeds half the height of the filter, or half the depth of the sediment trap.
  - Remove as soon as upstream soils are stabilized and streets are swept.
- Cost (source: EPA, 1992)
  - Average annual cost for installation and maintenance (1 year useful life) is $150 per inlet.

R0000599

Targeted Pollutants

- ● *Sediment*
- ○ *Nutrients*
- ○ *Toxic Materials*
- ○ *Oil & Grease*
- ◒ *Floatable Materials*
- ○ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ◒ *Capital Costs*
- ○ *O&M Costs*
- ◒ *Maintenance*
- ○ *Training*
- ○ *Suitability for Slopes >5%*

● *High* ○ *Low*

ESC54

Best Management Practices

BMP: STORM DRAIN INLET PROTECTION (Continue)

LIMITATIONS

- Drainage area should not exceed 1 acre.
- Runoff will bypass protected inlets on slopes.
- Ponding will occur at a protected inlet, with possible short-term flooding.
- Straw bales are <u>not</u> effective for inlet protection.

R0000600

ESC54

Additional Information — Storm Drain Inlet Protection

Storm drain inlet protection consists of a sediment filter or an impounding area around or upstream of a storm drain, drop inlet, or curb inlet. This erosion and sedimentation control BMP prevents excessive sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

All on-site storm drain inlets should be protected. Off-site, inlets should be protected in areas where construction activity tracks sediment onto paved areas or where inlets receive runoff from disturbed areas.

Installation/Application Criteria

Planning

Large amounts of sediment may enter the storm drain system when storm drains are installed before the upslope drainage area is stabilized, or where construction is adjacent to an existing storm drain. In cases of extreme sediment loading, the storm drain itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the system at the inlets.

Inlet control measures presented in this handbook should not be used for inlets draining more than one acre. Runoff from larger disturbed areas should be first routed through a Temporary Sediment Trap (see ESC 56). Different types of inlet protection are appropriate for different applications depending on site conditions and the type of inlet. Inlet protection methods not presented in this handbook should be approved by the local storm water management agency.

General Design and sizing criteria:

- Grates and spaces around all inlets should be sealed to prevent seepage of sediment-laden water.
- Excavate sediment sumps (where needed)1 to 2 feet with 2:1 side slopes around the inlet.

Installation procedures for filter fabric fence:

a. Place 2 inch by 2 inch wooden stakes around the perimeter of the inlet a maximum of 3 feet apart and drive them at least 8 inches into the ground. The stakes must be at least 3 feet long.
b. Excavate a trench approximately 8 inches wide and 12 inches deep around the outside perimeter of the stakes.
c. Staple the filter fabric (for materials and specifications, see Silt Fence ESC 50) to wooden stakes so that 32 inches of the fabric extends out and can be formed into the trench. Use heavy-duty wire staples at least one inch in length.
d. Backfill the trench with 3/4 inch or less washed gravel all the way around.

Installation procedure for block and gravel filter:

a. Place hardware cloth or comparable wire mesh with one-half inch openings over the drop inlet so that the wire extends a minimum of 1 foot beyond each side of the inlet structure. If more than one strip is necessary, overlap the strips. Place filter fabric over the wire mesh.
b. Place concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, so that the open ends face outward, not upward. The ends of adjacent blocks should abut. The height of the barrier can be varied, depending on design needs, by stacking combinations of blocks that are 4 inches, 8 inches, and 12 inches wide. The row of blocks should be at least 12 inches but no greater than 24 inches high.
c. Place wire mesh over the outside vertical face (open end) of the concrete blocks to prevent stone from being washed through the blocks. Use hardware cloth or comparable wire mesh with one half inch openings.
d. Pile washed stone against the wire mesh to the top of the blocks. Use 3/4 to 3 inch gravel.

Installation procedure for gravel and wire mesh filters:

a. Place wire mesh over the drop inlet so that the wire extends a minimum of 1 foot beyond each side of the inlet structure. Use hardware cloth or comparable wire mesh with one-half inch openings. If more than one strip of mesh is necessary, overlap the strips. Place filter fabric over wire mesh.

ESC54

R0000601

Additional Information — Storm Drain Inlet Protection

b. Place 3/4 to 3 inch gravel over the filter fabric/wire mesh. The depth of the gravel should be at least 12 inches over the entire inlet opening (see attached figure).

Installation procedure for sand bag barrier:

a. Use sand bag made of geotextile fabric (not burlap), and fill with 3/4 in. rock or 1/4 in. pea gravel.
b. Construct on gently sloping street.
c. Leave room upstream of barrier for water to pond and sediment to settle.
d. Place several layers of sand bags—overlapping the bags and packing them tightly together.
e. Leave gap of one bag on the top row to serve as a spillway. Flow from a severe storm (e.g., 10-year storm) should not overtop the curb.

Maintenance Requirements

- For filter fabric fences: Inspections should be made on a regular basis, especially after large storm events. If the fabric becomes clogged, it should be replaced. Sediment should be removed when it reaches approximately one-half the height of the fence. If a sump is used, sediment should be removed when it fills approximately one-half the depth of the hole.
- For gravel filters: If the gravel becomes clogged with sediment, it must be carefully removed from the inlet, and either cleaned or replaced. Since cleaning gravel at a construction site may be difficult, use the sediment-laden stone instead as fill and put fresh stone around the inlet.
- The inlet protection should be removed 30 days after the upslope area has been fully stabilized. Any sediment around the inlet must be carefully removed and disposed.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

"Draft - Sedimentation and Erosion Control, An Inventory of Current Practices", U.S.E.P.A., April, 1990.

Erosion and Sediment Control Handbook, S.J. Goldman, K. Jackson, T.A. Bursetynsky, P.E., McGraw Hill Book Company.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, June 1981.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April, 1992.

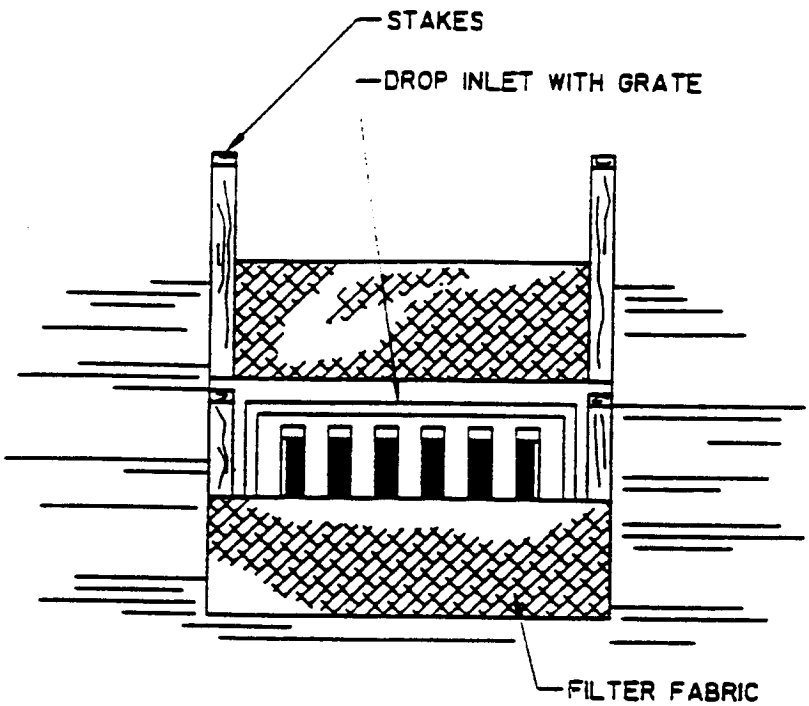
Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

Storm Water Pollution Prevention Handbook, First Edition, State of California, Department of Transportation Division of New Technology, Materials, and Research, October 1992.

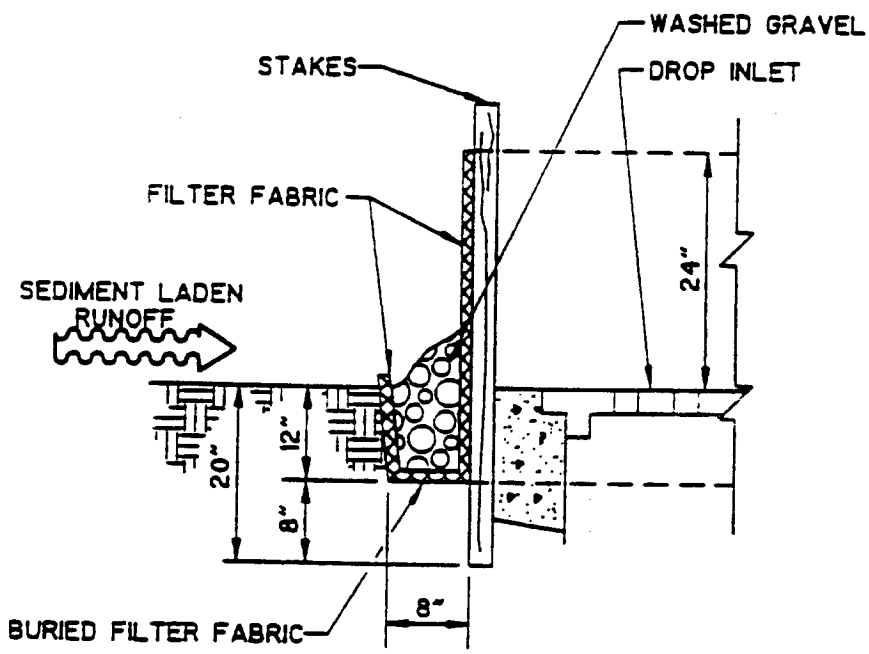
ESC54

R0000602

Additional Information — Storm Drain Inlet Protection



ELEVATION

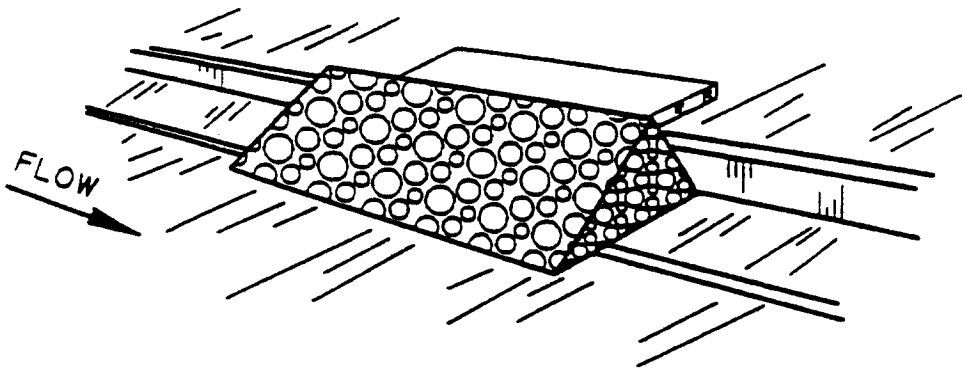


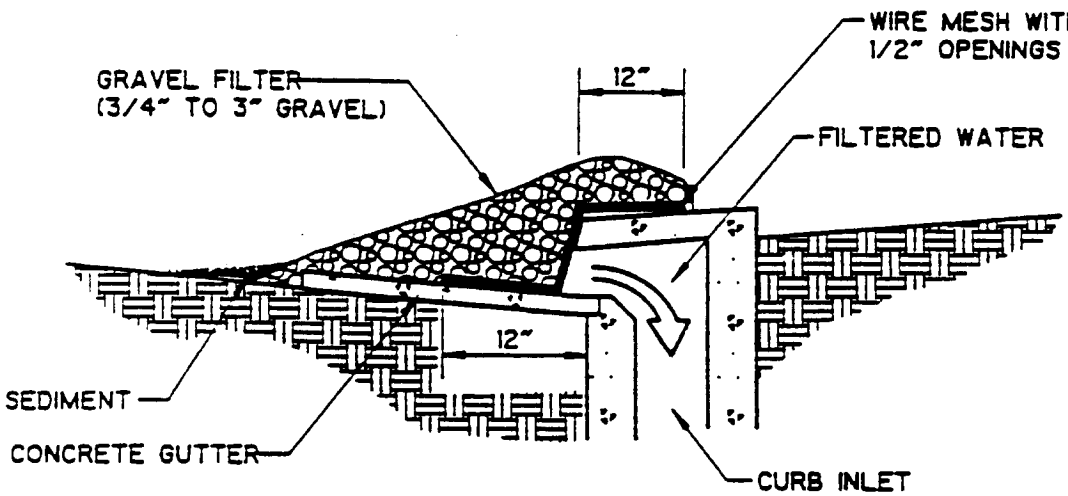
PROFILE

FILTER FABRIC FENCE DROP INLET FILTER

R0000603

ESC54

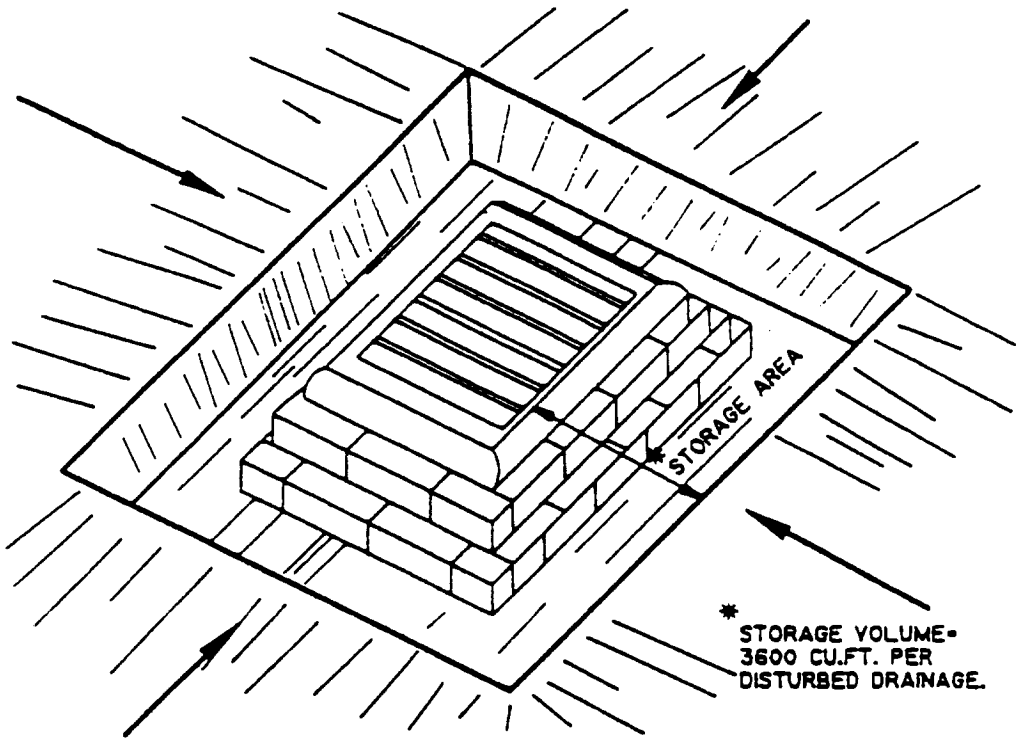


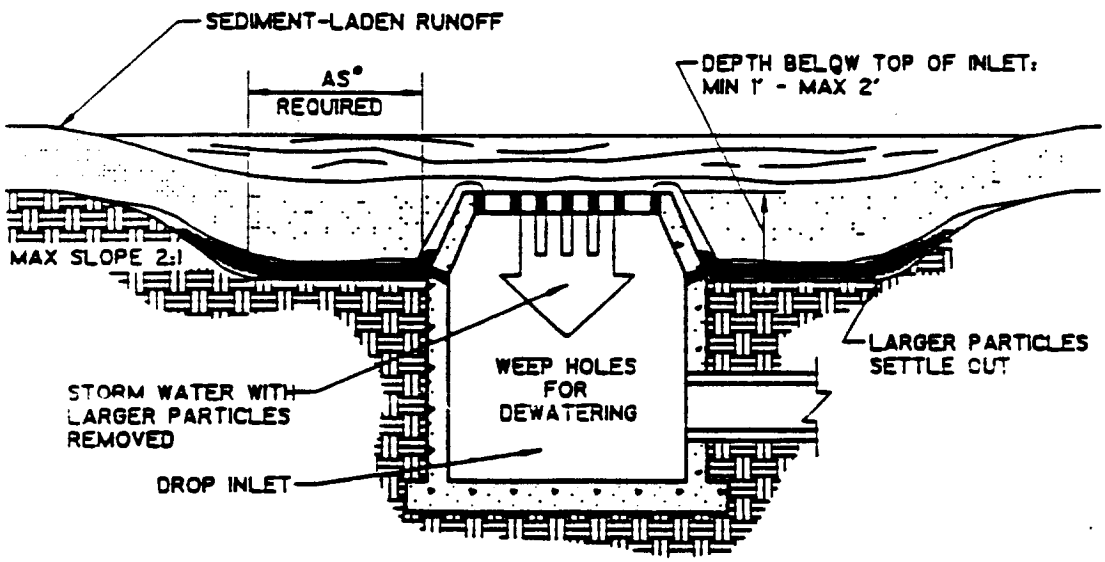


GRAVEL AND WIRE MESH FILTER FOR CURB INLET

ESC54

R0000604





SPECIFIC APPLICATION

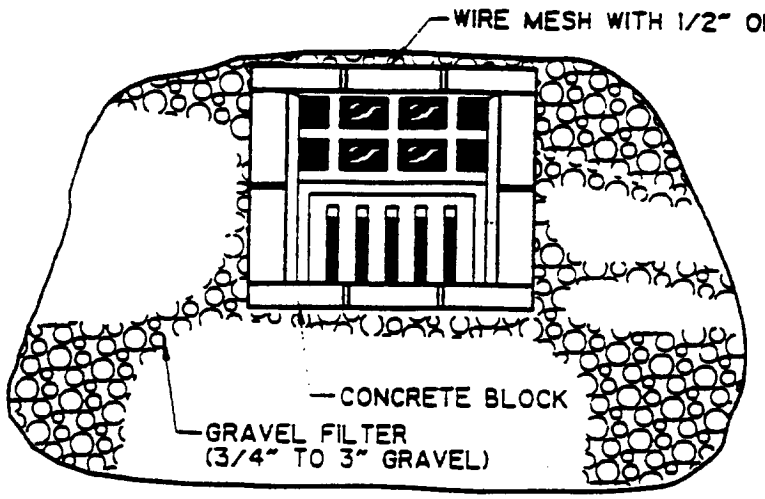
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPABILITY AND EASE OF MAINTENANCE ARE DESIRABLE.

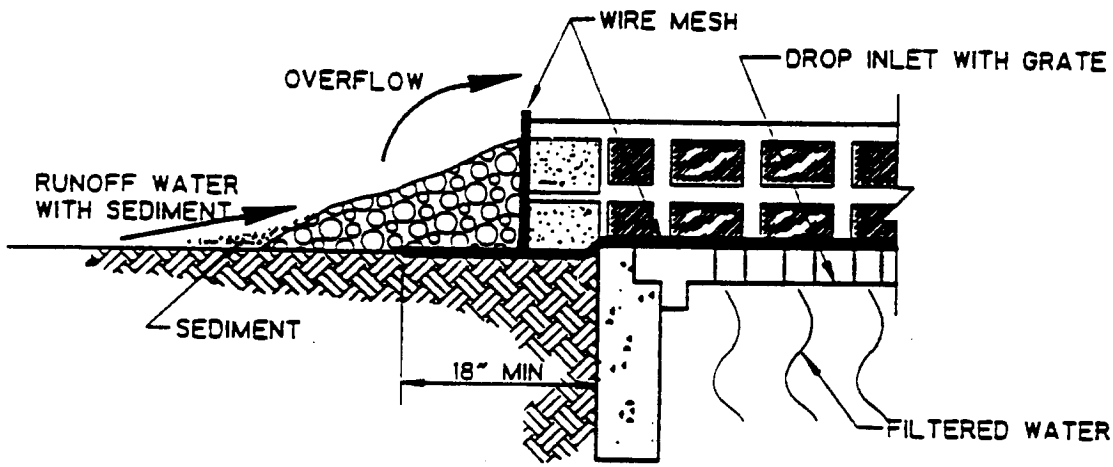
EXCAVATED DROP INLET SEDIMENT TRAP

ESC54

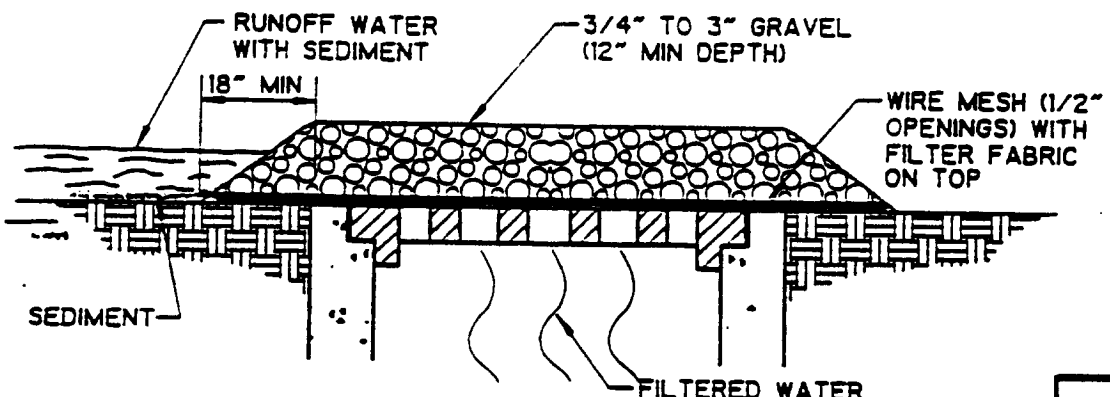
R0000605

Additional Information — Storm Drain Inlet Protection





BLOCK AND GRAVEL FILTER AT DROP INLET

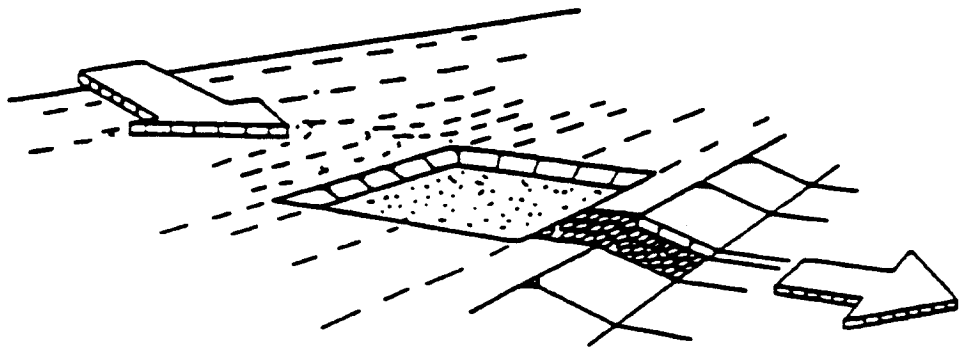


GRAVEL AND WIRE MESH FILTER FOR DROP INLET

R0000606

ESC54

BMP: SEDIMENT TRAP



Objectives

- *Housekeeping Practices*
- *Contain Waste*
- *Minimize Disturbed Areas*
- *Stabalize Disturbed Areas*
- *Protect Slopes/Channels*
- *Control Site Perimeter*
- *Control Internal Erosion*

GENERAL DEFINITION

A sediment trap is a small, excavated or bermed area where runoff from small drainage areas is detained and sediment can settle.

SUITABLE APPLICATIONS

- Any disturbed area less than 5 acres. (Sediment Basins, ESC56, must be used for drainage areas greater than 5 acres).
- Along the perimeter of the site at locations where sediment-laden runoff is discharged off-site.
- Around and/or upslope from storm drain inlet protection measures.
- At any point within the site where sediment-laden runoff can enter stabilized or natural areas or waterways.

INSTALLATION/APPLICATION CRITERIA

- Build outside the area to be graded before clearing, grubbing, and grading begin.
- Locate where the trap can be easily cleared of sediment.
- Trap size depends on the type of soil, size of the drainage area, and desired sediment removal efficiency.
- The larger the trap, the less frequently sediment must be removed.
- The outlet of the trap must be stabilized with rock, vegetation, or another suitable material.
- A stable emergency spillway must be installed to safely convey major floods (see your local flood control agency).

REQUIREMENTS

- Maintenance
  - Remove sediment when the sediment storage zone is no more than 1 ft. from being full.
  - Inspect weekly and after each rain.
- Cost (source: EPA, 1992)
  - Average annual cost per installation and maintenance (18 month useful life) is $0.70 per $ft.^3$ ($1,300 per drainage acre).

LIMITATIONS

- Only use for drainage areas up to 5 acres (see Sedimentation Basin BMP ST8 for larger areas).
- Only removes coarse sediment (medium silt size and larger) unless sized like a sedimentation basin.

Targeted Pollutants

- ● *Sediment*
- ○ *Nutrients*
- ◒ *Toxic Materials*
- ○ *Oil & Grease*
- ○ *Floatable Materials*
- ○ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ○ *Capital Costs*
- ◒ *O&M Costs*
- ○ *Maintenance*
- ○ *Training*
- ○ *Suitability for Slopes >5%*

● *High* ○ *Low*

ESC 55

Best Management Practices

R0000607

Additional Information — Sediment Trap

A sediment trap is a small temporary ponding area, usually with a gravel outlet, formed by excavation and/or by constructing an earthen embankment. Its purpose is to collect and store sediment from sites cleared and/or graded during construction. It is intended for use on small drainage areas, with no unusual drainage features, and projected for a quick build-out time. It should help in removing coarse sediment from runoff. The trap is a temporary measure with a design life of approximately 6 months, and is to be maintained until the site area is permanently protected against erosion by vegetation and/or structures.

Application Criteria

Planning:

Sediment traps should be used only for small drainage areas. If the contributing drainage area is greater than 5 acres, refer to Sediment Basins (ST8), or subdivide the catchment area into smaller drainage basins.

Sediment usually must be removed from the trap after each rainfall event. The SWPPP should detail how this sediment is to be disposed of, such as for in fill areas on-site, or removal to an approved off-site dump. Sediment traps used as a perimeter control should be installed before any land disturbance takes place in the drainage area.

Sediment traps are usually small enough that a failure of the structure would not result in a loss of life, damage to home or buildings, or interruption in the use of public roads or utilities. Also, sediment traps are attractive to children and can be dangerous. The following recommendations should be implemented to reduce risks.

1. Install continuous fencing around the sediment trap or pond. Consult local ordinances regarding requirements for maintaining health and safety.
2. Restrict basin side slopes to 3:1 or flatter.

Design:

Sediment trap size depends on the type of soil, size of the drainage area, and desired sediment removal efficiency (see Sedimentation Basin ESC56). As a rule of thumb, the larger the basin volume the greater the sediment removal efficiency. Sizing criteria are typically established under the local grading ordinance or equivalent. The runoff volume from a two-year, 24-hour storm is a common design criteria for sedimentation trap. The sizing criteria below assume that this runoff volume is 0.042 ac-ft/ac (0.5 inches of runoff). While the climatic, topographic, and soil type extremes make it difficult to establish a statewide standard, the following criteria should trap moderate to high amounts of sediment in most areas of California.

- Trap settling volume at least 67 cu. yd. per acre.
- Trap sediment storage volume at least 33 cu. yd. per acre (note: the larger this volume, the less frequently the trap must be cleaned out).
- Trap length greater than twice the basin width.
- Flood volume large enough to contain a major flood without upstream damage and overtopping the embankment.

Installation

Sediment traps can be constructed by excavating a depression in the ground or creating an impoundment with a barrier or low-head dam. Sediment traps should be installed outside the area being graded and should be built prior to the start of the grading activities or removal of vegetation. To minimize the area disturbed by them, sediment traps should be installed in natural depressions or in small swales or drainageways. The following steps must be followed during installation.

1. The area under the embankment must be cleared, grubbed, and stripped of any vegetation and root mat. The pool area should be cleared.
2. The fill material for the embankment must be free of roots or other woody vegetation as well as oversized stones, rocks, organic material, or other objectionable material. The embankment may be compacted by traversing with equipment while it is being constructed.

ESC55

R0000608

Additional Information — Sediment Trap

3. The trap is removed and the area stabilized when the upslope drainage area has been properly stabilized.
4. All cut-and-fill slopes should be 3:1 or flatter.
5. When a riser is used, all pipe joints must be watertight.
6. When a riser is used, at least the top two-thirds of the riser shall be perforated with 1/2-inch diameter holes spaced 8 inches vertically and 10 to 12 inches horizontally. (See Sediment Basin, ESC56)
7. When an earth or stone outlet is used, the outlet crest elevation should be at least 1 foot below the top of the embankment.
8. When a crushed stone outlet is used, the crushed stone used in the outlet should meet AASHTO M43, size No. 2 or 24, or its equivalent such as MSHA No. 2. Gravel meeting the above gradation may be used if crushed stone is not available.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Rough Draft - July 1992.

"Draft - Sedimentation and Erosion Control, An Inventory of Current Practices", U.S.E.P.A., April, 1990.

"Environmental Criteria Manual", City of Austin, Texas.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, June 1981.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April, 1992.

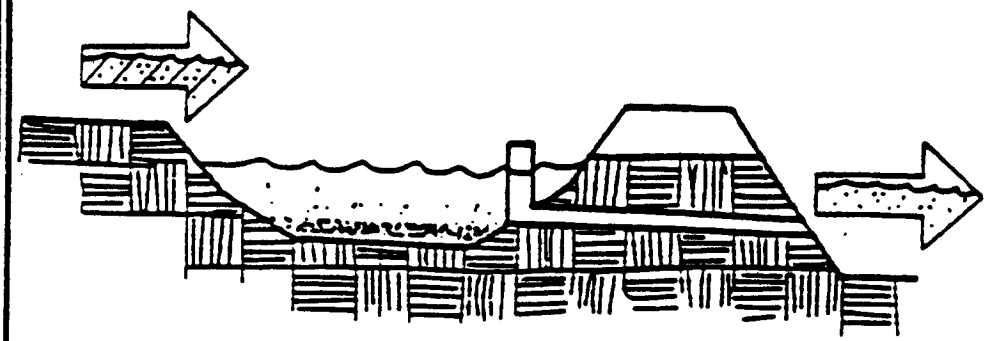
Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC55

R0000609

BMP: SEDIMENT BASIN



Objectives

- *Housekeeping Practices*
- *Contain Waste*
- *Minimize Disturbed Areas*
- *Stabalize Disturbed Areas*
- *Protect Slopes/Channels*
- *Control Site Perimeter*
- *Control Internal Erosion* (●)

GENERAL DEFINITION

A pond created by excavation or constructing an embankment, and designed to retain or detain runoff sufficiently to allow excessive sediment to settle.

SUITABLE APPLICATIONS

- At the outlet of all disturbed watershed 10 acres or larger.
- At the outlet of smaller disturbed watersheds, as necessary.
- Where post construction detention basins will be located.
- Should be used in association with dikes, temporary channels, and pipes used to divert disturbed areas into the basin and undisturbed areas around the basin.

INSTALLATION/APPLICATION

- Construct before clearing and grading work begins.
- Do not locate in a stream.
- All basin sites should be located where failure of the embankment would not cause loss of life/property damage.
- Large basins are subject to state/local dam safety requirements.
- Securely anchor and install an anti-seep collar on the outlet pipe/riser, and provide an emergency spillway for passing major floods (see local flood control agency).
- The basin volume should be sized to capture runoff from a 2-year, 24-hour storm, or other appropriate design storms specified by the local agency. A detention time of 24 to 40 hours should allow 70 to 80 percent of sediment to settle.
- The basin volume consists of two zones:
  - A sediment storage zone at least 1 foot deep.
  - A settling zone at least 2 feet deep.
- The length to settling depth ratio (L/SD) should be less than 200.
- The length to width ratio should be greater than 6:1, or baffles are required to prevent short circuiting.

REQUIREMENTS

- Maintenance
  - Inspect weekly and after each rain.
  - Remove sediment where the sediment storage zone is half full.
- Cost: Average annual cost for installation and maintenance (2 year useful life, source: EPA, 1992)
  - Basin less than 50,000 $ft.^3$: $0.40 per $ft.^3$ ($700 per drainage acre)
  - Basin size greater than 50,000 $ft.^3$: $0.20 per $ft.^3$ ($350 per drainage acre)

Targeted Pollutants

- ● *Sediment*
- ○ *Nutrients*
- ◒ *Toxic Materials*
- ○ *Oil & Grease*
- ○ *Floatable Materials*
- ○ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ○ *Capital Costs*
- ◒ *O&M Costs*
- ○ *Maintenance*
- ○ *Training*
- ○ *Suitability for Slopes >5%*

● *High* ○ *Low*

ESC56

Best Management Practices

R0000610

BMP: SEDIMENT BASIN (Continue)

LIMITATIONS

- The basin should have shallow side slopes (minimum 4:1) or be fenced to prevent drowning.
- Sites with very fine sediments (fine silt and clay) may require longer detention times for effective sediment removal.
- Basins in excess of 25 feet height and/or an impounding capacity of 50 ac. ft. must obtain approval from Division of Safety of Dams.
- Standing water may cause mosquitos or other pests to breed.
- Basins in excess of certain depth and storage volume criteria must meet State Division of Safety of Dams (DSOD) and local safety requirements.

R0000611

ESC56

Additional Information — Sediment Basin

A sediment basin is a controlled storm water release structure formed by excavation or by constructing an embankment of compacted soil across a drainageway, or other suitable location. Its purpose is to collect and store sediment from sites cleared and/or graded during construction or for extended periods of time before reestablishment of permanent vegetation and/or construction of permanent drainage structures. It is intended to trap sediment before it leaves the construction site. The basin is a temporary measure (with a design life of 12 to 18 months) and is to be maintained until the site area is permanently protected against erosion or a permanent detention basin is constructed.

Sedimentation basins are suitable for nearly all types of construction projects. Whenever possible, construct the sedimentation basins before clearing and grading work begins.
Basins should be located at the stormwater outlet from the site, but not in any natural or undisturbed stream. A typical application would include temporary dikes, pipes, and/or channels to divert runoff to the basin inlet.

Many development projects in California will be required by local ordinances to provide a storm water detention basin for post-construction flood control, desiltation, or storm water pollution control. A temporary sediment basin may be constructed by rough grading the post-construction control basins early in the project.

Sediment basins trap 70-80 percent of the sediment which flows into them if designed according to this handbook. Therefore, they should be used in conjunction with erosion control practices such as temporary seeding, mulching, diversion dikes, etc., to reduce the amount of sediment flowing into the basin.

Installation/Application Criteria
Planning:
To improve the effectiveness of the basin, it should be located to intercept runoff from the largest possible amount of disturbed area. The best locations are generally low areas below disturbed areas. Drainage into the basin can be improved by the use of diversion dikes and ditches. The basin must not be located in a stream but should be located to trap sediment-laden runoff before it enters the stream. The basin should not be located where its failure would result in the loss of life or interruption of the use or service of public utilities or roads.

Design:
- The sedimentation basin volume consists of two zones:
  - The sediment storage zone (at least 1 foot in depth).
  - A settling zone at least 2 feet in depth.
- The sedimentation basin may be formed by partial excavation and/or by construction of a compacted embankment. It may have one or more inflow points.
- A securely anchored riser pipe with an anti-seep collar is the principal outlet, along with an emergency overflow spillway. A solid riser pipe with two 1-inch diameter dewatering holes located at the top of the sediment storage volume on opposite sides of the riser pipe usually provides sufficient detention time for basins draining about 10 acres. Rock, rip-rap, or other suitable outlet protection is provided to reduce erosion at the riser pipe outlet.
- Settling Zone Volume

ESC56

R0000612

Additional Information — Sediment Basin

The settling zone volume is determined by the following equation:

$$(V) = 1.2(SD)Q / V_{SED}$$

Q = design inflow based on the peak discharge from a specified design storm (e.g., a 2-year, 24-hour duration design storm event) from the tributary drainage area as computed using the methods required by the local flood control agency. Provide a minimum of 67 cubic yards of settling volume per acre of drainage if a design storm is not specified.

V_{SED} = the settling velocity of the design soil particle. The design particle chosen is medium silt (0.02 mm). This has a settling velocity (V_{SED}) of 0.00096 ft/sec. As a general rule it will not be necessary to design for a particle of size less than 0.02 mm, especially since the surface area requirement increases dramatically for smaller particle sizes. For example, a design particle of 0.01 mm requires about three times the surface area of 0.02 mm. Note also that choosing V_{SED} of 0.00096 ft/sec equates to a surface area (SA) of 1250 sq. ft. per cfs of inflow.

SD = settling depth, which should be at least 2 ft., and no shallower than the average distance from the inlet to the outlet of the pond (L) divided by 200 (i.e., SD > L/200).

Total sediment basin volume and dimension are determined as outlined below:

a. The details shown in the attached figure may be useful in designing the sediment basin.
b. Determine basin geometry for the sediment storage volume calculated above using a minimum of 1 ft depth and 3:1 side slopes from the bottom of the basin. Note, the basin bottom is level.
c. Extend the basin side slopes (at 3:1 max.) as necessary to obtain the settling zone volume as determined above.
d. Adjust the geometry of the basin to effectively combine the settling zone volume and sediment storage volumes while preserving the depth and side slope criteria.
e. Provide an emergency spillway with a crest elevation one foot above the top of the riser pipe.
f. The ratio between the basin length and width of the pond should either be greater than 6:1, or baffles should be installed to prevent short-circuiting.

Limitations

Sediment traps and ponds must be installed only within the property limits. Failure of the structure must not result in loss of life, damage to homes or buildings, or interruption of use or service of public roads or utilities. Also, sediment traps and ponds are attractive to children and can be very dangerous. Local ordinances regarding health and safety must be adhered to. If fencing of the pond is required, the type of fence and its location shall be shown in the SWPPP and in the construction specifications.

- Generally, temporary sedimentation ponds are limited to drainage of 5 acres or more.
- Sediment ponds may be capable of trapping smaller sediment particles if additional detention time is provided. However, they are most effective when used in conjunction with other BMPs such as seeding or mulching.
- Ponds may become an "attractive nuisance" and care must be taken to adhere to all safety practices.
- Sediment ponds designed according to this handbook are only practically effective in removing sediment down to about the medium silt size fraction. Sediment-laden runoff with smaller size fractions (fine silt and clay) will pass through untreated emphasizing the need to stabilize the soil quickly.

ESC56

R0000613

Additional Information — Sediment Basin

REFERENCES

A Current Assessment of Urban Best Management Practices: Techniques for Reducing Nonpoint Source Pollution in the Coastal Zones, Metropolitan Washington Council of Governments, March, 1992.

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Rough Draft - July 1992.

Draft - Sedimentation and Erosion Control, An Inventory of Current Practices, U.S.E.P.A., April, 1990.

Environmental Criteria Manual, City of Austin, Texas.

Guidlines for the Design and Construction of Small Embankment Dams, Division of Safety of Dams, California Department of Water Resources, March 1986.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, Jun 1981.

Proposed Guidance Specifying Mnangement Measures for Sources of Nonpoint Pollution in Coastal Water, Work Group Working Paper, USEPA, April, 1992.

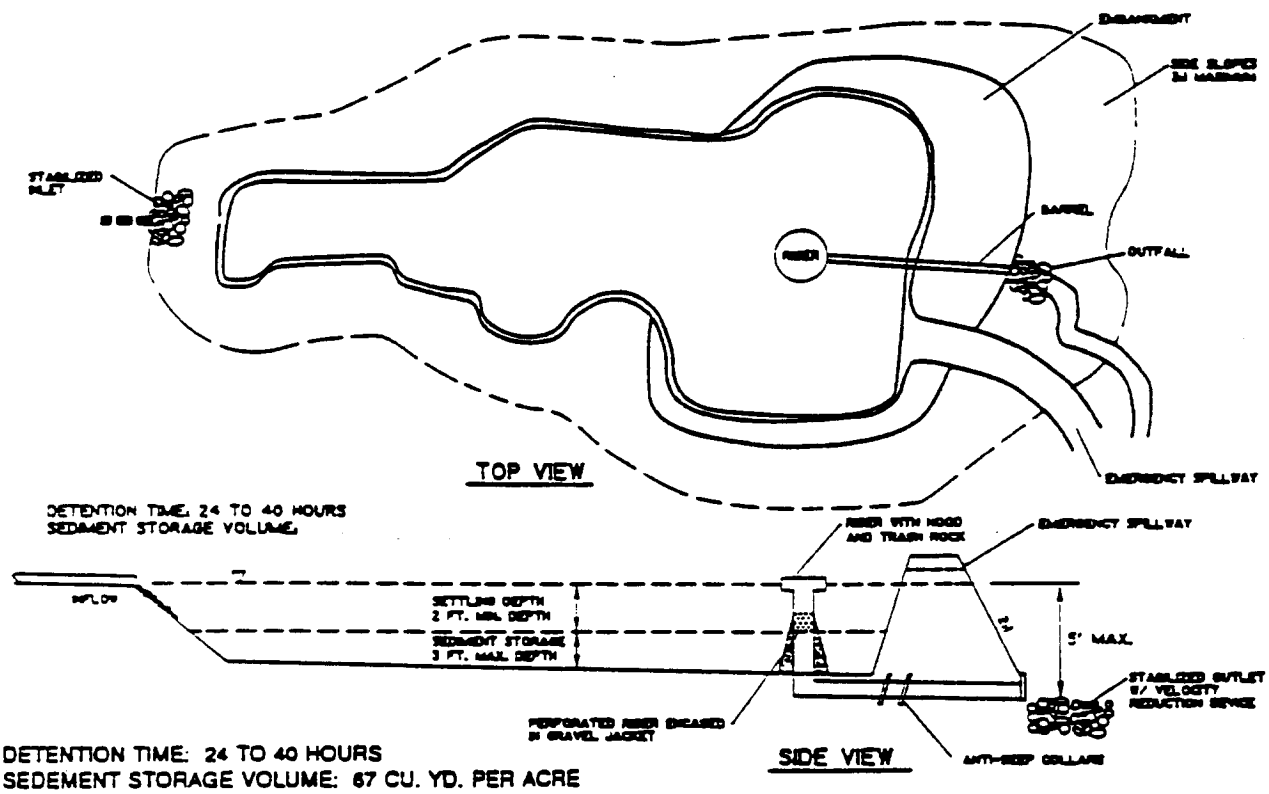
Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC56

R0000614

Additional Information — Sediment Basin



DETENTION TIME: 24 TO 40 HOURS
SEDEMENT STORAGE VOLUME: 67 CU. YD. PER ACRE

TEMPORARY SEDIMENT BASIN

ESC56

R0000615

Appendix H

Permittee Construction Inspection Form Requirements

CONSTRUCTION SITE INSPECTION CHECKLIST

Inspected By: _____

Project: _____

Contractor: _____

Date: _____

Check "Yes" or "No" or "N/A" if not applicable.

YES	NO	N/A		
_____	_____	_____	1.	Has there been rain at the site since the last inspection?
_____	_____	_____	2.	Are all sediment barriers (e.g., sandbags, straw bales, and silt fences) in place in accordance with the Plan and are they functioning properly?
_____	_____	_____	3.	If present, are all exposed slopes protected from erosion through the implementation of acceptable soil stabilization practices?
_____	_____	_____	4.	If present, are all sediment traps/basins installed and functioning properly?
_____	_____	_____	5.	Are all material handling and storage areas reasonably clean and free of spills, leaks, or other deleterious materials?
_____	_____	_____	6.	Are all equipment storage and maintenance areas reasonably clean and free of spills, leaks, or any other deleterious materials?
_____	_____	_____	7.	Are all materials and equipment properly covered?
_____	_____	_____	8.	Are all external discharge points (i.e., outfalls) reasonably free of any noticeable pollutant discharges?
_____	_____	_____	9.	Are all internal discharge points (i.e., storm drain inlets) provided with inlet protection?

R0000617

Check "Yes" or "No" or "N/A" if not applicable.

YES	NO	N/A		
_____	_____	_____	10	Are all external discharge points reasonably free of any significant erosion or sediment transport?
_____	_____	_____	11.	Are all BMPs identified on the Plan installed in the proper locations and according to the specifications for the Plan?
_____	_____	_____	12.	Are all structural control practices in good repair and maintained in functional order?
_____	_____	_____	13.	Are all on-site traffic routes, parking, and storage of equipment and supplies restricted to areas designated in the Plan for those uses?
_____	_____	_____	14.	Are all locations of temporary soil stockpiles or construction materials in approved areas and properly contained?
_____	_____	_____	15.	Are all seeded or landscaped areas properly maintained?
_____	_____	_____	16.	Are sediment controls in place at discharge points from the site?
_____	_____	_____	17.	Are slopes free of significant erosion?
_____	_____	_____	18	Are all points of ingress and egress from the site provided with stabilized construction entrances?
_____	_____	_____	19.	Is sediment, debris, or mud being cleaned from public roads at intersections with site access roads?
_____	_____	_____	20.	Does the Plan reflect current site conditions?

If you answered "no" to any of the above questions (except Number 1), describe any corrective action(s) that must be taken to remedy the problem and when the corrective action is to be completed:

Checklist Item	Corrective Action(s) Needed	Date to be Completed

R0000618

INSPECTION LOG

The site shall be inspected before and after storm events with 0.25 inches or greater predicted or actual precipitation, and documented on the Construction Site Inspection Checklist Form. Incidents of noncompliance must be reported to the Engineer. A log of all inspections, as shown below, shall be kept current.

Date	Inspector	Type of Inspection			Observations (If post-storm inspection, note size of storm in inches)
		Routine	Pre-Storm	Post-Storm	

R0000619

Appendix I

Examples of Notice-Of-Violation, Notice-Of-Correction, and Stop Work Order

NOTICE OF BUILDING CODE VIOLATION

Pursuant to the provisions of Section __ of the City/County of_____ Building Code, notice is hereby given that the property whose legal description is set forth below (and/or buildings or structures located thereon) has been determined to be in violation of Section(s) _____ of said Code. The owner has been notified of said violations(s) in accordance with Subsection _____

Address of property: _____

Description of violation(s): _____

_____

_____

Pursuant to Section _____, any person who desires to have recorded a notice rescinding the notice of violation may present evidence of compliance to the Building Official. If the Building Official determines that the violation has been satisfactorily cured, the Building Official shall record a notice rescinding the prior notice of violation. Detailed information may be obtained by contacting _____ _____.

PROPERTY DESCRIPTION

Date_____, 19__

State of California
City/County

On _____ before me, _____, City/County Clerk, personally appeared _____

_____

personally known to me (or proved to me n the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person(s), or the entity on behalf of which the person(s) acted, executed the instrument.

IN WITNESS WHEREOF, I have here set my hand.

By _____
Deputy City/County Clerk

R0000621

NOTICE RESCINDING NOTICE OF BUILDING CODE VIOLATION

Pursuant to Section _____ of the City/County of _____ Building Code, the Notice of Building Code Violation previously recorded as document _____ on _____ _____ in the office of the City/County Clerk is hereby rescinded. Said notice was recorded as to the following property:

Address of property: _____

PROPERTY DESCRIPTION

Date_____, 19__

State of California
City/County

STOP ALL WORK

Property Address:

Owner:

You are in violation with the provisions of the City/County ordinance(s) as indicated below:

_____ Building Code
_____ Grading Code
_____ Plumbing Code
_____ Mechanical Code
_____ Electrical Code
_____ Zoning Ordinances

Description of violation(s):

_____ Submit plans for the work within 10 days to the office listed below and apply for a plan check for the required permit.
_____ Obtain a permit within 10 days for the work at the office listed below.
_____ A referral has been made to _____.

City/County of _____
Street Address
Telephone Number
Hours of Business

_____
Inspector's Signature Date

R0000623

Appendix J
Employee Training Guidance

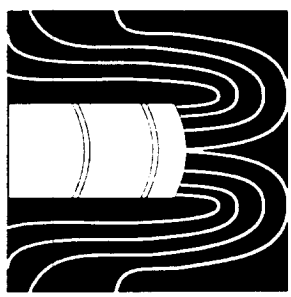
Appendix J
Employee Training Guidance

The following guidance may be used to develop and implement a development construction employee training program:

- Identify all appropriate departments and employees who should receive training. Appropriate departments and employees are those involved in administration, inspection, and enforcement of building and grading permits.
- Develop a training program that describes general storm water program requirements and that establishes the relationship between construction site activities and conditions and the potential for storm water pollution or non-storm water discharges to the storm drain system and the associated impacts on receiving waters.
- Include in the training program a discussion of the minimum requirements for development construction projects and how to determine during an inspection if construction sites are meeting the minimum requirements.
- Present guidance on the selection of appropriate BMPs for both erosion and sediment control and non-storm water management. Include examples or case studies to illustrate proper BMP selection and implementation for construction sites.
- Review the content and format of a Local SWPPP and WWECP.
- Provide employees with handouts, checklists, manuals or other resources that can be used later for reference. Reference sources can include material from this Model Program, the training program developed by the Los Angeles County Department of Public Works, the California Best Management Practices Handbook, and the California Department of Transportation Storm Water Quality Handbooks.
- Refer to the Five-Year Public Education Plan, Implementation by Target Audience, Development Construction employees for a description of activities, training materials, etc.

Stormwater Quality Management Plan (SQMP)

Illicit Connection and Illicit Discharge Elimination



URS Corporation
Camp Dresser & McKee Inc.
Consensus Planning
Psomas and Associates
Larry Walker Associates
Geoff Brosseau

FEBRUARY 2001

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ES.1 OVERVIEW

On July 15, 1996, the Los Angeles Regional Water Quality Control Board (Regional Board) issued a municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit (Permit) to the County of Los Angeles and 85 cities (Permittees). This Permit contains a requirement for Permittees to develop and implement within their jurisdiction a Storm Water Management Program (SWMP). The Countywide Storm Water Management Plan (CSWMP) is the unified plan consisting of model programs developed under the Storm Water Management Program requirements as established by the Permit. These model programs are aimed to reduce pollutant discharges to the maximum extent practicable for attaining water quality objectives and protecting beneficial uses of receiving waters in Los Angeles County.

In the 2001 NPDES permit, the CSWMP has been renamed to the Stormwater Quality Management Plan (SQMP). For the remainder of this document, the acronym SQMP is used.

The Permit required the Permittees to develop a model program to address each of the following:

- Illicit Connections and Illicit Discharges,
- Development Planning,
- Development Construction,
- Public Agency Activities, and
- Public Information and Participation.

Each model program is a "stand-alone" document that describes one of these five elements of the SQMP. Record-keeping and reporting requirements are also associated with each model program. This Executive Summary describes the primary requirements of each of the model programs comprising the SQMP. The remainder of this document is the SQMP element referred to as the Illicit Connection and Illicit Discharge Elimination Program, which was approved by the Regional Board in March 1999.

ES.2 MODEL ILLICIT CONNECTIONS / ILLICIT DISCHARGE ELIMINATION PROGRAM

Part 2.II of the Permit contains requirements specifically for the identification and elimination of illicit connections and illicit discharges to the municipal separate storm sewer system (MS4), generally referred to in this document as "storm drain system." The Permit requirements include five components for the elimination of illicit connections and illicit discharges. Those five components are:

- Illicit connection elimination,
- Illicit discharge elimination,
- Best management practices (BMPs) program for designated non-stormwater discharges,
- Public reporting of illicit discharge and disposal practices, and
- Hazardous waste reporting program.

Illicit Connection Elimination

The goal of this component is to detect and eliminate illicit connections in order to reduce pollutants discharged through such connections to the maximum extent practical. The objectives are to:

- Conduct storm drain system field screening for illicit connections during scheduled infrastructure maintenance by maintenance personnel.
- Determine the source and nature of suspected illicit discharges by investigating connections to the storm drain system.

The model program also describes a methodology that Pemittees may use in prioritizing areas of their jurisdiction for investigation. Once the illicit connection/discharge has been investigated, one of the following actions must occur:

- If the discharge is determined to consist only of exempted non-stormwater, the connection will be allowed to remain and will no longer be considered an illicit connection. Permittees may elect to issue a permit for the connection or allow the connection to remain if information on the connection is documented; or
- The discharger will be required to obtain an NPDES permit; or
- The connection will be terminated through voluntary action or enforcement proceedings.

Permittees may prioritize potential problem areas for detection and investigation efforts under this program component, using the methodology defined in this model program.

R0000630

Illicit Discharge Elimination

The goal of this component is to detect and eliminate illicit discharges from entering the storm drain system to reduce pollutants from such discharge to the maximum extent practicable. The objectives are to:

- Investigate, contain, and clean up incidental spills reported by the public, other agencies or observed by Permittee field staff during the course of their normal daily activities,
- Eliminate through voluntary termination or enforcement action prohibited non-stormwater discharges to the storm drain system, and
- Investigate to determine the nature and source of the discharge and eliminate through voluntary termination or enforcement action suspected prohibited non-storm discharges in the storm drain system.

BMPs for Designated Non-Stormwater Discharges

The Permit required the City of Los Angeles to conduct a study on pollutants entering storm drains from street and sidewalk washing operation to:

(i.) Characterize discharges from municipal street washing and sidewalk washing

(ii.)Assess the impacts of such activities and

(iii.) Recommend appropriate BMPs to control any adverse impacts.

The City of Los Angeles completed the study and prepared a report entitled, "A Study of Pollutants Entering Storm Drains from Street and Sidewalk Washing Operations in Los Angeles, California." The Regional Board approved recommended BMPs for street and sidewalk washing activities.

Public Reporting

The goal of this component is to promote, publicize and facilitate public reporting of illicit discharges and illicit disposal practices. Permittees must implement a system for complainant documentation and a follow up response for calls received from the public regarding potential illicit discharges and illicit disposal practices.

Reporting Hazardous Substances Entering the Storm Drain System

The goal of this component is to facilitate appropriate reporting of hazardous substances entering the storm drain system as a result of an illicit discharge. The Permittees must implement a reporting program to document quantities of hazardous substances entering the storm drain system.

ES.3 MODEL DEVELOPMENT PLANNING PROGRAM

"Development" Projects encompass those projects that are subject to a planning and permitting review process by a Permittee. A "Development" Project may be new development, redevelopment, renovation, remodeling, rehabilitation, infill, or other terms that may be used in a Permittee's ordinances and/or building code. The planning and design of public facilities have similar requirements described in the Model Public Agency Activities Program, another component of the Countywide Storm Water Management Plan.

The fundamental concept of this program component is to identify development that may significantly impact stormwater quality and to then to include permanent BMPs in the project's design. Development projects that may significantly impact stormwater quality are Planning "Priority" Projects. Other projects are deemed "Exempt" from these program requirements.

Each Permittee will implement a development-planning program that includes the following components:

- System for determining the appropriate category (Priority or Exempt) for a Development Project;
- Recommended list of BMPs to be considered, and as appropriate, implemented for Development Projects;
- Process to ensure that Planning Priority Projects incorporate the Standard Urban Storm Water Mitigation Plans using the recommended list of BMPs;
- Guidelines for California Environmental Quality Act (CEQA) compliance;
- Guidelines for the revision of General Plan elements to include watershed and stormwater quality management considerations, when General Plan elements are being significantly rewritten; and
- Developer information program that provides general guidance on the Permittee's development planning program, and specific guidance on BMP selection and the Standard Urban Storm Water Mitigation Plans.

A checklist and flowchart are included in the Model Development Planning Program to assist Permittees in determining whether a project is Priority or Exempt.

ES.4 MODEL DEVELOPMENT CONSTRUCTION PROGRAM

Permittees must also implement a program to manage stormwater and urban runoff associated with construction activities within their jurisdictions. The Model Development Construction Program addresses:

- Development and implementation of construction site BMPs;

- Implementation of procedures to verify Notice of Intent (NOI) filing with the State Water Resources Control Board and completion of stormwater pollution prevention plan (SWPPP) for projects subject to the California General Construction Permit, and
- Implementation of a construction inspection program.

Construction Site BMPs

A Development Construction Project is defined as projects for which site activities such as clearing, grading, excavation, road construction, structure construction, or structure demolition results in the disturbance of soil.

In certain situations, where impact to stormwater quality is a greater threat, Development Construction Projects should be given greater scrutiny to ensure that minimum requirements are met. These projects which present a greater threat to water quality, *but are not subject to the California General Permit for Storm Water Discharges Associated with Construction Activity*[1] are called Construction Priority Projects.

Unless specifically exempted, all Development Construction Projects will be required to implement BMPs to meet minimum water quality protection requirements. As a condition for issuing a grading or building permit, applicants for covered Development Construction Projects shall be required to certify that they understand and will comply with the minimum BMPs requirements related to construction site runoff.

Projects Subject to the General Construction Permit

Developers of construction sites subject to the General Construction Permit are required to prepare and implement a Storm Water Pollution Prevention Plan (state SWPPP). Before issuing building or grading permits, Permittees will require applicants to demonstrate that a Notice of Intent (NOI) has been filed with the State Water Resources Control Board (SWRCB), and that a state SWPPP has been prepared for projects subject to the General Construction Permit.

Requirements for Construction Priority Projects

Prior to receiving a building or grading permit, applicants for Construction Priority Projects must prepare a local stormwater pollution prevention plan (local SWPPP) covering construction materials and waste management control, and must certify that they will implement the local SWPPP year-round. Applicants for Construction Priority projects must also prepare and

[1] A project is subject to the General Construction Permit if it disturbs 5 acres or more of soil, or the project results in the disturbance of less than 5 acres but is part of a larger common plan of development or sale that exceeds 5 acres.

implement a Wet Weather Erosion Control Plan (WWECP) if the project will leave soil disturbed during the rainy season (November 1 through April 15).

Site Inspection and Enforcement

Each Permittee will implement site inspection procedures to assess whether the minimum requirements for Development Construction Projects are being achieved and appropriate BMPs are being implemented. Site inspections will also determine if local SWPPPs are being implemented at projects where they apply. Developers and/or contractors will also be required to conduct and document self-inspections of their construction site. Each Permittee will also develop and implement enforcement procedures to require that corrective actions be undertaken when the requirements are not met.

ES.5 MODEL PUBLIC AGENCY ACTIVITIES PROGRAM

Part IV.C of the Permit contains requirements specifically for public agency activities and facilities. Components of the Public Agency Activities Model Program describe measures to be taken by Permittees to reduce stormwater impacts from public agency activities and facilities such as sanitary sewer systems, public construction activities, vehicle maintenance and material storage facilities, recreation facilities, stormwater drainage systems, streets and roads, etc.

Sewage Systems Operations

This program component is applicable to all Permittees who own and operate a sewage collection system. Although sewage systems themselves are not a regular source of stormwater pollution, raw sewage contains pollutants that can pose a serious threat to both human health and the quality of receiving waters if they enter the storm drain system through incidents such as spills, leaks, or overflows. The goal of this program is to reduce the impact of Permittee-owned sewage system operations on stormwater quality.

The objectives of this program component are to:

- Keep any sewage overflows or leaks from entering the storm drain system or receiving waters.
- Identify and repair sewage system blockages, exfiltrations, overflows and implement procedures for investigating the causes.
- Notify public health authorities in cases where threats to public health exist.

Public Construction Activities Management

This program component is applicable to all Permittees who construct or contract to construct public facilities, including infrastructure. The program component requires the use of temporary best management practices (BMPs) to reduce the discharge of pollutants from public construction sites. In addition, public agency facilities with the potential for having a significant effect on stormwater quality when completed by virtue of their size, nature of on-site activities, or other factors must incorporate permanent BMPs in the planning and design of the project.

The objectives of this program component are to:

- Select and incorporate appropriate construction control measures for stormwater quality management from construction sites.
- Conduct and inspection program, including enforcement procedures as necessary, to verify that the construction control measures are implemented and performed effectively throughout the construction period.

Vehicle Maintenance / Material Storage Facilities Management

This program component is applicable to all Permittees who own and operate vehicle maintenance or materials storage facilities. Activities at these facilities may generate waste, spills and leaks that could potentially reach the storm drain system and receiving waters. The goal of this program is to make stormwater quality a consideration when conducting activities at municipal facilities.

The objectives of this program component are to:

- Identify and evaluate sources of pollutants from public vehicle maintenance/material storage facilities that may affect the quality of stormwater discharge from the facility.
- Identify and implement site-specific best management practices to reduce or prevent pollutants in stormwater discharges.

Landscape and Recreational Facilities Management

This program component is applicable to all Permittees who own and operate recreational facilities. Maintenance practices at parks and recreation facilities generally include fertilizer and pesticide applications, vegetation maintenance and disposal, swimming pool chemical maintenance and draining, and trash and debris management. All of these activities have the potential to contribute pollutants to the storm drain system. If improperly managed, potential pollutants can be transported in runoff (stormwater and non-stormwater discharges) to the storm drain system and subsequently to receiving waters. The goal of the program for landscape and

recreational facilities management is to make the stormwater quality a consideration when conducting operation and maintenance activities.

The objectives of this program component are to:

- Minimize the discharge of pesticides, herbicides and fertilizers to the storm drain system and receiving waters.
- Prevent the disposal of landscape waste into the storm drain system.
- Minimize the trash, debris and other pollutants from entering Permitee-owned recreational water bodies.
- Discharge municipal swimming pool water in a manner that will not contribute pollutants to receiving waters.

Storm Drain Operation and Management

The storm drain system functions primarily to collect and convey surface runoff to receiving waters during storms in order to prevent flooding. A common municipal activity includes the maintenance of the storm drain system to maintain hydraulic function as intended during storms. The goal of this program is to reduce the impact of storm drain operation and maintenance activities on stormwater quality.

The objectives of this program component are to:

- Inspect and clean catch basins annually and keep appropriate records.
- Remove trash and debris annually from open channels and properly dispose of these materials to prevent them from being washed to receiving waters.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained and cleaned up, or eliminated.
- Review maintenance activities to verify that they minimize the amount of pollutants discharged to receiving waters.

Streets and Roads Maintenance

Streets and roads may collect litter and debris from nearby activities, as well as from vehicular traffic. During the course of routine maintenance waste materials are often generated. The goal of this component is to reduce the impact of Permittee street and road operations and maintenance on stormwater quality.

The objectives of this program component are to:

- Sweep curbed streets to reduce the discharge of pollutants associated with activities occurring in street and road rights-of-way.
- Minimize the discharge of pollutants associated with the maintenance of streets and roads.

Parking Facilities Management

Permittees who own parking lots with more than 25 parking spaces located in areas with potential exposure to stormwater must have a parking facilities management plan. The goal of this component is to reduce the impact of these parking facilities on the quality of stormwater discharges and receiving waters. The object of this program component is to remove debris from parking facilities to reduce the amount of material that comes into contact with stormwater.

Public Industrial Activities

Industrial activities, whether private or public, have the potential to discharge pollutants to the storm drain system. Many industrial facilities are subject to the California General Industrial Activities Storm Water Permit (General Industrial Permit) for control of stormwater pollution. The goal of the General Industrial Permit is to reduce the impact of industrial facilities on stormwater quality. This provision of the Permit may procedurally simplify and reduce the cost of Permittees' compliance for their industrial facilities (Phase 1) by providing the option to obtain coverage under the Permit in lieu of the General Industrial Permit.

The objective of this program component is to comply with all requirements and conditions contained in the General Industrial Permit.

Emergency Procedures

Each Permittee must consider the impact of discharges to the storm drain system during emergency repairs of essential public services and infrastructure, and response to natural disasters. The goal is to reduce the impact of emergency response activities on receiving waters, to the extent possible, without compromising public health and safety.

The objectives of this program component are to:

- Recognize that public health and safety are the highest priority when conducting emergency response activities.
- Protect surface water quality by incorporating appropriate BMPs into emergency response activities to the extent possible.

ES.6 Model Public Information and Participation Program

The purpose of the Stormwater/Urban Runoff Public Information and Participation Program (Five-Year Public Education Plan) is to provide the framework for a comprehensive educational stormwater and urban runoff outreach approach that will reach as many Los Angeles County residents as possible. The Five-Year Public Education Plan is research-based, broad-based with overarching themes, flexible, adaptable, and simplistic in order to produce behavior change.

Groups of residents differ significantly in terms of the amount of pollution they contribute, their demographics and lifestyle, attitudes related to stormwater pollution, and probability of changing their behaviors. By better understanding the general County resident population, resources may be directed to those segments of the population that pose the greatest threat to stormwater quality and who represent the greatest opportunity to respond to a public education campaign.

Some key strategies developed for successful implementation of the education model include:

- Creating Overarching Approach A unified overall public education approach sets a "tone" for the program and once established helps target audiences identify the program with its pollution prevention message.
- Building Partnerships Integrate County and city programs, cooperate with environmental groups, co-Permittees, and other public and business groups to disseminate public education program materials and special events information.
- Unify Pollution Prevention Efforts Link all pollution prevention efforts (such as recycling, used oil and household waste) under a single agenda rather than under multiple prevention splinter programs.
- Develop "How To" Instructions Provide specific guidelines supported by simple easy to remember tasks and concise "how to" instructions for pollution prevention actions that residents and business may incorporate into their everyday routines.
- Monitoring and Evaluation System Establish an evaluation system to measure program effectiveness by assessing the number of people who show increased awareness, intent and/or actions in reducing stormwater pollution. Re-evaluate and enhance program components on continually based on program effectiveness.
- Multiple Audience Impact Develop program materials and activities that may be implemented and have impact on more than one audience at a time.

The Model Public Information and Participation Program also includes reporting requirements for

Permittees to support the Annual Program Report to the Regional Board. These reporting requirements include the documentation of information such as:

- Number of media outlets contacted to run public service announcements (PSAs),
- Dollar value and number of media buys,
- Audience of the media PSAs,
- List of local businesses enlisted to place non-traditional advertising (point-of-purchase displays, product neck hangers, etc.)
- Numbers and types of stormwater pollution prevention materials distributed, and
- Whether there is an increase in the number of illicit discharge reports to the Permittee.

1.1 BACKGROUND

The municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit (Permit) issued to Los Angeles County and 85 cities by the Los Angeles Regional Water Quality Control Board on July 15, 1996 contains a requirement for Permittees to develop and implement an Illicit Connection/Illicit Discharge Elimination Program. This document describes a model program that Permittees can follow to implement their own Illicit Connection/Illicit Discharge Elimination Program in compliance with the Permit.

Part 2.II of the Permit contains requirements specifically for the identification and elimination of illicit connections and illicit discharges to the municipal separate storm sewer system (MS4), generally referred to in this document as "storm drain system." The Permit requirements are shown in Table 1-1. They are fully enforceable and can only be changed through action by the Regional Board. The model program contents will be reviewed and approved by the Regional Board staff (Executive Officer) and can be changed by approval of the Executive Officer.

Table 1-1
Permit Requirements - Illicit Connections and Illicit Discharges

Permit Section	Requirement	Compliance Date
2.II.A.2	Implement illicit connection elimination program.	Four months after commencement of next fiscal year following Executive Officer approval of model program, but no later than 7/30/99[1].
2.II.B.2	Implement illicit discharge elimination program.	Four months after commencement of next fiscal year following Executive Officer approval of model program, but no later than 7/30/99[1].
2.II.C.3	Implement non-stormwater management program BMPs for designated discharges (municipal street washing and sidewalk washing) if required by the Regional Board.	To be determined by Regional Board, but no later than 7/30/99.
2.II.D.2	Implement standard program to facilitate public reporting of illicit discharges and illicit disposal practices.	Four months after commencement of next fiscal year following Executive Officer approval of program, but no later than 7/30/99[1].
2.II.D.4	Implement standard program for reporting hazardous substances.	Four months after commencement of next fiscal year following Executive Officer approval of program, but no later than 7/30/99[1].

(1) Provided that such approval is issued not later than 90 days prior to the commencement of the Permittee's fiscal year.

The requirement to implement an Illicit Connection/Illicit Discharge Elimination Program is based on one of the two primary objectives set forth in the Federal Clean Water Act amendments of 1987 which established the framework for regulating stormwater discharges from municipal, industrial and construction activities under the NPDES system:

- Effectively prohibit non-stormwater discharges.
- Reduce the discharge of pollutants to the maximum extent practicable (MEP).

To meet this statutory objective, the federal regulatory requirements for municipal Permittees include implementing a comprehensive program, and best management practices (BMPs) to ***detect and remove illicit discharges and improper disposal into the storm drain system***.

1.2 NATURE AND TYPES OF ILLICIT DISCHARGES AND ILLICIT CONNECTIONS

1.2.1 Illicit Discharges

The Permit has established definitions of illicit discharge and illicit disposal as follows:

> *"Illicit Disposal: Any disposal, either intentionally or unintentionally, of material(s) or waste(s) that can pollute storm water or urban runoff."*
>
> *"Illicit Discharge: Any discharge to the storm drain system that is prohibited under local, state or federal statutes, ordinances, codes or regulations. This includes all non-storm water discharges except discharges pursuant to an NPDES permit and discharges that are exempted or conditionally exempted in accordance with Section II of this Order."*

Categories of non-stormwater discharges that are not prohibited (exempted or conditionally exempted) under the Permit are listed in Table 1-2.

The context of illicit discharges and illicit disposal used in this model program includes several categories as follows:

- Incidental spills or disposal of wastes or non-stormwater. These may be intentional, unintentional or accidental and would typically enter the storm drain system directly through drain inlets, catch basins or manholes or be deposited in the public right-of-way such that wash-off would reach the storm drain system.
- Discharges of sanitary sewage due to overflows or leaks; usually incidental but may be continuous.
- Continuous or intermittent discharges of prohibited non-stormwater other than through an illicit connection. These typically occur as surface runoff from outside the public right-of-way (e.g., area washdown from an industrial site).

- Continuous or intermittent non-stormwater discharges through an illicit connection (see Section 1.2.2).

Table 1-2
Exempt and Conditionally Exempt Discharges[1]

- Discharges in compliance with a separate NPDES permit/waste discharge requirements (WDR) or granted a discharge exemption by the Regional Board, the Executive Officer, or the State Water Resources Control Board.

- Exempted discharges (2) including:
  a. Flows from riparian habitats or wetlands;
  b. Diverted stream flows;
  c. Springs;
  d. Rising ground waters;
  e. Uncontaminated groundwater infiltration; and
  f. Discharges or flows from emergency fire fighting activities.

- Conditionally exempted discharges (3) including:
  a. Landscape irrigation;
  b. Water line flushing;
  c. Potable water sources provided the discharges are managed in accordance with an approved Industry-wide Standard Pollution Prevention Practices developed by the American Water Works Association, California-Nevada Section, or equivalent document; and in compliance with any requirements established by the Permittee(s);
  d. Foundation drains;
  e. Footing drains;
  f. Air conditioning condensate;
  g. Irrigation water;
  h. Lawn watering;
  i. Water from crawl space pumps;
  j. Dechlorinated swimming pool discharges;
  k. Individual residential car washing; and,
  l. Street washing (including sidewalk washing), except municipal street washing.

(1) The Executive Officer, upon presentation of evidence in accordance with Part 2.II.C.4 of the Permit, may include other categories of non-stormwater discharges under this subsection.
(2) The Executive Officer, upon presentation of evidence in accordance with Part 2.II.C.4 of the Permit, may include other categories of non-stormwater discharges under this subsection.
(3) However, if any such discharges are identified by either a Permittee or the Executive Officer as being significant sources of pollutants to receiving waters, then appropriate BMPs to minimize the adverse effects of these sources shall be developed and implemented under the Countywide Storm Water Management Plan or local Watershed Management Area Plans.

1.2.2 Illicit Connections

The Permit defines illicit connection as:

"Illicit Connection: Any man-made conveyance that is connected to the storm drain system without a permit, excluding roof-drains and other similar type connections. Examples include channels, pipelines, conduits, inlets, or outlets that are connected directly to the storm drain system."

However, since not all agencies formally permit connections, as used in this model program an illicit connection is any man-made conveyance that is connected to the storm drain system and through which prohibited non-stormwater flows are discharged. This includes channels,

pipelines, conduits, inlets or outlets that are connected directly to the storm drain system. Roof drains, area drains, and other similar connections which are intended to convey only stormwater runoff are excluded, unless they are also used to convey an illicit discharge.

1.3 PROGRAM SUMMARY

Each Permittee will implement an illicit connection/illicit discharge elimination program that includes the following components:

- Illicit discharge elimination
- Illicit connection elimination
- Public reporting
- Reporting hazardous substances entering the storm drain system

A brief summary of the baseline objectives of each component relative to the nature and type of illicit discharges and illicit connections follows.

1.3.1 Illicit Discharge Elimination

The goal of this component is to detect and eliminate illicit discharges from entering the storm drain system to reduce pollutants from such discharge to the maximum extent practicable. The baseline objectives are:

- Incidental spills, or disposal (including sanitary sewer leaks or overflows) reported by the public or other agencies or observed by Permittee field staff during the course of their normal daily activities will be investigated, contained and cleaned up.
- Prohibited non-stormwater discharges to the storm drain system reported by the public or other agencies or observed by Permittee field staff during the course of their normal daily activities (such as surface runoff associated with washdown from an industrial site) will be eliminated through voluntary termination or enforcement action.
- Suspected prohibited non-storm discharges in the storm drain system reported by the public or other agencies or observed by Permittee staff during the course of their normal daily activities, that may result from illicit connections or whose origin is unknown, will be investigated to determine the nature and source of the discharge and eliminated through voluntary termination or enforcement action.

Permittees may prioritize problem areas of illicit disposal for inspection, cleanup and enforcement using the methods defined in this model program.

Implementation requirements for this component of the program are contained in Section 2.

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1.3.2 Illicit Connection Elimination

The goal of this component is to detect and eliminate illicit connections to reduce pollutants discharged through such connections to the maximum extent practicable. The baseline objectives are:

- A screen of the storm drain system will be conducted for illicit connections during scheduled infrastructure maintenance by maintenance personnel.
- A connection to the storm drain system, that is suspected or observed to be the source of an illicit discharge, will be investigated to determine the source and nature of the discharge. The connection may be discovered while investigating a suspected illicit discharge, or detected by field staff during the course of their normal daily activities.
- Once the illicit connection/discharge has been investigated as described in Section 2, one of the following actions must occur:
  - If the discharge is determined to consist only of exempted non-stormwater, the connection will be allowed to remain and will no longer be considered an illicit connection. Permittees may elect to issue a permit for the connection or allow the connection to remain if information on the connection is recorded as described in the model program; or
  - The discharge will be permitted through a separate NPDES permit; or
  - The connection will be terminated through voluntary action or enforcement proceedings.

Permittees may prioritize potential problem areas for detection and investigation efforts under this program component, using the methodology defined in this model program.

Implementation requirements for this component of the program are contained in Section 3.

1.3.3 Public Reporting

The goal of this component is to promote, publicize and facilitate public reporting of illicit discharges and illicit disposal practices. The baseline objective is that a program will be implemented to receive incoming calls from the public regarding potential illicit discharges and illicit disposal practices, communicate and coordinate a response, follow up with the complainant, and maintain documentation.

Implementation requirements for this component of the program are contained in Section 4.

1.3.4 Reporting Hazardous Substances Entering the Storm Drain System

The goal of this component is to facilitate appropriate reporting of hazardous substances entering the storm drain system as a result of an illicit discharge. The baseline objective is that a program will be implemented to report and document reportable quantities of hazardous substances

entering the storm drain system. Implementation requirements for this component of the program are contained in Section 5.

1.4 PERFORMANCE MEASURES

Performance measures define the level of Permittee program activities that are needed to ensure compliance with this model program and the goals outlined under the Permit. Appendix A outlines the specific activities to be tracked through the use of performance measures, and representative target goals for each measure.

The program activities discussed in this model program are intended to identify and eliminate discharges associated with illegal dumping or illicit connections to the storm drain system. As a result, the performance measures in Appendix A are based upon accepted practices described in this model program and performance standards in compliance with NPDES permit conditions.

2.1 INTRODUCTION

The goal of the illicit discharge elimination program is to detect and eliminate non-stormwater discharges (except those that are exempt or conditionally exempt) from entering the storm drain system to reduce pollutants from such discharge to the maximum extent practicable. Each Permittee's program must meet the requirements of the Los Angeles County municipal stormwater permit (Permit), as shown in Table 2-1.

Table 2-1
Permit Requirements - Illicit Discharge Elimination

Report Section	Requirement	Permit Section
2.2.2 2.2.3	Implement procedures for investigation, containment and cleanup of spills.	2.II.B.1.b
2.2.4	Implement a method to prioritize problem areas of illicit disposal.	2.II.D.1.c
2.2.5	Implement procedures to educate inspectors, maintenance workers and other field staff to notice illicit discharges during the course of their daily activities and report such occurrences.	2.II.D.1.d
2.2.6	Implement enforcement procedures to eliminate illicit discharges.	2.II.B.1.a
2.2.7	Implement a record keeping system to document illicit discharges.	2.II.D.1.e
2.2.8	Maintain and use industrial/commercial education and outreach materials.	2.II.D.1.f

The baseline objectives of the program are:

- Incidental spills, or disposal (including sanitary sewer leaks or overflows) reported by the public or other agencies or observed by Permittee field staff during the course of their normal daily activities will be investigated, contained and cleaned up.
- Prohibited non-stormwater discharges to the storm drain system reported by the public or other agencies or observed by Permittee field staff during the course of their normal daily activities (such as surface runoff associated with washdown from an industrial site) will be eliminated through voluntary termination or enforcement action.
- Suspected prohibited non-storm discharges in the storm drain system reported by the public or other agencies or observed by Permittee staff during the course of their normal daily activities, that may result from illicit connections or whose origin is unknown, will be investigated to determine the nature and source of the discharge and eliminated through voluntary termination or enforcement action.

Permittees may prioritize problem areas of illicit disposal where inspection, cleanup and enforcement are necessary to prevent the discharge of contaminants using the methods defined in this model program.

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2.2 PROGRAM IMPLEMENTATION ELEMENTS

2.2.1 Spill Prevention Methods

The best way to contend with spills is to prevent them from occurring. Guidance is included in Appendix B1.

2.2.2 Spill Prevention Coordination

Within agency responding divisions or sections, responsible staff, and level of support provided to lead emergency response agencies, will be identified. Within agency, spill response training, spill response equipment and activities to improve spill response procedures will be identified. Guidance is included in Appendix B2.

2.2.3 Spill Investigation, Containment and Cleanup

Standardized procedures will be implemented to investigate, contain and clean up spills. These must include procedures to ensure that sewage treated with disinfection agents will not be discharged into the storm drain system to the extent practicable. The standard procedures include:

- Receive call on spill (see also Section 4, Public Reporting).
- Dispatch appropriate personnel to perform material investigation and cleanup.
- Contain spill/material and minimize release to storm drain system or receiving waters.
- Record required information at spill site.
- Perform field tests as necessary to determine type and source of spill.
- If the call was received through the LACDPW Hotline, notify the LACDPW dispatcher upon incident closure.

Guidance is included in Appendix B3.

2.2.4 Prioritization for Investigation of Illicit Disposal

If the investigation and elimination of all illicit disposal incidents cannot be completed within a timely manner, a prioritization process can be used to determine in what order the incidents should be investigated. If necessary, the following methods will be implemented to prioritize problem areas of illicit disposal where inspection, cleanup, and enforcement are necessary to prevent the discharge of contaminants:

- Compile information on areas of illicit disposal.

- Determine drainage areas where disposal incidents have the greatest potential negative effect on stormwater quality.
- Determine drainage areas that have recurring incidents of illicit disposal.

Guidance is included in Appendix C.

A prioritization process for investigation and elimination of illicit connections and associated suspected illicit discharges is discussed in Section 3.2.2.

2.2.5 Education Program for Inspectors, Maintenance and Field Staff

Permittee staff will be required to implement the baseline objectives of observing, reporting, investigating and eliminating illicit discharges to the storm drain system.

Standardized procedures will be implemented to educate inspectors, maintenance workers, and other field staff to notice illicit discharges during the course of their daily activities and report them. The standard procedures include:

- Compile and/or prepare training materials, such as handouts and posters. Topics will include:
  - Stormwater quality requirements
  - Types of illicit discharges/disposal
  - Reporting forms
- Identify staff who conduct field activities and others who may benefit from training.
- Present information on illicit discharges during regular safety and tailgate meetings.
- Discuss how to report illicit discharges:
  - Call in report to request investigation and cleanup.
  - Fill out illicit discharge reporting forms.

Guidance for conducting the staff educational program for noticing and reporting illicit discharges is included in Appendix D.

The education program will also help appropriate Permittee staff to determine the appropriate follow-up activity when evidence of illicit discharges is observed. This includes:

- If the nature and source of the discharge is known or readily apparent, enforcement procedures will be initiated as discussed in Section 2.2.6.
- If the nature and source of the discharge is not known, additional investigation techniques will be used to determine the nature of the material and investigate the source. Guidance is included in Appendix E.

- If the illicit discharge is suspected to be through an illicit connection, procedures described in Section 3, Illicit Connection Elimination, will also be followed.

2.2.6 Standardized Enforcement Procedures

Enforcement procedures will be implemented to eliminate illicit disposal or discharges. The procedures will be followed when the source and nature of the discharge is known. Enforcement procedures will be consistent with the Permittee's legal authority. While legal authority for Permittees varies, most enforcement processes follow a common sequence. Typically they include:

- Verbal or written warnings for minor violations
- Formal notice of violation or non-compliance with specific actions and time frames for compliance
- Cease and desist or similar order to comply
- Specific remedies such as civil penalties (e.g., infraction), non-voluntary termination with cost recovery, or referral for criminal penalties or further legal action

Enforcement activity will begin at the appropriate level as determined by the Permittee's authorized representative. It need not necessarily be imposed sequentially. For incidents that are more severe or threatening at the outset, enforcement will start at an increased level. Enforcement steps will be accelerated if there is evidence of a clear failure to act, or an increasing severity of the discharge. A sample enforcement strategy and guidance are included in Appendix F.

2.2.7 Record Keeping and Documentation

A standardized record keeping system will be implemented to document illicit discharges detected within the local jurisdiction. The standard elements are:

- Record the following minimum information on all detected illicit discharges:
  - Date/time of the incident
  - Location
  - Type of material
  - Source, if determined
  - Action taken
  - Date incident was closed
- Forward the information to a designated individual/department.

A form that can be used to collect this information, *Illicit Discharge/Connection Reporting and Response* form, is included in Appendix G.

2.2.8 Industrial/Commercial Outreach Materials

Industrial/commercial education and outreach materials will be made available to field staff to be handed out as needed whenever illicit discharges are observed. The following materials have been developed for use by all Permittees under the Immediate Outreach component of the Public Information and Participation Program:

- Flyers/posters of Good Operating Practices for:
  - Auto repair industry
  - Gas stations
  - Food and restaurant industry

Copies of the materials are included as Appendix H.

The following materials will be developed as a joint effort between the Industrial/Commercial Educational Program and the Five-Year Storm Water Public Education Strategy component of the Public Information and Participation Program, and will be available in time to use for this Illicit Connection/Illicit Discharge Elimination Program:

- General stormwater quality brochure for industrial/commercial facilities.
- Fact sheets on all industrial groups regulated under Phase 1 of the federal stormwater program.

3.1 INTRODUCTION

Illicit connections are defined here as specific pathways for illicit discharges, even though a discharge may be infrequent or intermittent. The goal of the illicit connection elimination program is to eliminate these connections to the maximum extent practicable. Each Permittee's program must meet the requirements of the Los Angeles County municipal stormwater permit (Permit), as shown in Table 3-1.

Table 3-1
Permit Requirements - Illicit Connection Elimination

Report Section	Requirement	Permit Section
3.2.1	Implement storm drain inspection and illicit connection identification and elimination procedures.	2.II.A.1.a
3.2.1	Implement methods to use the results of field screening and other information.	2.II.A.1.c
3.2.2	Implement a method to prioritize potential problem areas of illicit connections.	2.II.A.1.b
3.2.3	Implement enforcement procedures to eliminate illicit connections.	2.II.A.1.e
3.2.4	Implement a record keeping system to document illicit connections.	2.II.A.1.d

The baseline objectives of the program are:

- A screen of the storm drain system will be conducted for illicit connections during scheduled infrastructure maintenance by maintenance personnel.
- A connection to the storm drain system, that is suspected or observed to be the source of an illicit discharge, will be investigated to determine the source and nature of the discharge. The connection may be discovered while investigating a suspected illicit discharge, or detected by field staff during the course of their normal daily activities.
- Once the illicit discharge has been investigated as described in Section 2, one of the following actions must occur:
  - If the discharge is determined to consist only of exempted non-stormwater, the connection will be allowed to remain and will no longer be considered an illicit connection. Permittees may elect to issue a permit for the connection or allow the connection to remain if information on the connection is recorded as described in the model program; or
  - The discharge will be permitted through a separate NPDES permit; or
  - The connection will be terminated through voluntary action or enforcement proceedings.

This strategy is summarized in Figure 3-1. Permittees may prioritize potential problem areas for detection and investigation efforts under this program component, using the methodology defined in this model program.

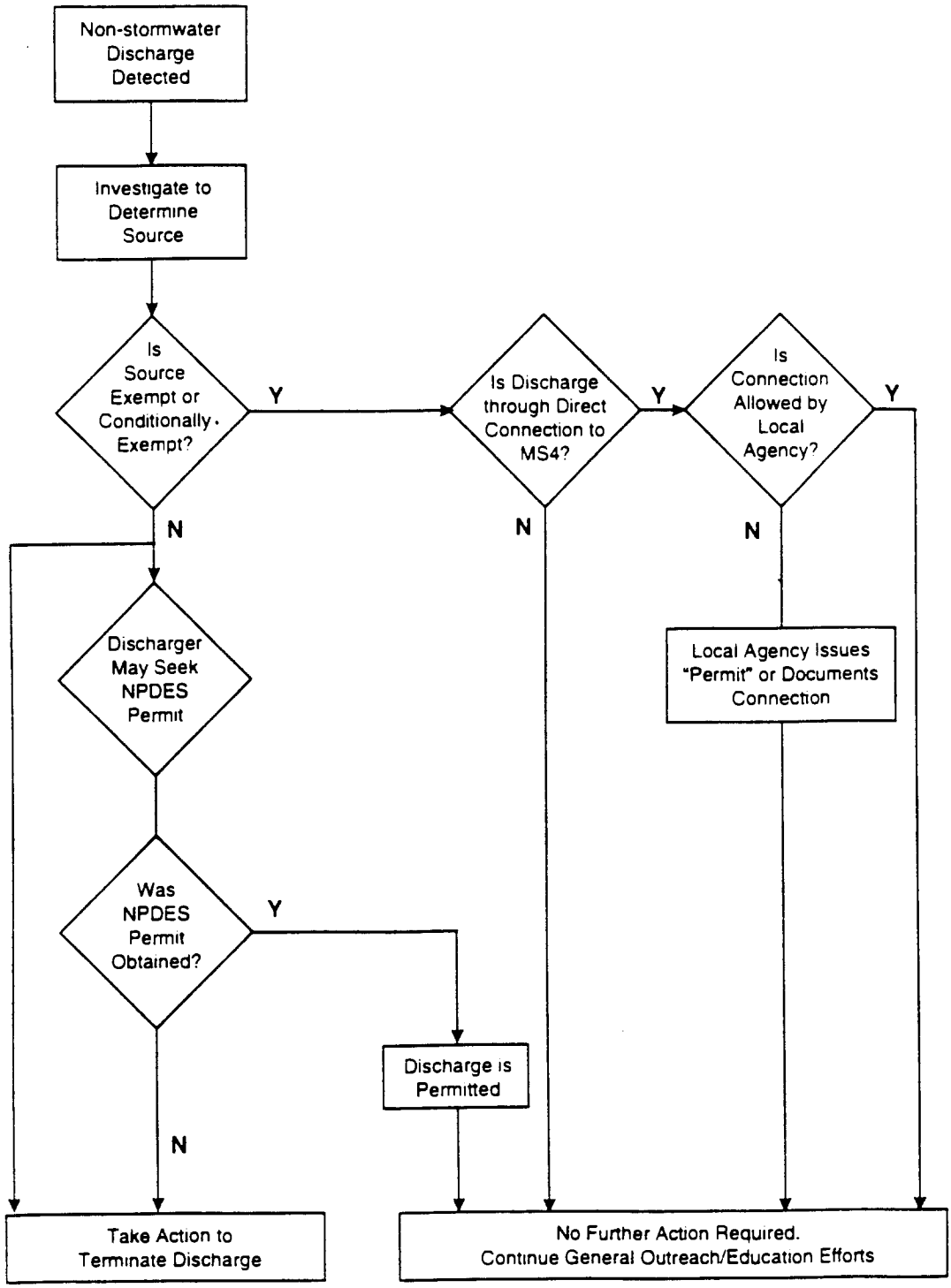


Figure 3-1
Illicit Discharge/Illicit Connection Elimination Strategy

3.2 PROGRAM IMPLEMENTATION ELEMENTS

3.2.1 Illicit Connection Investigation

Standardized storm drain inspection and illicit connection identification and elimination procedures will be implemented. The procedures include:

- During routine site inspections (e.g., Industrial Waste, Hazardous Materials, construction), storm drain system infrastructure surveys, or normal storm drain maintenance activities, look for connections that exhibit evidence of suspected illicit discharges.
- If evidence of an illicit discharge is detected, as discussed in Section 2, and the source does not appear to be evident or above ground, investigate to determine if the discharge is being conveyed through an illicit connection. Methods to locate illicit connections include:
  - Document research (e.g., storm drain system maps, prior investigation documents, permit files)
  - Physical inspections of catch basins, manholes, and lines large enough for safe entry
  - Dye test
  - Smoke tests
  - T.V. inspections

Guidance for the selection and use of appropriate field screening techniques is included in Appendix I.

Once a suspected illicit connection has been located and the nature and source of the discharge has been identified, follow-up action will be initiated in one of the following ways:

- If the discharge is determined to be exempt or conditionally exempt, the connection may be left intact. The connection must either be permitted or a record of the connection investigation will be kept on file as described in Section 3.2.4.
- If the discharger applies for and receives a separate NPDES permit, the connection may be left intact.
- If the connection is the source of continuous or intermittent illicit discharges, either the discharge must be terminated as discussed in Section 2 and a record of the connection kept on file, or the connection must be terminated, either voluntarily or through additional enforcement, as discussed in Section 3.2.3.

If the investigation and elimination of illicit connections cannot be accomplished within a timely manner, the prioritization process described in Section 3.2.2 can be used to determine in what order they should be investigated.

Appropriate staff, such as inspectors and field crews, should be educated about how to conduct illicit connection investigations. Guidance for conducting an educational program is included in Appendix D.

3.2.2 Prioritization

All suspected illicit connections should be investigated in a timely manner. However, if prioritization is necessary, the following methods will be implemented to prioritize potential problem areas to begin illicit connection investigation and elimination:

- Determine drainage areas of old commercial/industrial facilities and areas with heavy industry listed under subchapter N of 40 CFR Parts 405-471. These facilities are discussed in Appendix J.
- Determine drainage areas with drainage system facilities older than 30 years.
- Determine drainage areas with the highest number of detected or reported incidents of illicit discharge per year.

Guidance to prioritize illicit connections is included in Appendix J.

3.2.3 Standardized Enforcement Procedures

Enforcement procedures will be implemented when terminating illicit connections. Enforcement procedures will be consistent with the Permittee's legal authority. While legal authority for Permittees varies, most enforcement processes follow a common sequence. Typically they include:

- Verbal or written warnings for minor violations
- Formal notice of violation or non-compliance with specific actions and time frames for compliance
- Cease and desist or similar order to comply
- Specific remedies such as civil penalties (e.g., infraction), non-voluntary termination with cost recovery, or referral for criminal penalties or further legal action

Enforcement activity will begin at the appropriate level as determined by the Permittee's authorized representative. It need not necessarily be imposed sequentially. For incidents that are more severe or threatening at the outset, enforcement will start at an increased level. Enforcement steps will be accelerated if there is evidence of a clear failure to act, or an increasing severity of the discharge. An example of enforcement strategy and guidance is included in Appendix F.

3.2.4 Record Keeping and Documentation

A standardized record keeping system will be implemented to document illicit connections detected within the local jurisdiction. The standards elements are:

- Record the following minimum information on all suspected illicit connections:
  - Type of connection
  - Location
  - Evidence of illicit discharge
  - Action taken
  - Date incident was closed
- Forward the information to a designated individual/department.

A form that can be used to collect this information, *Illicit Discharge/Connection Reporting and Response*, is included in Appendix G.

4.1 INTRODUCTION

The goal of the public reporting program is to promote, publicize, and facilitate public reporting of illicit discharges and illicit disposal incidents. Each Permittee's program must meet the requirements of the Los Angeles County municipal stormwater permit (Permit), as shown in Table 4-1.

Table 4-1
Permit Requirements - Public Reporting

Report Section	Requirement	Permit Section
4.2.1	Implement a system to receive incoming complaints.	2.II.D.1.a
4.2.2	Implement a communication network to link Permittees so that action can be coordinated and complaints can be investigated promptly.	2.II.D.1.b
4.2.3	Implement a system to notify the complainant of any action taken, if appropriate.	2.II.D.1.c

The baseline objective of the program is that a program will be implemented to receive incoming calls from the public regarding potential illicit discharges and illicit disposal practices, communicate and coordinate a response, follow up with the complainant, and maintain documentation. Guidance for conducting all public reporting activities is included in Appendix K.

4.2 PROGRAM IMPLEMENTATION ELEMENTS

4.2.1 Receiving Incoming Calls

Procedures will be implemented to receive incoming reports of illicit discharge/disposal incidents. The procedures include:

- If desired, use the countywide hotline reporting system maintained by LACDPW.
- If the LACDPW system is not used, establish and maintain a local hotline reporting system.
- Receive calls and collect relevant information about the discharge/disposal.
- Promote and publicize the appropriate hotline number to the public.

4.2.2 Communications and Coordination

Procedures will be implemented to communicate with and coordinate activities between Permittees to promptly investigate reports of illicit discharge/disposal. The procedures include:

- Determine jurisdiction of the reported illicit discharge/disposal incident.
- If within Permittee's jurisdiction, dispatch appropriate personnel to perform material investigation and cleanup, in accordance with procedures described in Section 2, Illicit Discharge Elimination.
- If incident is under another jurisdiction, call and/or fax known information about the discharge/disposal to the appropriate agency.
- If the call was received through the LACDPW Hotline, notify the LACDPW dispatcher upon incident closure.

4.2.3 Follow up with Complainant

Procedures will be implemented to notify the complainant of any action taken, if appropriate. The elements are:

- Determine which reports of illicit discharge/disposal were received from individuals who gave a name and address or phone number.
- Periodically notify the individual of the status of the incident, including a final notification upon incident closure.

4.2.4 Record Keeping and Documentation

As discussed in Section 2, Illicit Discharge Elimination, a standardized record keeping system will be implemented to document illicit discharges detected within the local jurisdiction. Staff involved with receiving public reports of illicit discharge/disposal will forward all necessary information to a designated individual/department for incorporation into illicit discharge records.

5.1 INTRODUCTION

The goal of this program is to facilitate appropriate reporting of hazardous substances as a result of an illicit discharge. Each Permittee's program must meet the requirements of the Los Angeles County municipal stormwater permit (Permit), as shown in Table 5-1.

Table 5-1
Permit Requirements - Reporting Hazardous Substances

Report Section	Requirement	Permit Section
5.3.1	Implement a program for reporting incidents of "reportable quantity" of hazardous substances entering the MS4.	2.II.D.3

The baseline objective of the program is that a program will be implemented to report and document reportable quantities of hazardous substances entering the storm drain system.

5.2 DEFINITIONS OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

The Permit defines a hazardous substance as a material defined under 40 Code of Federal Regulations (CFR) ∋ 302. These are categorized as either "listed" or "unlisted" hazardous substances. Listed hazardous substances are contained in a table, Table 302.4, which is included in Appendix L. Unlisted hazardous substances are certain items of solid waste that exhibit characteristics identified in 40 CFR ∋ 261.20 through 261.24. Copies of these sections are also included in Appendix L. Examples of hazardous substances include any substance or chemical product for which one or more of the following applies:

- A material safety data sheet (MSDS) is required
- The substance is listed as radioactive by the Nuclear Regulatory Commission
- The substance is listed as hazardous by the U.S. Department of Transportation
- The material is listed in Labor Code ∋ 6382(b)

The above four categories are described in the California Health and Safety Code, Division 20, Chapter 6.95, Hazardous Materials Release Response Plans and Inventory.

The Permit defines a reportable quantity of hazardous substance as the quantity set forth in 40 CFR ∋ 302. For listed hazardous substances, this amount is the quantity listed in the column AFinal RQ≡ on Table 302.4. For unlisted hazardous substances, this amount is generally 100 pounds.

5.3 PROGRAM IMPLEMENTATION ELEMENTS

5.3.1 Notification Procedures

Procedures will be implemented to report incidents of "reportable quantity" of hazardous substances entering the storm drain system. The procedures include:

- When spill/illicit discharge/disposal materials are suspected to be hazardous, notify the appropriate Administering Agency.
- The Administering Agency will conduct a material investigation.
- If the material is hazardous, the Administering Agency will notify local, state and federal agencies and private contractors as necessary.
- If the material equals or exceeds the reportable quantity in a 24-hour period, the Administering Agency (or a designated individual/department) will notify the California Office of Emergency Services (OES) and the National Response Center.

A complete description of procedures for handling releases of hazardous substances is contained in each agency's *Emergency Response Procedures* manual. Additional guidance is included in Appendix M.

5.3.2 Record Keeping and Documentation

As discussed in Section 2, Illicit Discharge Elimination, a standardized record keeping system will be implemented to document illicit discharges detected within the local jurisdiction, including hazardous substances. Staff involved with reporting hazardous substances will forward all necessary information to a designated individual/department for incorporation into illicit discharge records.

Other reporting requirements for hazardous substances, unrelated to stormwater quality, are covered in a number of federal and state regulations. Details are contained in each agency' *Emergency Response Procedures* manual. Guidance is included in Appendix M.

Appendix A

Performance Measures For Illicit Connections/Illicit Discharges

A.1 TRAINING

Provide training for all municipal personnel involved in IC/ID and spill response activities, including annual training for all IC/ID inspectors.

A.2 FIELD SURVEYS

Conduct field investigations of the municipal storm drain system to identify sources of non-stormwater discharges.

- Survey high priority areas (as defined under the model program) and make observations. Record observed or suspected dry weather flows.
- Determine the type of flow and try to trace the flow to its source by following storm drain maps, inspecting manholes, and making surface observations.

During the term of the permit, tabulate the following:

- Number of illicit connections / discharges calls and reports
- Number of illicit connections / discharges investigated.
- Number of illicit connections / discharges eliminated.
- Educate any identified responsible parties to the impacts of their actions, explain the stormwater requirements, and provide best management practices.

A.3 SPILL RESPONSE

Implement a spill response program as described in the model program.

- Train all designated spill response agencies in existing spill response and clean-up programs and coordinate illicit discharge programs with neighboring jurisdictions.
- Encourage the use of appropriate spill notification programs.

A.4 PUBLIC REPORTING

Develop an information tracking system for the following:

- Document and compile data on IC/ID inspection, enforcement, and public education activities for an annual report.
- Document and compile data on spill response, enforcement, and public education activities for an annual report.
- Develop a tracking system designed to identify and prioritize target areas for proactive investigations.

Appendix B1
Spill Prevention Methods

B1.1 REFERENCE DOCUMENTS

B1.1.1 Facility Pollution Prevention Guide

For free copies of the "Facility Pollution Prevention Guide" and information on reprinting and distributing the guide contact (Report number: EPA/600/R-92/088):

ORD Publications
Pollution Prevention Research Branch
Risk Reduction Engineering Laboratory
U.S. EPA
Cincinnati, Ohio 45268
513-569-7562

The guide can also be obtained for $27 by contacting National Technical Information Service (NTIS) (accession number: PB92213206)

800-553-6847
703-487-4679
703-321-9038
703-321-8547 (FAX)

B1.1.2 INTRODUCTION TO POLLUTION PREVENTION, TRAINING MANUAL

For copies of the "Introduction to Pollution Prevention, Training Manual" and information on reprinting and distributing the guide contact (Report number: EPA/742/B-95/003):

National Service Center for Environmental Publications
P.O. Box 42419
Cincinnati, OH 45242-2419
Phone Number: 800-490-9198
Fax Number: 513-489-8695
Source Name: NSCEP

Appendix B2
Spill Prevention Coordination

B2.1 PROCEDURES

This appendix discusses spill prevention coordination procedures that identify:

- Divisions or sections responsible for responding to reports of spills
- General and specific spill response procedures including responsible division or section
- Spill response training activities
- Activities conducted to improve spill response procedures and equipment

B2.1.1 Divisions or Sections Responsible for Responding to Reports of Spills

Identify the divisions or sections responsible for responding to reports of spills and note divisions or sections that respond to specific types of spills such as hazardous materials spills or sewagespills. Also indicate the specific field staff who respond to spills and the level of support they provide to lead emergency response agencies and source of spill investigations.

B2.1.2 General and Specific Spill Response Procedures

Describe or reference general spill response procedures involved in responding to complaints and identifying spills through inspections. Include the spill response process from the spill identification stage through clean up and report preparation. Copies of the forms and reports prepared to document spills should also be included. Specific procedures for hazardous materials spills, floods, and sewage spills should be referenced. Contractor support for spill events, if applicable, should also be noted.

B2.1.3 Spill Response Training Activities

Provide an overview of all spill response training that is conducted within the various divisions and sections of the agencies.

B2.1.4 Activities to Improve Spill Response Procedures and Equipment

List all activities conducted within the implementing agency to improve spill response procedures and update equipment. Explain how improvements are identified, prioritized, and implemented. Include a schedule of how often spill response procedures and equipment are evaluated.

Appendix B3

Spill Investigation, Containment And Cleanup

B3.1 INVESTIGATION

Depending on the location of the spill and the type of material, the appropriate department/agency should be notified. This may include:

- Storm drain maintenance, if the spill reaches the storm drain system
- Street and road maintenance, if the spill is in the public right-of-ways
- Sewer system maintenance, if the material is from the sewage system
- Industrial waste inspection, if the material is from industrial facilities
- Fire Departments/"first responders," if the material may be hazardous
- Contractors for hazardous materials, if the material is hazardous

These departments/agencies should determine the nature of the material and the extent of the spill. If any agency determines there is a chance that the spill involves hazardous materials, then the local Administering Agency will be notified. An example of spill investigation procedures is depicted in Figure B3-1. Reporting procedures for hazardous substances are discussed further in Section 5 of this Illicit Connection/Illicit Discharge Elimination model program.

B3.2 CONTAINMENT AND CLEANUP

Once the nature and extent of the spill is determined, the appropriate departments and field superintendents will be notified to contain and clean up the spill. The three types of cleanup scenarios are (1) hazardous, (2) wastewater, and (3) other non-hazardous materials.

B3.2.1 Hazardous

Handling procedures regarding releases of hazardous or potentially hazardous substances into the environment are covered in a number of federal and state regulations, including: Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); Superfund Amendments and Reauthorization Act (SARA); Resource Conservation and Recovery Act (RCRA); and multiple bills codified under Division 20 of the California Health and Safety Code. These procedures are well established and are practiced by local hazardous materials response teams - generally a local Fire Department.

Material determined to be hazardous will be contained by the appropriate hazardous material response team. The team will contact an approved contractor for cleanup. Details are contained in the local *Emergency Response Procedures* manual.

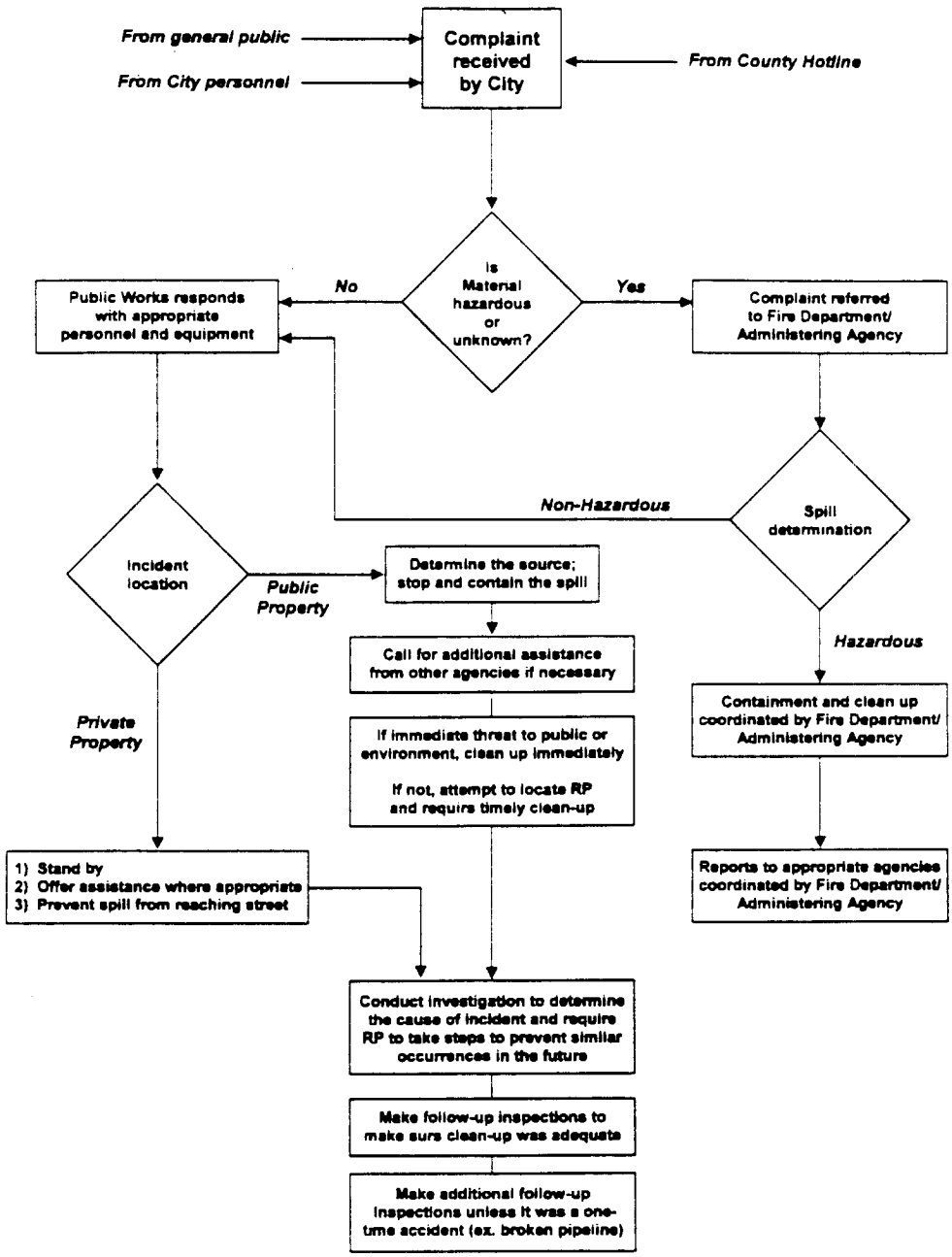


Figure B3-1
Spill Investigation, Containment and Cleanup

B3.2.2 Wastewater

Field crews responding to a sewage spill or overflow should contain the spill to prevent entry of the sewage into the storm drain system or natural watercourse. This will involve a coordinated effort between the sewer, street, and storm drain maintenance crews.

To the maximum extent possible, sewage should be prevented from entering the storm drain system by covering or blocking storm drain inlets and catch basins or by containing or diverting the overflow away from open channels and other storm drain fixtures (using sandbags, inflatable dams, etc.).

In the event that raw sewage enters a storm drain catch basin, where possible the sewage should be vacuumed or pumped out of the catch basin. If a sewage overflow enters a storm drain channel, where possible the downstream channel area should be blocked, flushed with potable water and the captured water pumped to a nearby sewer manhole. Any time a sewage spill enters the storm drain system and has the potential to reach coastal waterways, the local agency and L.A. County Dept. of Health Services, Bureau of Environmental Protection must be notified (323) 881-4147.

Once the spill is contained, it should be removed and the area disinfected. Every effort should be made to ensure that the disinfectant is not discharged to the storm drain system, using methods such as those described above.

B3.2.3 Other Non-hazardous Materials

Non-hazardous materials should generally be removed by appropriate crews with knowledge of or jurisdiction over the location of the spill, as indicated in Section B3.1. Because the situations and materials will vary widely, procedures will vary as well.

All materials should be prevented from entering waterways to the maximum extent possible. Many materials in sufficient quantities can deplete the oxygen level in receiving waters, or smother benthic communities. Typical examples of these materials include landscape waste, milk, flour, and many other organic liquids and solids or fine powders. These materials should generally be removed by first collecting and/or sweeping up all solids and disposing them in a landfill or other approved location. Liquids should be diverted to an area away from waterways where they may be removed with a vacuum truck or can soak into the ground.

Appendix C
Illicit Disposal Prioritization Guidance

If prioritization is necessary, evaluate and prioritize the illicit disposal incidents and their drainage areas to determine in what order they should be investigated. Compile information on previous reports of illicit disposal from various local sources such as Public Works, Fire, and Environmental Health Departments. Arrange the data by drainage area subunit of each watershed. Use this information to determine the highest priority areas for inspection, cleanup, and enforcement using a method such as the one shown in Table C-1.

Table C-1
Drainage Area Priorities for Illicit Disposal

Priority	Characteristic
Priority 1	Drainage area contains disposal incidents that have the greatest potential negative effect on stormwater quality. Materials may include - significant hazardous materials - materials from industrial/manufacturing facilities - large quantities of material, especially near receiving waters
Priority 2	Drainage area contains the highest number of detected or reported incidents of illicit disposal per year (this amount will vary among Permittees).
Priority 3	All other incidents of illicit disposal.

Appendix D

Education Program Guidance for Inspectors, Maintenance and Field Staff

General training will be conducted as part of the Five-Year Storm Water Public Education Strategy described in Section 2.V.C.1.b.iv of the Permit. Specific training on illicit discharges should be conducted for inspectors, maintenance and field staff who may encounter illicit discharges during their regular activities. The following are some of the issues that should be considered when conducting a training program.

- **Who should be trained?** Training for noticing and reporting suspected discharge or disposal may target a broad range of Permittee staff including all field workers and supervisors involved in storm drain system operation and maintenance as well as field inspectors. Training for investigation and follow-up may be targeted at selected Permittee staff with designated inspection, investigation and enforcement responsibility.
- **Who should train?** Trainers selected to conduct employee training should be familiar with both the work performed by the staff and stormwater pollution control principles. A trainer would typically be a superintendent, foreman, or lead worker who oversees the work of small to large crews or inspection staff.
- **What?** The training should cover two major areas: observation/noticing and reporting suspected illicit discharges or disposal; and follow-up to identify the nature and source of the discharge and take appropriate enforcement action to eliminate the discharge.
- **When?** Training can be conducted during regular safety or tailgate meetings or can be scheduled separately. All targeted employees should receive training at least once per year.

The scope of the training should include:

All staff:

- Overview of Clean Water Act and NPDES program
- Potential sources of stormwater pollution
- Potential impact of illicit non-stormwater discharges on receiving waters
- Field observation of illicit discharges/disposal/connections
- Reporting procedures and forms

Staff responsible for investigation and enforcement:

- Identification of nature and source of illicit discharges/disposal
- Municipal code requirements for stormwater pollution prevention on private property

In March 1997, a comprehensive training curriculum reference document, the *Municipal Activities, Public Employee Trainer Manual*, was distributed to all Permittees for their use. It was developed in response to Permit requirements that Permittees have "training materials for

educating appropriate Permittee employees regarding compliance with applicable stormwater permits." It contains suggestions on how to conduct an effective training program, such as:

- How to determine the appropriate audience
- Steps to organize, prepare and conduct a training session
- How to select appropriate presentation materials for specific categories of employees
- Who to contact regarding questions on the training program

The manual also contains all of the materials necessary to conduct the training sessions, including the presentation narrative, slides, video, and handouts.

Appendix C5 of the manual contains specific information for training staff in illicit discharge control, and suggests best management practices that should be used. Copies of the first two pages of Appendix C5 are attached.

APPENDIX C5
ACTIVITY CATEGORY: ILLICIT DISCHARGE CONTROL

This activity involves routine inspection for illegal connections to the storm drain system and evidence of illegal dumping activities. Many municipal employees; such as road maintenance crews, storm drain maintenance personnel, inspectors, sanitation workers, etc., can routinely look for and report incidents of illicit discharges to the storm drain system.

[*Word Slide MA-C5-1 Illicit Discharge Control Activities*]

Illicit Discharge Control Activities

- Illicit connection prevention, detection and removal
- Illegal dumping control

Word Slide MA-C5-1

Illicit discharge control is different from the other categories. Most of these BMPs are preventative measures taken by employees to control pollutant sources from the public's activities. Preventative measures include:

- **Illicit connection prevention, detection and removal**
- **Illegal dumping control**

Activity: Illicit Connection Prevention, Detection and Removal

[*Word Slide MA-C5-2 Activity: Illicit Connection Prevention, Detection and Removal*]

SUGGESTED BMPS
Activity: Illicit Connection Prevention, Detection and Removal

- Prohibit non-stormwater physical connections to the storm drain system
- Conduct visual inspections during construction
- Conduct field screenings
- If needed, use methods to verify physical connections
- Keep accurate records

Word Slide MA-C5-2

- **Prohibit non-stormwater physical connections to the storm drain system** - Ensure that existing building and plumbing codes prohibit non-stormwater physical connections to the storm drain system.
- **Conduct visual inspections during construction** - During the construction phase of new developments, conduct visual inspections to determine if any illegal connections are present.
- **Conduct field screenings** - Conduct field screenings to identify outfalls with characteristics of illegal connections.
- **If needed, use methods to verify physical connections** - Use smoke and dye testing or television camera inspections to verify physical connections.
- **Keep accurate records** - Keep records to track inspections and catalog the storm drain system.

APPENDIX C5
ACTIVITY CATEGORY: ILLICIT DISCHARGE CONTROL

Activity: Illegal Dumping Control

[*Word Slide MA-C5-3 Activity: Illegal Dumping Control*]

- **Train all employees to recognize and report illegal dumping** - Visual observations of catch basins and outfalls can be used to identify areas of suspected illegal dumpings. The following observations at a site could be indications of illegal dumping.
  - Odors
  - Deposits and stains
  - Liquid present during dry weather, especially if it is colored or is associated with an odor.

  Field analysis of the deposits and liquids present also helps to identify dumpings. pH, dissolved oxygen levels, water temperature, chlorine levels, copper levels, detergents and phenols are all useful analysis to help identify areas of illegal dumping.
- **Call 1-888-CLEANLA or City specific number** - Use this hotline to report illegal dumping and to ask questions about suspected dumping. Several other offices are available for questions and reporting:
  - Stormwater program offices - Your city may have an office devoted to the stormwater program. They should have information about illegal dumping available.
  - Call 911 or the police or fire department to report illegal dumping of hazardous material.

[*Note to Trainer: Determine if your city has a specific number for reporting illegal dumping. If there is such a number, provide it in this section.*]

SUGGESTED BMPs
Activity: Illegal Dumping Control

- Train employees to recognize and report illegal dumping
- Call 1-888-CLEANLA or City specific number

Word Slide MA-C5-3

[*Picture Slide MA-C5-4 Illegal Dumping*]

- Example of illegal dumping. Any substance being dumped down a storm drain is an example of illegal dumping.
- Call 1-888-CLEANLA to report the incident.

Illegal Dumping

Picture Slide MA-C5-4

Question and Answer Session

[*Note to Trainer: Provide some time now for questions on the last section of material.*]

Appendix E

Illicit Discharge Investigation and Elimination Guidance

E.1 INTRODUCTION

Once illicit discharges/disposal are detected and identified, they must be eliminated. Sometimes the source of the spill or discharge/disposal is apparent. The incident can be removed through voluntary cleanup/termination or enforcement procedures, and steps can be taken to prevent its recurrence. These prevention methods can include education and outreach materials for residents and businesses; preventive maintenance practices for infrastructure, vehicles and equipment; or additional enforcement.

When the source of the discharge is not apparent, further investigation will be necessary to eliminate it and prevent it from recurring. The following discusses methods that can be used to document the incident, determine the nature of the material, and investigate the source.

E.2 ADVANCE PLANNING

An effective investigation program requires good advance planning. Sufficient staff should be trained to conduct investigations so that qualified staff are available whenever investigations are necessary. Staff should become familiar with illicit discharge investigation and sampling procedures. A good source of information includes *Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems* (EPA/600/R-92/238, 1993, Pitt et al.). General guidance follows below to assist with overall planning, but should not be considered complete for proper sampling quality assurance purposes.

E.2.1 Equipment

Appropriate equipment for field investigations may include:

- Inspection checklists
- Storm drain system map
- Field data log book
- Pens, pencils
- Camera and film
- Flashlight
- Graduated container
- Tape measure
- Ping pong ball or other light floatable
- Stopwatch

- Temperature/pH/conductivity (EC) probe
- Field test kits (e.g., Lamotte test kit)
- 12 1-liter amber glass sample bottles
- 12 1-liter HDPE sample bottles
- Cooler with ice for sample preservation
- Gloves
- Splash goggles/safety glasses
- Deionized water in wash bottle
- First aid kit

E.2.2 Data Collection

Before entering the field, the inspection crew should locate information such as the following on a storm drain/street map for areas that will be investigated:

- All known or suspected pollutant generating activities
- Locations of NPDES dischargers
- All locations where storm drains enter open channels
- Catch basins and storm drain manholes

E.3 VISUAL OBSERVATION

Visual observation of the storm drain system and/or of activities on the surface can provide information on the source of illicit discharges. It is the simplest method to begin with and the least costly. Evidence of illicit discharges may only consist of visual observations because most illicit discharges are intermittent and will probably not be flowing when inspected. A field inspection crew should investigate the surface drainage system in the vicinity of suspected illicit discharges. This may include accessible areas in the public right-of-way adjacent to residences and businesses, catch basins, open channels near known points of discharge, and upstream manholes.

Photos of visual observations should be taken to aid subsequent data analysis and follow-up planning. The following types of visual observations should be recorded on an investigation checklist, such as the one attached to this appendix:

- Location
- General site description

- Amount, appearance of discharge/disposal
- Stains
- Structural cracking and corrosion
- Vegetative growth
- Nearby facilities with poor outside housekeeping practices
- Pipes/hoses connected to/directed toward drainage system

If the source of the discharge is determined, appropriate methods should be used to eliminate it through voluntary cleanup/termination or enforcement procedures, and steps should be taken to prevent its recurrence.

E.4 SAMPLING AND TESTING

If flow is observed, and the source of the discharge is not apparent, the crew should collect a sample and measure flow. Several tests should be conducted to determine the nature of the material. This can be compared to records of local facilities and possible pollutant generating activities as an aid in determining the possible sources of the flow.

The sample should be measured for pH, temperature and conductivity (EC). If any of these parameters are abnormal, or strong odors or flow discoloration are detected, the sample should be analyzed. This can be done with a field test kit, which will detect the presence of copper, phenols, detergents, and chlorine. Findings should be recorded on the inspection checklist.

If visual observations are abnormal and/or the field tests detect high concentrations of any constituent, the crew should consider collecting samples for laboratory analysis. The laboratory can usually supply properly cleaned sample bottles and specify either amber glass or plastic (HDPE) bottles depending on the analyses required. If there is enough flow, the field crew should fill several of each type of bottle to obtain enough sample volume for a range of analyses. If there is a limited quantity or sampling is difficult, the field crew should collect as much sample as possible so that the laboratory can run a limited set of analyses. The samples should be placed in a cooler filled with ice and transported to the lab(s) on the same day. Arrangements should be made prior to the field inspection with an analytical laboratory capable of performing the required analyses.

The laboratory analyses run on each sample should be carefully considered. Given the potential high cost for laboratory work, it is prudent to limit the number of analytical parameters (or analytes) tested for each sample. Tests may be selected based on the findings of indicator analyses, visual observations, field tests, and information collected about the types of materials processed, stored and/or spilled within each drainage area.

Guidance to selecting appropriate sampling methods and analyses can be found in the document referenced in Section E.2.

ILLICIT DISCHARGE/CONNECTION FIELD INVESTIGATION CHECKLIST						
Field Site Description						
Location:						
Dominant Watershed Land Uses: Industrial	Commercial	Residential	Public	Unknown		
Illicit Connections						
Connection found?	Station:	Type:				
	Size:	Bank:				
Discharge Observations						
Surface I.D.	Channel I.D.					
Flow (Yes/No)	(If yes, how much flow)					
If "yes" check:						
Odor: None	Musty	Sewage	Rotten Eggs	Sour Milk	Oily	Other _____
Color: Clear	Red	Yellow	Brown	Green	Grey	Other _____
Turbidity: Clear	Cloudy	Opaque	Suspended Solids	Other _____		
If "yes" or "no" check:						
Deposits/Stains: None	Sediments	Oily	Garbage	Other _____		
Structural Condition: Normal	Concrete Cracking	Metal	Corrosion	Other _____		
Vegetation Conditions None	Mosquito Larvae	Algae	Other _____			
Picture Taken: Yes/No	Roll No. _____	Photo No. _____				
Field Analysis (Parameters Optional)						
Water Temperature:	(C)	Chlorine (total):	(mg/L)			
Dissolved Oxygen:	(mg/L)	Copper (total):	(mg/L)			
Phenol (total):	(mg/L)	Detergents (surf):	(mg/L)			
PH:						
Comments:						
Source Investigation						
Investigation Conducted? Y N	Source Identified? Y N					
Name and Address of Identified Source/Owner of Discharge/Connection:						
Comments:						
Inspector Data						
Data Sheet filled out by:	Date:					
Signature:						

Appendix F
Enforcement Procedures Guidance

At a minimum, the enforcement strategy must contain the standard procedures listed in Sections 2.2.6 and 3.2.3 of this Illicit Connection/Illicit Discharge Elimination model program. The strategy should be adapted to each Permittee's normal enforcement procedures, and should contain guidance for the appropriate use of different levels of enforcement steps. While legal authority for Permittees varies, most enforcement processes follow a common sequence. The following example is the strategy adopted by Los Angeles County, which illustrates this approach:

1. Verbal Warning. Minor violations that may immediately be terminated.
2. Information Notice of Violation. First level of enforcement action for a minor violation not causing ongoing harm. Given 30 days to achieve compliance.
3. Notice of Noncompliance. Used where there is failure to abide by some specific directive, permit, ordinance section or regulation. May be given up to 30 days to achieve compliance.
4. Notice of Violation and Order to Comply. Generally in the form of an immediate cease and desist order. May be used at any time where continued discharge would cause a threat to the public health and safety, pollution, nuisance or damage to public or private property. Additional requirements may be imposed to provide a work plan for permanent correction of violation, cleanup, repair damage, etc.
5. Final Letter Notice. A letter notice sent in addition to any field issued Order to comply and may also be sent following lesser field actions if compliance is not achieved within the time constraints.
6. Where violation of multiple statutes is suspected, the agency staff should immediately report the incident to the Los Angeles County District Attorney's Environmental Crimes Strike Force. Where appropriate, the Strike Force will coordinate joint investigations with appropriate agencies. Investigations of criminal activity are treated as confidential. Cases accepted by the District Attorney are not to be reported under Proposition 65 while under active investigation.
7. If a specific act in violation of a city ordinance or county statute has occurred, the agency staff may formally request the District Attorney to file a complaint. The District Attorney may also unilaterally take such action on the basis of its own investigation.

Appendix G
Record Keeping and Documentation

On the pages that follow are examples of forms that can be used to document illicit discharges/disposal and illicit connections.

Illicit Discharge/Connection Reporting and Response

Date/Time: _____

Reported by: _____

Address: _____

Phone: _____

Location: _____

Report:

Material
- ☐ Hazardous
- ☐ Wastewater
- ☐ Oil/Grease
- ☐ Sediment
- ☐ Other_____
- ☐ Unknown

Land Use
- ☐ Residential
- ☐ Commercial
- ☐ Industrial
- ☐ Public

Est. Quantity: _____

Direct/Constructed Connections Found? ☐ Yes ☐ No

Description: _____

Source Investigation Conducted? ☐ Yes ☐ No Source Identified? ☐ Yes ☐ No

Source/Owner of Discharge/ Connection: _____

Entered Storm Drain System/Receiving Waters? ☐ Yes ☐ No

Action and Closure

Referred To: _____

Phone: _____

City: _____

Dept.: _____

Action Taken: _____

Date Closed: _____

UNDOCUMENTED CONNECTION / ILLICIT DISCHARGE

CHECK ONE: ☐ Undocumented ☐ Illicit Discharge		Tracking #
First Visit ? ☐ Yes ☐ No		If no, date of last visit:
Storm Drain/Channel Name:		
Drain Number:	*Unit:*	Line:
Location Description:		
Observed Land Use: ☐ Industrial ☐ Commercial ☐ Residential ☐ Multifamily		

CONNECTION DESCRIPTION

Station: +	Size: inches	Type: RCP /_____	Bank: Right / Left

FLOW DESCRIPTION

☐ Active ☐ Dry

VISUAL FLOW QUALITY

☐ Clear ☐ Not Clear	☐ Oily	☐ Sewage	☐ Visible Residue	☐ Staining
☐ Other (describe):				

WAS SOURCE INVESTIGATION DONE?

☐ No ☐ Yes (Report Attached)

Permit #	Permitted:

IDENTIFIED OWNER INFORMATION

NAME:	
STREET ADDRESS:	
CITY:	ZIP:

INSPECTION INFORMATION

DATE:	TIME: AM / PM
WEATHER CONDITIONS: Dry / Rain	
COMMENTS:	
INSPECTED BY:	
	PHONE # ( )

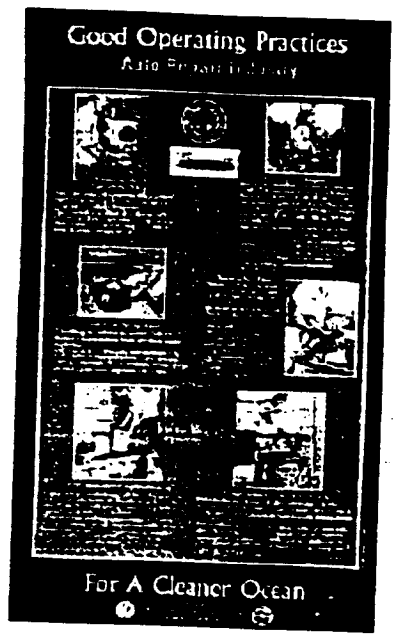
ATTACH PHOTO HERE

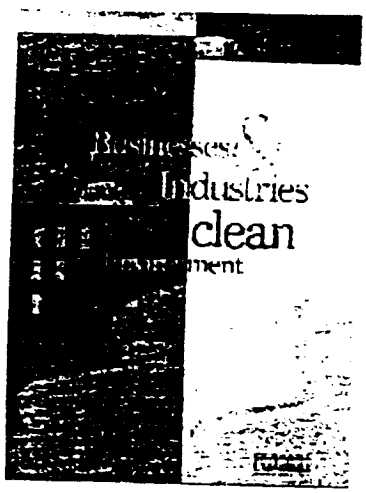
X

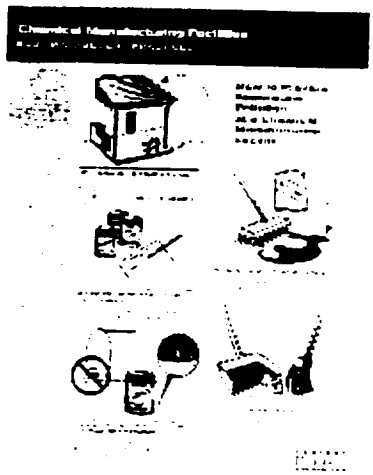
Appendix H
Existing Outreach Materials

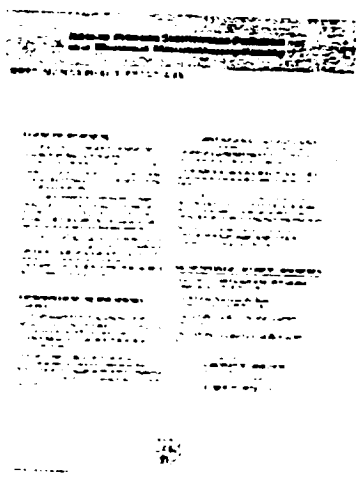
Appendix H
Existing Outreach Materials

The following are samples of existing outreach materials that can be used to educate the public about stormwater quality and potential illicit discharges. Additional materials are available from LACDPW by calling the Environmental Affairs Section at 626-458-3541.









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Appendix I

Illicit Connection Investigations Guidance

I.1 FIELD SCREENING TECHNIQUES

If evidence of an illicit discharge is detected, as described in Section 2, and the source does not appear to be evident or above ground, investigations will be conducted to determine if the discharge is being conveyed through an illicit connection. A good source of information includes *Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems* (EPA/600/R-92/238.1993, Pitt et al). General guidance follows below. These techniques can also be used if a Permittee elects to survey sections of their system for illicit connections.

I.1.1 Document Research

Maps of drainage facilities can be reviewed to locate upstream connections and drainage basins as an initial step to locate potential illicit connections. Other records, such as connection permits and discharge permits, can also be reviewed to determine if legal connections may be the source.

I.1.2 Physical Inspections

Catch basins, manholes and other facilities that can be safely investigated from the surface should be physically checked for evidence of connections. This may be a hard pipe connection, or could be a hose or other conveyance that directs a discharge into the storm drain facility.

Facilities that are large enough for personnel to enter can also be physically inspected, however, entry into facilities requires strict adherence to health and safety procedures, including confined space entry procedures. In general, a space is "confined" if it is not intended for human occupancy, has limited openings for entry or exit, and has insufficient natural or mechanical ventilation. Information on safety procedures can be found in many documents, including the *Occupational Safety and Health Guidance Manual*, National Institute for Occupational Safety and Health; *OSHA Safety and Health Standards 29 CFR 1910 (General Industry)*, US Department of Labor, and *Title 8 of the California Code of Regulations, General Industry Safety Order*.

I.1.3 Dye Tests

Dye tests can reveal illicit connections in areas where storm drain flows are unexplained and the Permittee has access to suspect facilities. Typical dye tests consist of the addition of fluorescent dye to a floor drain or waste line from a domestic, commercial or industrial process, followed by monitoring for the dye in downstream storm drains. Permittees should conduct dye testing facility by facility (in each area where unexplained flow exists) until all facilities in the area are tested.

I.1.4 Smoke Tests

Smoke tests can reveal if illicit connections exist, and can reveal their source. Storm drains are sealed via sandbags or other sealing devices (plugs, etc.) and smoking incendiary devices are ignited upstream of the seal. Simultaneous inspections inside area facilities should reveal illicit connections even in the absence of flow. As illicit discharges are intermittent, smoke tests offer real advantages over other types of illicit discharge source identification methods. However, as many legitimate connections to a storm drain may exist (roof drains, street drains, etc.) smoke may be observed extensively. This may cause some illicit connections to be missed, and create a problem with area businesses and residents as excessive smoke begins to enter private property.

I.1.5 T.V. Inspections

T.V. inspections can reveal if illicit connections exist, but cannot be used to view up the connection to determine the source. Robotized or otherwise mobile television cameras allow visual inspection of storm drains (pipes) too small or dangerous for personnel to enter. Although an excellent method of identifying and documenting illicit connections, T.V. inspections have high costs unless the equipment is already owned or can be borrowed from neighboring agencies.

Appendix J

Illicit Connection Prioritization Guidance

If prioritization is necessary, evaluate and prioritize the suspected illicit connections and their drainage areas to determine in what order they should be investigated. Compile information on areas of old commercial/industrial facilities and areas where drainage facilities are older than 30 years. Also compile information on previous reports of illicit discharge/dumping and spills from various local sources such as Public Works, Fire, and Environmental Health Departments. Arrange the data by drainage area subunit of each watershed. Use this information to determine the highest priority areas for inspection, cleanup, and enforcement using a method such as the one shown in Table J-1.

Table J-1
Drainage Area Priorities for Illicit Connections

Priority	Characteristic
Priority 1	- Drainage area contains - old commercial/industrial facilities and areas with heavy industry listed under subchapter N of 40 CFR Parts 405-471, - drainage system facilities older than 30 years, and - the highest number of detected or reported incidents of illicit discharge per year (this amount will vary among Permittees).
Priority 2	Drainage area contains - old commercial/industrial facilities and areas with heavy industry listed under subchapter N of 40 CFR Parts 405-471, and - drainage system facilities older than 30 years
Priority 3	Drainage area contains - old commercial/industrial facilities and areas with heavy industry listed under subchapter N of 40 CFR Parts 405-471.
Priority 4	All other suspected illicit connections.

The industries listed in the Code of Federal Regulations, Parts 405 to 471 are as follows (Note: not all numbers between 405 and 471 have been assigned):

405 Dairy Products Processing
406 Grain Mills
407 Canned and Preserved Fruits and Vegetables Processing
408 Canned and Preserved Seafood Processing
409 Sugar Processing
410 Textile Mills
411 Cement Manufacturing
412 Feedlots
413 Electroplating
414 Organic Chemicals, Plastics, and Synthetic Fibers
415 Inorganic Chemicals Manufacturing
417 Soap and Detergent Manufacturing
418 Fertilizer Manufacturing

419 Petroleum Refining
420 Iron and Steel Manufacturing
421 Nonferrous Metals Manufacturing
422 Phosphate Manufacturing
423 Steam Electric Power Generating
424 Ferroalloy Manufacturing
425 Leather Tanning and Finishing
426 Glass Manufacturing
427 Asbestos Manufacturing
428 Rubber Manufacturing
429 Timber Products Processing
430 Pulp, Paper, and Paperboard
431 The Builders' Paper and Board Mills
432 Meat Products
433 Metal Finishing
434 Coal Mining
435 Oil and Gas Extraction
436 Mineral Mining and Processing
439 Pharmaceutical Manufacturing
440 Ore Mining and Dressing
443 Paving and Roofing Materials (Tars and Asphalt)
446 Paint Formulating
447 Ink Formulating
454 Gum and Wood Chemicals Manufacturing
455 Pesticide Chemicals
457 Explosives manufacturing
458 Carbon Black Manufacturing
459 Photographic
460 Hospital
461 Battery Manufacturing
463 Plastics Molding and Forming
464 Metal Molding and Casting
465 Coil Coating
466 Porcelain Enameling
467 Aluminum forming
468 Copper Forming
469 Electrical and Electronic Components
Nonferrous Metals Forming and Metal Powders

Appendix K
Public Reporting

K.1 GENERAL

A method to receive reports from the public regarding illicit discharges was established by LACDPW for use by all Permittees. Permittees may choose to use this system, or may establish and maintain a local system that contains similar elements. Permittees who choose to establish their own system should model their procedures after those of the countywide system described below. The system must have a method to receive incoming calls, document necessary information about the incident, and dispatch the appropriate personnel or forward the information to the appropriate jurisdiction.

K.2 COUNTYWIDE REPORTING SYSTEM MAINTAINED BY LACDPW

K.2.1 Receiving Incoming Calls

In August 1993, the LACDPW established a Hotline number for all residents throughout the county to report illicit discharges and dumping into storm drains. That number was (800) 303-0003. In May 1996, the LACDPW established a new number to provide the public with information about several pollution prevention programs as well as reporting illicit discharges and dumping into storm drains:

(888) CLEAN LA

The LACDPW will publicize the number countywide, receive calls and collect relevant information, and route the calls to the appropriate local agency for investigation and cleanup. The number has 24-hour automated information that can access the dispatcher

K.2.2 Communications and Coordination

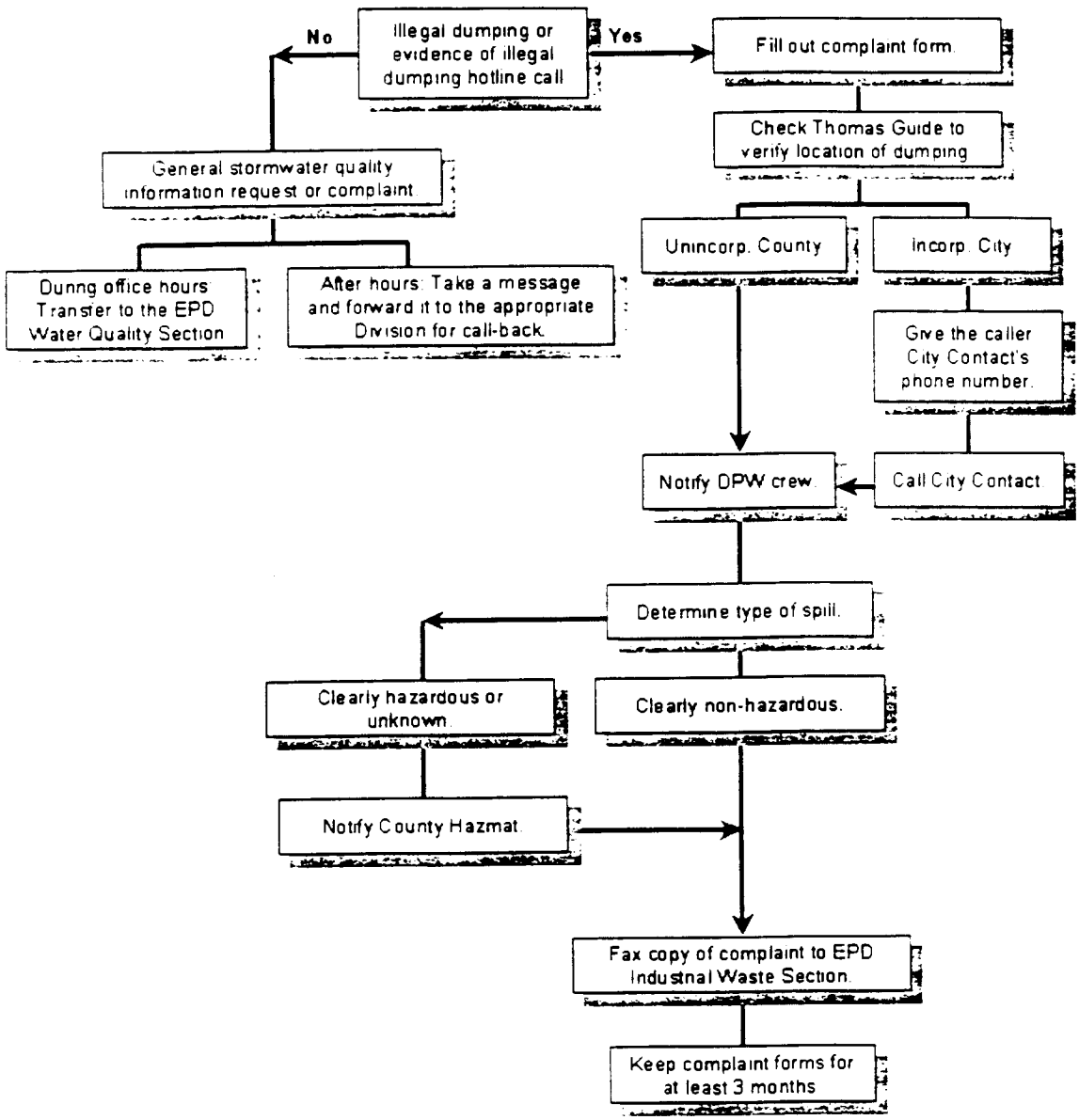
When Hotline calls come in, the LACDPW dispatcher will solicit information from the callers, fill out the LACDPW internal reporting form *Illegal Dumping Complaint*, and enter all information into the Hazardous Materials System Database (HMS Database). The dispatcher will check the Thomas Guide to verify the location of the incident then notify the designated local contact by phone and by faxing a copy of the *Illegal Dumping Complaint* form. The dispatcher will also give the caller the name and phone number of the local contact for his/her future reference. A flowchart depicting the Hotline response activities and a list of local Permittee contacts is attached. This list may be updated in the future as department contacts and phone numbers change.

For incidents under Los Angeles County's jurisdiction, the dispatcher will notify the appropriate field superintendent to ensure pollution prevention actions are taken. If the dispatcher suspects

that the incident involves hazardous materials, then the local Administering Agency will be notified.

The LACDPW will track all reports of illicit discharges within the unincorporated areas and where the County has jurisdiction by assigning each call a job order number. This job order number will remain open until all investigations and follow-up procedures have been completed, and staff phone and/or fax the dispatcher final information. The LACDPW will periodically generate reports on the status of open jobs to ensure that all reports are being fully addressed and response activities are being coordinated. All Hotline calls that are referred to the local jurisdiction will also receive a job order number. Once the incident is resolved, Permittees must notify the dispatcher, and the file will be closed.

Hotline Response Flowchart



24-HOUR SPILL RESPONSE TELEPHONE NUMBERS			
AGENCY	**NUMBER**	**TIME**	**CONTACT**
Agoura Hills	818-597-7300	7am-6pm/M-TH	Public Works Department
	818-878-1808	Non-business Hours	Sheriff, Lost Hills Station
Alhambra	626-570-5070	7:30am-5:30pm/M-TH 8am-5pm/F	Public Works
	626-570-5168	24 Hours	Police Department
Arcadia	626-446-2111	24 Hours	Police Department
	626-446-6188	24 Hours	Fire Department
Artesia	562-865-6262	8am-5pm/M-F	Maria Lloyd or Code Enforcement
	562-866-9061 x290	Non-business	Sheriff, Lakewood Station
Avalon	310-510-0174	24 Hours	Sheriff Dispatcher
Azusa	626-812-3200	24 Hours	Police Dept., Watch Commander
Baldwin Park	626-960-1955	24 Hours	Police Department, Dispatch
Bell	213-588-6211	7am-6pm/M-TH	Public Works or Development Serv.
	213-585-1245	24 Hours	Police Dept., Watch Commander
Bell Gardens	562-806-7770	7:30am-5pm/M-TH 7:30am-4pm/F	Public Works Department
	562-806-4573	Non-business Hours	Police Department
Bellflower	562-866-9061 x290	24 Hours	Sheriff, Lakewood Station
Beverly Hills	310-550-4985	24 Hours	Dispatch, Fire/Police
Bradbury	626-285-7171	24 Hours	Sheriff, Temple City Sta., Watch Sgt.
Burbank	Streets, Gutters, Sidewalks, & Drains		
	818-238-3800	6:30am-4pm/M-F	Public Works Street & Sewer Maint.
	Parks, Trails, or Hillside Open Space		
	818-238-5343	6:30am-6:30pm/M-F	Parks and Recreation
	818-238-3000	Non-Business Hours	Police Dept., Duty Desk
Calabasas	818-878-4225	8am-5pm/M-F	Public Works
	818-591-9682	Non-business Hours	City Manager
Caltrans	213-897-0383	24 Hours	Communications Center
Carson	310-830-7600	7am-6pm/M-TH	City Hall/Street Maintenance
	310-830-1123	Non-business Hours	Sheriff, Carson Station
Cerritos	562-860-0311	8am-5pm/M-F	Rod Posada, Maint. Super.
	562-860-4018	Non-business Hours	Exchange

24-HOUR SPILL RESPONSE TELEPHONE NUMBERS			
AGENCY	**NUMBER**	**TIME**	**CONTACT**
Claremont	909-629-9671	24 Hours	Fire Department, Dispatch
Commerce	213-881-2455	24 Hours	Fire Department
	213-722-4805	8am-6pm/M-TH	Public Services
Compton	310-605-5600	24 Hours	Police Dept., Watch Commander
Covina	626-858-4413	24 Hours	Police Dispatcher
	626-331-3391	24 Hours	Police Front Desk
Cudahy	213-773-5146	8am-6pm/M-TH 8am-5pm/F	Community Services Dept. or City Manager's Office
	213-264-4151	24 Hours	Sheriff, East L.A., Complaint Desk
Culver City	626-458-3559	7am-5:30pm/M-TH	Joe Baiocco, LACDPW/illegal discharge
	310-839-1146	24 Hours	Fire Dept., Dispatch
Diamond Bar	909-595-2264	24 Hours	Sheriff, Walnut Station, Watch Deputy
Downey	562-861-9221	24 Hours	Fire Department
Duarte	626-357-7931	7:30am-6pm/M-TH	Emergency Response
	626-451-2078	Non-business Hours	Beeper number
	909-860-4470	Non-business Hours	Bill Ornelas, home number
El Monte	626-580-2100	24 Hours	Police Department
	626-580-2150	24 Hours	Fire Department
El Segundo	310-322-4670 x363	24 Hours	Fire Department/Steve Tsumura
Gardena	310-323-7911	24 Hours	Fire Dispatch
Glendale	818-956-4800	24 Hours	Fire Department
Glendora	626-914-8250	24 Hours	Police Department
Hawaiian Gardens	562-420-2641	8am-5:30 pm M-TH	Public Works
	562-403-4406	24 Hours	Police Department
Hawthorne	310-970-7052	24 Hours	Police Dispatcher
	310-970-7968	24 Hours	Fire Department
Hermosa Beach	310-318-0313	24 Hours	Police Dispatcher
Hidden Hills	213-890-4317	8am-4:30pm/M-F	L.A. Co. Fire Department
	213-881-2455	Non-business Hours	Dispatch, Health HAZMAT

24-HOUR SPILL RESPONSE TELEPHONE NUMBERS			
AGENCY	**NUMBER**	**TIME**	**CONTACT**
Huntington Park	213-584-6253	8am-5pm/M-TH	City Engineer Department
	213-587-5211	Non-business Hours	Police Department
Industry	626-333-2211	9am-5pm/M-F	John Ballas or City Engineering
	Complaints in Road & Sewer Maintenance Jurisdictions - Call LACDPW Yard during Non-Business Hours		
	626-330-3322	Non-business Hours	Sheriff, Watch Commander
Inglewood	310-412-5491	6:30am-3:00pm	Sewer Dept.
	310-671-8233	24 Hours	Fire Dept. Communications Center
Irwindale	626-962-3601	24 Hours	Police Department
La Cañada Flintridge	Complaints in Road & Flood Maintenance Jurisdictions – Call LACDPW Yard 24 Hours --		
	Other Calls:	7am-5pm/M-TH	City Hall/Public Works
	818-790-8880	8am-5pm/F	
	818-248-3464	24 Hours	Sheriff, Crescenta Valley Station
La Habra Heights	562-694-6302	7:30am-6pm/M-TH	City Hall (Call First)
	562-694-1465	7:30am-6pm/M-TH	City Hall (No recorder)
	562-694-8283	Non-business Hours	City Volunteer Fire Dept.
Lakewood	562-866-9771 x2500	7:30am-5:30pm/M-F	Public Works
	562-866-9061 x290	Non-business Hours	Sheriff, Lakewood Station
La Mirada	562-943-0131 x250	7am-5pm/M-F	Environmental Services Dept.
	562-690-3845	10am-8pm/M-TH, 10am-9pm/F-Sat,	Public Safety
	562-943-5512	12pm-8pm/Sun&Non-bus. hours	L.A.County Fire Station 49
Lancaster	805-723-6211	7:30am-4:30pm/M-F	Maintenance Yard
	805-540-1579	Non-business Hours	Pager Number
La Puente	626-855-1500	8am-5pm/M-F	Dan Chadwick
	626-330-3322	24 Hours	Sheriff, Watch Commander
La Verne	909-596-8741	8am-6pm/M-TH	Public Works Dept. or Dan Keesey
	909-596-1913	Non-business Hours	Police Department
Lawndale	310-970-2160	7:30am-5:30pm/M-TH	Public Works Department
	310-671-7531	24 Hours	Sheriff, Dispatch
	310-679-1131	24 Hours	L.A. Co. Fire Dept., Hazmat
Lomita	310-325-7110	8:15am-4:30/M-F	Gary Irwin or Code Enforcement
	310-539-1661	24 Hours	Sheriff-complaint desk

24-HOUR SPILL RESPONSE TELEPHONE NUMBERS			
AGENCY	**NUMBER**	**TIME**	**CONTACT**
Long Beach	562-570-2722	7:30am-4:30pm/M-F	Street Maint./Storm Drains
	562-435-6711	Non-business Hours	Police Communication
Los Angeles	213-847-4852	7am-4:30pm/M-F	Stormwater Mangement
or	213-485-5500	Non-business Hours	City Hall Operator
Refer Calller To:	800-974-9794	7am-4:30pm/M-F	L.A. City Hotline
Lynwood	310-603-0267	7am-6pm/M-TH	Engineering - Ted Semaan
	562-861-9221	Non-business Hours	Fire Department
Malibu	310-456-2489 x247	9am-5pm/M-F	Public Works -Rick Morgan(24-hr)
	818-878-1808	Non-business Hours	Sheriff - Emergency Only
Manhattan Beach	310-545-5621 x380	8am-4:30pm/M-F	Public Works Department
	310-545-5621 x222	Non-business Hours	Police Department
Maywood	213-562-5005	24 Hours	Police Department
Monrovia	626-359-3231	7am-6pm/M-TH	Engineering Department
	626-359-1152	Non-business Hours	Police Department, Dispatch
Montebello	213-887-1460	8am-5pm/M-F	Public Works Department
	213-887-4510	24 Hours	Charlie Ford, HAZMAT Fire Dept.
	213-887-1212	24 Hours	Cpt Mike Knight, Police Dept.
Monterey Park	626-307-1320	8am-5pm/M-F	City Engineer
	626-573-1311	24 Hours	Police Department
Norwalk	562-929-5511	6am-6pm/M-TH	Public Services Department
	562-929-5700	8am-6pm/F	Public Services Department
	562-863-8711	Non-business Hours	Sheriff - complaints desk
Palmdale	805-267-5234	8:30am-5pm/M-F	Code Enforcement Division
	805-267-4300	Non-business Hours	Sheriff
Palos Verdes Estates	310-378-4211	24 Hours	Police Department
	310-378-0383	7am-3:30pm/M-F	Public Works Department
Paramount	562-220-2020	7:30-5:30pm/M-TH	Public Works Department
	562-866-9061 x290	Non-business Hours	Sheriff, Lakewood Station
Pasadena	626-405-4501	24 Hours	Police Department
Pico Rivera	562-949-2421	24 Hours	Sheriff - complaint desk
Pomona	909-622-1241	24 Hours	Police Department Dispatch
Rancho Palos Verdes	310-539-1661	24 Hours	Lomita Sheriff - complaint desk
Redondo Beach	310-379-5416	24 Hours	Fire Dispatcher

24-HOUR SPILL RESPONSE TELEPHONE NUMBERS			
AGENCY	**NUMBER**	**TIME**	**CONTACT**
Rolling Hills	310-377-1521	7:30am-5pm M-F	Code Enforcement
	310-539-1661	24 Hours	Sheriff - complaint desk
Rolling Hills Estates	310-377-1577	7:30am-5:30pm/M-TH 7:30am-4:30pm/F	City Hall
	310-539-1661	Non-business Hours	Sheriff - complaint desk
Rosemead	626-288-6671	7am-6pm/M-TH	Engineering Division
	626-285-7171	Non-business Hours	Sheriff, Temple City Sta., Watch Sgt.
San Dimas	909-394-6240	7:30am-5:30pm/M-TH 8am-5pm/F	Department of Public Works
	909-595-2264	Non-business Hours	Sheriff, Watch Deputy
San Fernando	818-898-1293	7am-5pm/M-F	Public Works Dept. Yard
	818-898-1267	Non-business Hours	Police Department
San Gabriel	626-308-2880	24 Hours	Fire Department (Call First)
	626-288-5050	24 Hours	Fire Department/Emergency
San Marino	626-300-0720	24 Hours	Police Department
	626-300-0735	24 Hours	Fire Department
Santa Clarita	805-222-7222	8am-5pm/M-F	Building & Safety
	805-255-1121	24 Hours	Sheriff
Santa Fe Springs	562-944-9713	8am-5pm/M-F	Fire Department, Santa Fe Springs
	562-868-1711	24 Hours	Fire Department, Downey Dispatch
Santa Monica	310-458-8533	6:30am-4pm/M-F	Wastewater
	310-458-2210	6:30 am-6pm/M-F	Industrial Waste
	310-458-8672	24 Hours	(illegal dumping) Fire Dept. Dispatch
Sierra Madre	626-355-1414	24 Hours	Police Department
Signal Hill	562-989-7200	24 Hours	Police Department
South El Monte	626-285-7171	24 Hours	Sheriff, Temple City Sta., Watch Sgt.
South Gate	213-563-5400	24 Hours	Police Department
South Pasadena	626-799-1121	24 Hours	Police & Fire Dispatcher
Temple City	626-285-2171	8am-6pm/M-TH	Public Services
	626-285-7171	24 Hours	Sheriff, Temple City Sta., Watch Sgt.
Torrance	310-618-5929	7:30am-5:30pm/M-TH-	Environmental Health
	310-618-5641	24 Hours	Police Dept. - complaint desk
Ventura County	805-650-4064	7:30am-5:30pm/M-TH	Vicky Musgrove
Vernon	213-583-6331	24 Hours	Fire Dept.

24-HOUR SPILL RESPONSE TELEPHONE NUMBERS			
AGENCY	**NUMBER**	**TIME**	**CONTACT**
Walnut	909-598-5241	7:30am-5:30pm/M-TH 8am to 5pm/F	Building & Safety Department
	909-594-7175	Non-business Hours	Answering Service/Emergency
West Covina	626-814-8500	24 Hours	Police/Fire Department
West Hollywood	213-848-6404	8am-6pm/M-F	Environ. Services Div, Code Enforce.
	213-855-8850	Non-business Hours	Sheriff, West Hollywood Station
	213-262-2111	Non-business Hours	L.A. Co. Fire Department
Westlake Village	805-653-6597	8am-5pm/M-F	Westlake Village Public Works
	818-878-1808	Non-business Hours	Sheriff, Lost Hills Station
Whittier	562-464-3561	8am-5pm/M-F	Public Works Department
	562-695-5214	Non-business Hours	Whittier Pumping Plant II

Appendix L
Hazardous Substances

L.1 Code of Federal Regulations (CFR) References

The following items are included here:

- The characteristics of "unlisted" hazardous substances from 40 CFR § 261.20 through 261.24
- "Listed" hazardous substances from Table 302.4 of 40 CFR § 302

L.1.1 Characteristics of "Unlisted" Hazardous Substances

261.20 General.

(a) A solid waste, as defined in 261.2, which is not excluded from regulation as a hazardous waste under 261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this subpart.

[Comment: 262.11 of this chapter sets forth the generator's responsibility to determine whether his waste exhibits one or more of the characteristics identified in this subpart]

(b) A hazardous waste which is identified by a characteristic in this subpart is assigned every EPA Hazardous Waste Number that is applicable as set forth in this subpart. This number must be used in complying with the notification requirements of section 3010 of the Act and all applicable recordkeeping and reporting requirements under parts 262 through 265, 268, and 270 of this chapter.

(c) For purposes of this subpart, the Administrator will consider a sample obtained using any of the applicable sampling methods specified in appendix I to be a representative sample within the meaning of part 260 of this chapter.

[Comment: Since the appendix I sampling methods are not being formally adopted by the Administrator, a person who desires to employ an alternative sampling method is not required to demonstrate the equivalency of his method under the procedures set forth in 260.20 and 260.21.]

[45 FR 33119, May 19, 1980, as amended at 51 FR 40636, Nov. 7, 1986; 55 FR 22684, June 1, 1990; 56 FR 3876, Jan. 31, 1991]

261.21 Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has flash point less than 60øC (140øF), as determined by a Pensky-Martens Closed Cup Tester, using the test method

specified in ASTM Standard D-93-79 or D-93-80 (incorporated by reference, see 260.11), or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78 (incorporated by reference, see 260.11), or as determined by an equivalent test method approved by the Administrator under procedures set forth in 260.20 and 260.21.

(2) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

(3) It is an ignitable compressed gas as defined in 49 CFR 173.300 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under 260.20 and 260.21.

(4) It is an oxidizer as defined in 49 CFR 173.151.

(b) A solid waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981; 55 FR 22684, June 1, 1990]

261.22 Characteristic of corrosivity.

(a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using Method 9040 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW-846, as incorporated by reference in 260.11 of this chapter.

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55øC (130øF) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW-846, as incorporated by reference in 260.11 of this chapter.

(b) A solid waste that exhibits the characteristic of corrosivity has the EPA Hazardous Waste Number of D002.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981; 55 FR 22684, June 1, 1990; 58 FR 46049, Aug. 31, 1993]

261.23 Characteristic of reactivity.

(a) A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

(1) It is normally unstable and readily undergoes violent change without detonating.

(2) It reacts violently with water.

(3) It forms potentially explosive mixtures with water.

(4) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

(7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

(8) It is a forbidden explosive as defined in 49 CFR 173.51, or a Class A explosive as defined in 49 CFR 173.53 or a Class B explosive as defined in 49 CFR 173.88.

(b) A solid waste that exhibits the characteristic of reactivity has the EPA Hazardous Waste Number of D003.

[45 FR 33119, May 19, 1980, as amended at 55 FR 22684, June 1, 1990]

261.24 Toxicity characteristic.

(a) A solid waste exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, test Method 1311 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW-846, as incorporated by reference in 260.11 of this chapter, the extract from a representative sample of the waste contains any of the contaminants listed in table 1 at the concentration equal to or greater than the respective value given in that table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purpose of this section.

(b) A solid waste that exhibits the characteristic of toxicity has the EPA Hazardous Waste Number specified in Table I which corresponds to the toxic contaminant causing it to be hazardous.

Table 1-Maximum Concentration of Contaminants for the Toxicity Characteristic

EPA HW No. (1)	Contaminant	CAS No. (2)	Regulatory Level (mg/L)
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	(4)
			200.0
D024	m-Cresol	108-39-4	(4)
			200.0
D025	p-Cresol	106-44-5	(4)
			200.0
D026	Cresol		(4)
			200.0
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	(3)0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	(3)0.13
D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentrachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	(3)5.0
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

(1)Hazardous waste number.

(2)Chemical abstracts service number.

(3)Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

(4)If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

[55 FR 11862, Mar. 29, 1990, as amended at 55 FR 22684, June 1, 1990; 55 FR 26987, June 29, 1990; 58 FR 46049, Aug. 31, 1993]

N.1.2 List of Hazardous Substances and Reportable Quantities

302.4-List of Hazardous Substances and Reportable Quantities
[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous Substance	CASRN	Regulatory Synonyms	RQ	Statutory Code a	RCRA Waste Number	Final RQ Category Pounds (Kg)
Acenaphthene	83329		1*	1		B 100 (45.4)
Acenaphthylene	208968		1*	1		D 5000 (2270)
Acetaldehyde	75070	Ethanal	1000	1,2,3,4	U001	C 1000 (454)
Acetaldehyde, chloro-	107200	Chloroacetaldehyde	1*	4	P023	C 1000 (454)
Acetaldehyde, trichloro-	75876	Chloral	1*	4	U034	D 5000 (2270)
Acetamide	60355		1*	1		B 100 (45.4)
Acetamide, N-(aminothioxomethyl)-	591082	1-Acetyl-2-thiourea	1*	4	P002	C 1000 (454)
Acetamide, N-(4-ethoxyphenyl)-	62442	Phenacetin	1*	4	U187	B 100 (45.4)
Acetamide, 2-fluoro-	640197	Fluoroacetamide	1*	4	P057	B 100 (45.4)
Acetamide, N-9H-fluoren-2-yl-	53963	2-Acetylaminofluorene	1*	3,4	U005	X 1 (0.454)
Acetic acid	64197		1000	1		D 5000 (2270)
Acetic acid (2,4-dichloro phenoxy)-, salts & esters	94757	2,4-D Acid, 2,4-D, salts and esters	100	1,3,4	U240	B 100 (45.4)
Acetic acid, lead(2+) salt	301042	Lead acetate	5000	1,4	U144	A 10 (4.54)
Acetic acid, thallium(1+) salt	563688	Thallium(I) acetate	1*	4	U214	B 100 (45.4)
Acetic acid, (2,4,5-trichlorophenoxy)	93765	2,4,5-T 2,4,5-T acid	100	1,4	U232	C 1000 (454)
Acetic acid, ethyl ester	141786	Ethyl acetate	1*	4	U112	D 5000 (2270)
Acetic acid, fluoro-, sodium salt	62748	Fluoroacetic acid, sodium salt	1*	4	P058	A 10 (4.54)
Acetic anhydride	108247		1000	1		D 5000 (2270)
Acetone	67641	2-Propanone	1*	4	U002	D 5000 (2270)
Acetone cyanohydrin	75865	Propanenitrile, 2-hydroxy-2-methyl -2-Methyllactonitrile	10	1,4	P069	A 10 (4.54)
Acetonitrile	75058		1*	3,4	U003	D 5000 (2270)
Acetophenone	98862	Ethanone, 1-phenyl-	1*	3,4	U004	D 5000 (2270)
2-Acetylaminofluorene	53963	Acetamide, N-9H-fluoren-2-yl	1*	3,4	U005	X 1 (0.454)
Acetyl bromide	506967		5000	1		D 5000 (2270)
Acetyl chloride	75365		5000	1,4	U006	D 5000 (2270)
1-Acetyl-2-thiourea	591082	Acetamide, N-(aminothioxomethyl)-	1*	4	P002	C 1000 (454)
Acrolein	107028	2-Propenal	1	1,2,3,4	P003	X 1 (0.454)
Acrylamide	79061	2-Propenamide	1*	3,4	U007	D 5000 (2270)
Acrylic acid	79107	2-Propenoic acid	1*	3,4	U008	D 5000 (2270)
Acrylonitrile	107131	2-Propenenitrile	100	1,2,3,4	U009	B 100 (45.4)
Adipic acid	124049		5000	1		D 5000 (2270)
Aldicarb	116063	Propanal, 2-methyl-2-(methylthio)- ,O-[(methylamino)carbonyl]oxime	1*	4	P070	X 1 (0.454)
Aldrin	309002	1,4,5,8-Dimethanonaphthalene, 1,2, 3,4,10,10-hexachloro-1,4,4a,5, 8,8a-hexahydro-, (1alpha, 4alpha, 4abeta,5alpha,8alpha,8abeta)-	1	1,2,4	P004	X 1 (0.454)
Allyl alcohol	107186	2-Propen-1-ol	100	1,4	P005	B 100 (45.4)
Allyl chloride	107051		1000	1,3		C 1000 (454)
Aluminum phosphide	20859738		1*	4	P006	B 100 (45.4)
Aluminum sulfate	10043013		5000	1		D 5000 (2270)
5-(Aminomethyl)-3-isoxazolol	2763964	Muscimol 3(2H)-Isoxazolone, 5- (aminomethyl)-	1*	4	P007	C 1000 (454)
4-Aminobiphenyl	92671		1*	3		X 1 (0.454)

+4-Aminopyridine	504245	4-Pyridinamine	1*	4	P008	C
1000 (454)						
+Amitrole	61825	1H-1,2,4-Triazol-3-amine	1*	4	U011	A
10 (4.54)						
+Ammonia	7664417		100	1		B
100 (45.4)						
+Ammonium acetate	631618		5000	1		D
5000 (2270)						
+Ammonium benzoate	1863634		5000	1		D
5000 (2270)						
+Ammonium bicarbonate	1066337		5000	1		D
5000 (2270)						
+Ammonium bichromate	7789095		1000	1		A
10 (4.54)						
+Ammonium bifluoride	1341497		5000	1		B
100 (45.4)						
+Ammonium bisulfite	10192300		5000	1		D
5000 (2270)						
+Ammonium carbamate	1111780		5000	1		D
5000 (2270)						
+Ammonium carbonate	506876		5000	1		D
5000 (2270)						
+Ammonium chloride	12125029		5000	1		D
5000 (2270)						
+Ammonium chromate	7788989		1000	1		A
10 (4.54)						
+Ammonium citrate, dibasic	3012655		5000	1		D
5000 (2270)						
+Ammonium fluoborate	13826830		5000	1		D
5000 (2270)						
+Ammonium fluoride	12125018		5000	1		B
100 (45.4)						
+Ammonium hydroxide	1336216		1000	1		C
1000 (454)						
+Ammonium oxalate	6009707		5000	1		D
5000 (2270)						
+	5972736					
+	14258492					
+Ammonium picrate	131748	Phenol, 2,4,6-trinitro-, ammonium	1*	4	P009	A
10 (4.54)		salt				
+Ammonium silicofluoride	16919190		1000	1		C
1000 (454)						
+Ammonium sulfamate	7773060		5000	1		D
5000 (2270)						
+Ammonium sulfide	12135761		5000	1		B
100 (45.4)						
+Ammonium sulfite	10196040		5000	1		D
5000 (2270)						
+Ammonium tartrate	14307438		5000	1		D
5000 (2270)						
+	3164292					
+Ammonium thiocyanate	1762954		5000	1		D
5000 (2270)						
+Ammonium vanadate	7803556	Vanadic acid, ammonium salt	1*	4	P119	C
1000 (454)						
+Amyl acetate	628637		1000	1		D
5000 (2270)						
+ iso-Amyl acetate	123922					
+ sec-Amyl acetate	626380					
+ tert-Amyl acetate	625161					
+ Aniline	62533	Benzenamine	1000	1,3,4	U012	D
5000 (2270)						
+ o-Anisidine	90040		1*	3		B
100 (45.4)						
+Anthracene	120127		1*	2		D
5000 (2270)						
+Antimony **	7440360		1*	2		D
5000 (2270)						
+ ANTIMONY AND COMPOUNDS (**)	N.A.	Antimony Compounds	1*	2,3		
+ Antimony Compounds (**)	N.A.	ANTIMONY AND COMPOUNDS	1*	2,3		
+Antimony pentachloride	7647189		1000	1		C
1000 (454)						
+Antimony potassium tartrate	28300745		1000	1		B
100 (45.4)						
+Antimony tribromide	7789619		1000	1		C
1000 (454)						
+Antimony trichloride	10025919		1000	1		C
1000 (454)						
+Antimony trifluoride	7783564		1000	1		C
1000 (454)						
+Antimony trioxide	1309644		5000	1		C
1000 (454)						
+Argentate(1-), bis(cyano-C)-, potassium	506616	Potassium silver cyanide	1*	4	P099	X
1 (0.454)						
+ Aroclor 1016	12674112	Aroclors	10	1,2,3		X
1 (0.454)		PCBs				
		POLYCHLORINATED BIPHENYLS				
+ Aroclor 1221	11104282	Aroclors	10	1,2,3		X
1 (0.454)		PCBs				
		POLYCHLORINATED BIPHENYLS				
+ Aroclor 1232	11141165	Aroclor	10	1,2,3		X
1 (0.454)		PCBs				
		POLYCHLORINATED BIPHENYLS				
+ Aroclor 1242	53469219	Aroclors	10	1,2,3		X
1 (0.454)		PCBs				
		POLYCHLORINATED BIPHENYLS				

Aroclor 1248 1 (0.454)	12672296	Aroclors PCBs POLYCHLORINATED BIPHENYLS	10	1,2,3			X
Aroclor 1254 1 (0.454)	11097691	Aroclors PCBs POLYCHLORINATED BIPHENYLS	10	1,2,3			X
Aroclor 1260 1 (0.454)	11096825	Aroclors PCBs POLYCHLORINATED BIPHENYLS	10	1,2,3			X
Aroclors 1 (0.454)	1336363	PCBs POLYCHLORINATED BIPHENYLS	10	1,2,3			X
Aroclor 1016 1 (0.454)	12674112		10	1,2,3			X
Aroclor 1221 1 (0.454)	11104282		10	1,2,3			X
Aroclor 1232 1 (0.454)	11141165		10	1,2,3			X
Aroclor 1242 1 (0.454)	53469219		10	1,2,3			X
Aroclor 1248 1 (0.454)	12672296		10	1,2,3			X
Aroclor 1254 1 (0.454)	11097691		10	1,2,3			X
Aroclor 1260 1 (0.454)	11096825		10	1,2,3			X
Arsenic ** 1 (0.454)	7440382		1*	2,3			X
Arsenic acid 1 (0.454)	1327522 7778394	Arsenic acid H3AsO4	1*	4	P010		X
Arsenic acid H3AsO4 1 (0.454)	1327522 7778394	Arsenic acid	1*	4	P010		X
ARSENIC AND COMPOUNDS (**)	N.A.	Arsenic Compounds (inorganic including arsine)	1*	2,3			
Arsenic Compounds (**) (inorganic including arsine)	N.A.	ARSENIC AND COMPOUNDS	1*	2,3			
Arsenic disulfide 1 (0.454)	1303328		5000	1			X
Arsenic oxide As2O3 1 (0.454)	1327533	Arsenic trioxide	5000	1,4	P012		X
Arsenic oxide As2O5 1 (0.454)	1303282	Arsenic pentoxide	5000	1,4	P011		X
Arsenic pentoxide 1 (0.454)	1303282	Arsenic oxide As2O5	5000	1,4	P011		X
Arsenic trichloride 1 (0.454)	7784341		5000	1			X
Arsenic trioxide 1 (0.454)	1327533	Arsenic oxide As2O3	5000	1,4	P012		X
Arsenic trisulfide 1 (0.454)	1303339		5000	1			X
Arsine, diethyl- 1 (0.454)	692422	Diethylarsine	1*	4	P038		X
Arsinic acid, dimethyl- 1 (0.454)	75605	Cacodylic acid	1*	4	U136		X
Arsonous dichloride, phenyl- 1 (0.454)	696286	Dichlorophenylarsine	1*	4	P036		X
Asbestos *** 1 (0.454)	1332214		1*	2,3			X
Auramine 100 (45.4)	492808	Benzenamine, 4,4'-carbonimidoylbis- (N,N-dimethyl-	1*	4	U014		B
Azaserine 1 (0.454)	115026	L-Serine, diazoacetate (ester)	1*	4	U015		X
1H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ester (Molinate)	2212671		1*	4	U365		
Aziridine 1 (0.454)	151564	Ethyleneimine	1*	3,4	P054		X
Aziridine, 2-methyl- 1 (0.454)	75558	2-Methyl aziridine 1,2-Propylenemine	1*	3,4	P067		X
Azirino[2',3':3,4]pyrrolo[1,2-a] indole-4,7-dione,6-amino-8-[[(aminocarbonyloxy]methyl]-1,1a,2, 8,8a,8b-hexahydro-8a-methoxy-5- methyl-,[1aS-(1aalpha,8beta, 8aalpha,8balpha)]-	50077	Mitomycin C	1*	4	U010		A
Barium cyanide 10 (4.54)	542621		10	1,4	P013		A
Benz[j]aceanthrylene, 1,2-dihydro- 3-methyl-	56495	3-Methylcholanthrene	1*	4	U157		A
Benz[c]acridine 100 (45.4)	225514		1*	4	U016		B
Benzal chloride 5000 (2270)	98873	Benzene, dichloromethyl-	1*	4	U017		D
Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)- 5000 (2270)	23950585	Pronamide	1*	4	U192		D

Benz[a]anthracene	56553	Benzo[a]anthracene	1*	2,4	U018	A
		1,2-Benzanthracene				
1,2-Benzanthracene	56553	Benz[a]anthracene	1*	2,4	U018	A
		Benzo[a]anthracene				
Benz[a]anthracene, 7,12-dimethyl-	57976	7,12-Dimethylbenz[a]anthracene	1*	4	U094	X
Benzenamine	62533	Aniline	1000	1,3,4	U012	D
Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl-	492808	Auramine	1*	4	U014	B
Benzenamine, 4-chloro-	106478	p-Chloroaniline	1*	4	P024	C
Benzenamine, 4-chloro-2-methyl-, hydrochloride	3165933	4-Chloro-o-toluidine, hydrochloride	1*	4	U049	B
Benzenamine, N,N-dimethyl-4-phenylazo-	60117	Dimethyl aminoazobenzene	1*	3,4	U093	A
		p-Dimethyl-aminoazobenzene				
Benzenamine, 2-methyl-	95534	o-Toluidine	1*	3,4	U328	B
Benzenamine, 4-methyl-	106490	p-Toluidine	1*	4	U353	B
Benzenamine, 4,4'-methylenebis(2-chloro-	101144	4,4'-Methylenebis(2-chloroaniline)	1*	3,4	U158	A
Benzenamine, 2-methyl-, hydrochloride	636215	o-Toluidine hydrochloride	1*	4	U222	B
Benzenamine, 2-methyl-5-nitro-	99558	5-Nitro-o-toluidine	1*	4	U181	B
Benzenamine, 4-nitro-	100016	p-Nitroaniline	1*	4	P077	D
Benzene	71432		1000	1,2,3,4	U109	A
Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester	510156	Chlorobenzilate	1*	3,4	U038	A
Benzene, 1-bromo-4-phenoxy-	101553	4-Bromophenyl phenyl ether	1*	2,4	U030	B
Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-	305033	Chlorambucil	1*	4	U035	A
Benzene, chloro-	108907	Chlorobenzene	100	1,2,3,4	U037	B
Benzene, (chloromethyl)-	100447	Benzyl chloride	100	1,3,4	P028	B
Benzenediamine, ar-methyl	95807	Toluenediamine	1*	3,4	U221	A
	496720	2,4-Toluene diamine				
	823405					
	25376458					
1,2-Benzenedicarboxylic acid, dibutyl ester	84742	n-Butyl phthalate	100	1,2,3,4	U069	A
		Dibutyl phthalate				
		Di-n-butyl phthalate				
1,2-Benzenedicarboxylic acid, dimethyl ester	131113	Dimethyl phthalate	1*	2,3,4	U102	D
1,2-Benzenedicarboxylic acid, dioctyl ester	117840	Di-n-octyl phthalate	1*	2,4	U107	D
1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	117817	Bis(2-ethylhexyl) phthalate	1*	2,3,4	U028	B
		DEHP				
		Diethylhexyl phthalate				
1,2-Benzenedicarboxylic acid, dibutyl ester	84742	Di-n-butyl phthalate	100	1,2,4	U069	A
		Dibutyl phthalate				
		n-Butyl phthalate				
1,2-Benzenedicarboxylic acid, diethyl ester	84662	Diethyl phthalate	1*	2,4	U088	C
1,2-Benzenedicarboxylic acid, dimethyl ester	131113	Dimethyl phthalate	1*	2,4	U102	D
Benzene, 1,2-dichloro-	95501	o-Dichlorobenzene	100	1,2,4	U070	B
		1,2-Dichlorobenzene				
Benzene, 1,3-dichloro-	541731	m-Dichlorobenzene	1*	2,4	U071	B
		1,3-Dichlorobenzene				
Benzene, 1,4-dichloro-	106467	p-Dichlorobenzene	100	1,2,3,4	U072	B
		1,4-Dichlorobenzene				
Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-	72548	DDD	1	1,2,4	U060	X
		TDE				
		4,4'-DDD				

+Benzene, dichloromethyl- (5000 :2270)	98873	Benzal chloride	1*	4	U017	D
+ Benzene, 1,3-diisocyanatomethyl- (100 :45.4)	91087	Toluene diisocyanate	1*	3,4	U223	B
	584849	2,4-Toluene diisocyanate				
	26471625					
+ Benzene, dimethyl- (100 :45.4)	1330207	Xylene, Xylene (mixed),	1000	1,3,4	U239	B
		Xylenes (isomers				
		and mixture)				
+ Benzene, m-dimethyl- (1000 :454)	108383	m-Xylene	1*	3		C
+ Benzene, o-dimethyl- (1000 :454)	95476	o-Xylene	1*	3		C
+ Benzene, p-dimethyl- (100 :45.4)	106423	p-Xylene	1*	3		B
+1,3-Benzenediol (5000 :2270)	108463	Resorcinol	1000	1,4	U201	D
+1,2-Benzenediol,4-[1-hydroxy-2- (1000 :454)	51434	Epinephrine	1*	4	P042	C
+ (methylamino)ethyl]-						
+Benzeneethanamine, alpha,alpha- (5000 :2270)	122098	alpha,alpha-Dimethylphenethylamine	1*	4	P046	D
+ dimethyl-						
+ Benzene, hexachloro- (10 :4.54)	118741	Hexachlorobenzene	1*	2,3,4	U127	A
+Benzene, hexahydro- (1000 :454)	110827	Cyclohexane	1000	1,4	U056	C
+ Benzene, hydroxy- (1000 :454)	108952	Phenol	1000	1,2,3,4	U188	C
+ Benzene, methyl- (1000 :454)	108883	Toluene	1000	1,2,3,4	U220	C
+Benzene, 1-methyl-2,3-dinitro- (100 :45.4)	606202	2,6-Dinitrotoluene	1000	1,2,4	U106	B
+ Benzene, 1-methyl-2,4-dinitro- (10 :4.54)	121142	2,4-Dinitrotoluene	1000	1,2,3,4	U105	A
+ Benzene, (1-methylethyl)- (5000 :2270)	98828	Cumene	1*	3,4	U055	D
+ Benzene, nitro- (1000 :454)	98953	Nitrobenzene	1000	1,2,3,4	U169	C
+Benzene, pentachloro- (10 :4.54)	608935	Pentachlorobenzene	1*	4	U183	A
+ Benzene, pentachloronitro- (100 :45.4)	82688	PCNB	1*	3,4	U185	B
		Pentachloronitrobenzene				
		Quintobenzene				
+Benzenesulfonic acid chloride (100 :45.4)	98099	Benzenesulfonyl chloride	1*	4	U020	B
+Benzenesulfonyl chloride (100 :45.4)	98099	Benzenesulfonic acid chloride	1*	4	U020	B
+Benzene, 1,2,4,5-tetrachloro- (5000 :2270)	95943	1,2,4,5-Tetrachlorobenzene	1*	4	U207	D
+Benzenethiol (100 :45.4)	108985	Thiophenol	1*	4	P014	B
+Benzene, 1,1'-(2,2,2-tri- (1 :0.454)	50293	DDT	1	1,2,4	U061	X
+ chloroethylidene)bis(4-chloro-		4,4 DDT				
+ Benzene, 1,1'-(2,2,2- (1 :0.454)	72435	Methoxychlor	1	1,3,4	U247	X
+ trichloroethylidene)						
+ bis(4-methoxy-						
+ Benzene, (trichloromethyl)- (10 :4.54)	98077	Benzotrichloride	1*	3,4	U023	A
+Benzene, 1,3,5-trinitro- (10 :4.54)	99354	1,3,5-Trinitrobenzene	1*	4	U234	A
+ Benzidine (1 :0.454)	92875	[1,1'-Biphenyl]-4,4'-diamine	1*	2,3,4	U021	X
+1,2-Benzisothiazol-3(2H)-one, 1,1- (100 :45.4)	81072	Saccharin and salts	1*	4	U202	B
+ dioxide						
+Benzo[a]anthracene (10 :4.54)	56553	Benz[a]anthracene	1*	2,4	U018	A
		1,2-Benzanthracene				
+1,3-Benzodioxol-4-ol, 2,2-dimethyl- (8 :8)	22961826		1*	4	U364	
+ -, (Bendiocarb phenol)						
+1,3-Benzodioxol-4-ol, 2,2-dimethyl- (8 :8)	22781233		1*	4	U278	
+ -, methyl carbamate (Bendiocarb)						
+Benzo[b]fluoranthene (1 :0.454)	205992		1*	2		X
+Benzo[k]fluoranthene (5000 :2270)	207089		1*	2		D
+Benzo[j,k]fluorene (100 :45.4)	206440	Fluoranthene	1*	2,4	U120	B
+7-Benzofuranol, 2,3-dihydro-2,2- (8 :8)	1563388		1*	4	U367	
+ dimethyl-, (Carbofuran phenol)						
+1,3-Benzodioxole, 5-(1-propenyl)- (100 :45.4)	120581	Isosafrole	1*	4	U141	B
+1,3-Benzodioxole,5-(2-propenyl)- (100 :45.4)	94597	Safrole	1*	4	U203	B
+1,3-Benzodioxole, 5-propyl- (10 :4.54)	94586	Dihydrosafrole	1*	4	U090	A
+Benzoic acid (5000 :2270)	65850		5000	1		D
+ Benzoic acid, 2-hydroxy-, compd. (8 :8)	57647		1*	4	P188	
+ with (3aS-cis)-1,2,3,3a,8,8a-						
+ hexahydro-1,3a,8-trimethylpyrrolo						
+ [2,3-b]indol-5-yl methylcarbamate						

+ ester (1:1) (Physostigmine salicylate)						
+Benzonitrile 5000 (2270)	100470		1000	1		D
+Benzo (rst)pentaphene 10 (4.54)	189559	Dibenz[a,i]pyrene	1*	4	U064	A
+Benzo(ghi)perylene 5000 (2270)	191242		1*	2		D
+2H-1-Benzopyran-2-one, 4-hydroxy-3 100 (45.4)	81812	Warfarin, & salts, when present at concentrations greater than 0.3%	1*	4	P001	B
+ -(3-oxo-1-phenyl-butyl)-, & salts, when present at concentrations greater than 0.3%						
+Benzo[a]pyrene 1 (0.454)	50328	3,4-Benzopyrene	1*	2,4	U022	X
+3,4-Benzopyrene 1 (0.454)	50328	Benzo[a]pyrene	1*	2,4	U022	X
+ p-Benzoquinone 10 (4.54)	106514	2,5-Cyclohexadiene-1,4-dione, Quinone	1*	3,4	U197	A
+ Benzotrichloride 10 (4.54)	98077	Benzene, trichloromethyl-	1*	3,4	U023	A
+Benzoyl chloride 1000 (454)	98884		1000	1		C
+1,2-Benzphenanthrene 100 (45.4)	218019	Chrysene	1*	2,4	U050	B
+ Benzyl chloride 100 (45.4)	100447	Benzene, chloromethyl	100	1,3,4	P028	B
+ BERYLLIUM AND COMPOUNDS **	N.A.	Beryllium Compounds	1*	2,3		
+ Beryllium Compounds **	N.A.	BERYLLIUM AND COMPOUNDS	1*	2,3		
+Beryllium chloride 1 (0.454)	7787475		5000	1		X
+ Beryllium powder ** 10 (4.54)	7440417	Beryllium **	1*	2,3,4	P015	A
+Beryllium fluoride 1 (0.454)	7787497		5000	1		X
+Beryllium nitrate 1 (0.454)	13597994		5000	1		X
+	7787555					
+alpha-BHC 10 (4.54)	319846		1*	2		A
+beta-BHC 1 (0.454)	319857		1*	2		X
+delta-BHC 1 (0.454)	319868		1*	2		X
+ GAMMA-BHC 1 (0.454)	8899	Cyclohexane, 1,2,3,4,5,6-hexa chloro- (1a, 2a,3a,4a,5a,6a)- Hexachlorocyclohexane (gamma isomer) Lindane	1	1,2,3,4	U129	X
+2,2'-Bioxirane 10 (4.54)	1464535	1,2,3,4-Diepoxybutane	1*	4	U085	A
+ Biphenyl 100 (45.4)	92524		1*	3		B
+(1,1'-Biphenyl)-4,4'diamine 1 (0.454)	92875	Benzidine	1*	2,4	U021	X
+(1,1'-Biphenyl]-4,4'diamine,3,3' 1 (0.454)	91941	3,3'-Dichlorobenzidine	1*	2,4	U073	X
+ dichloro-						
+(1,1'-Biphenyl]-4,4'diamine,3,3' 100 (45.4)	119904	3,3'-Dimethoxybenzidine	1*	4	U091	B
+ dimethoxy-						
+(1,1'-Biphenyl]-4,4'-diamine,3,3'- 10 (4.54)	119937	3,3'-Dimethylbenzidine	1*	4	U095	A
+ dimethyl-						
+Bis (2-chloroethyl) ether 10 (4.54)	111444	Dichloroethyl ether, Ethane,1,1'-oxybis[2-chloro-	1*	2,4	U025	A
+Bis(2-chloroethoxy) methane 1000 (454)	111911	Dichloromethoxy ethane, Ethane, 1,1'-[methylenebis(oxy)] bis(2-chloro-	1*	2,4	U024	C
+ Bis(dimethylthiocarbamoyl) sulfide (Tetramethylthiuram monosulfide)	97745		1*	4	U401	
+Bis (2-ethylhexyl)phthalate 100 (45.4)	117817	Diethylhexyl phthalate, 1,2-Benzenedicarboxylic acid, [bis (2-ethylhexyl)] ester	1*	2,4	U028	B
+Bromoacetone 1000 (454)	598312	2-Propanone, 1-bromo-	1*	4	P017	C
+Bromoform 100 (45.4)	75252	Methane, tribromo-	1*	2,4	U225	B
+4-Bromophenyl phenyl ether 100 (45.4)	101553	Benzene, 1-bromo-4-phenoxy-	1*	2,4	U030	B
+Brucine 100 (45.4)	357573	Strychnidin-10-one, 2,3-dimethoxy-	1*	4	P018	B
+ 1,3-Butadiene 10 (4.54)	106990		1*	3		A
+1,3-Butadiene, 1,1,2,3,4,4- 1 (0.454)	87683	Hexachlorobutadiene	1*	2,4	U128	X
+ hexachloro-						
+1-Butanamine, N-butyl-N-nitroso- 10 (4.54)	924163	N-Nitrosodi-n-butylamine	1*	4	U172	A
+1-Butanol 5000 (2270)	71363	n-Butyl alcohol	1*	4	U031	D

2-Butanone	78933	MEK	1*	3.4	U159	D
5000 (2270)		Methyl ethyl ketone				
2-Butanone peroxide	1338234	Methyl ethyl ketone peroxide	1*	4	U160	A
10 (4.54)						
2-Butanone, 3,3-dimethyl-1-	39196184	Thiofanox	1*	4	P045	B
100 (45.4)						
(methylthio)-, O[(methylamino)						
carbonyl] oxime						
2-Butenal	123739	Crotonaldehyde	100	1,4	U053	B
100 (45.4)	4170303					
2-Butene, 1,4-dichloro-	764410	1,4-Dichloro-2-butene	1*	4	U074	X
1 (0.454)						
2-Butenoic acid, 2-methyl-, 7[[2,3	303344	Lasiocarpine	1*	4	U143	A
10 (4.54)						
-dihydroxy-2-(1-methoxyethyl)-3-						
methyl-1-oxobutoxy]methyl]-2,3,5,						
7a-tetrahydro-1H-pyrrolizin-1-yl						
ester, [1S-[1alpha(Z),7(2S*,3R*)						
7aalpha]]-						
Butyl acetate	123864		5000	1		D
5000 (2270)						
iso-Butyl acetate	110190					
sec-Butyl acetate	105464					
tert-Butyl acetate	540885					
n-Butyl alcohol	71363	1-Butanol	1*	4	U031	D
5000 (2270)						
Butylamine	109739		1000	1		C
1000 (454)						
iso-Butylamine	78819					
sec-Butylamine	513495					
	13952846					
tert-Butylamine	75649					
Butyl benzyl phthalate	85687		1*	2		B
100 (45.4)						
n-Butyl phthalate	84742	1,2-Benzenedicarboxylic acid,	100	1,2,3,4	U069	A
10 (4.54)		dibutyl ester				
		Dibutyl phthalate				
		Di-n-butyl phthalate				
Butyric acid	107926		5000	1		D
5000 (2270)						
iso-Butyric acid	79312					
Cacodylic acid	75605	Arsinic acid, dimethyl-	1*	4	U136	X
1 (0.454)						
Cadmium **	7440439		1*	2		A
10 (4.54)			100	1		A
Cadmium acetate	543908					
10 (4.54)						
CADMIUM AND COMPOUND	N.A.	Cadmium Compounds	1*	2,3		
**						
Cadmium Compounds	N.A.	CADMIUM AND COMPOUND [S]	1*	2,3		
**						
Cadmium bromide	7789426		100	1		A
10 (4.54)						
Cadmium chloride	10108642		100	1		A
10 (4.54)						
Calcium arsenate	7778441		1000	1		X
1 (0.454)						
Calcium arsenite	52740166		1000	1		X
1 (0.454)						
Calcium carbide	75207		5000	1		A
10 (4.54)						
Calcium chromate	13765190	Chromic acid H2CrO4, calcium salt	1000	1,4	U032	A
10 (4.54)						
Calcium cyanamide	156627		1*	3		C
1000 (454)						
Calcium cyanide	592018	Calcium cyanide Ca(CN)2	10	1,4	P021	A
10 (4.54)						
Calcium cyanide Ca(CN)2	592018	Calcium cyanide	10	1,4	P021	A
10 (4.54)						
Calcium dodecylbenzenesulfonate	26264062		1000	1		C
1000 (454)						
Calcium hypochlorite	7778543		100	1		A
10 (4.54)						
Camphene, octachloro-	8001352	Chlorinated camphene	1	1,2,3,4	P123	X
1 (0.454)		Toxaphene				
Caprolactam	105602		1*	3		D
5000 (2270)						
Captan	133062		10	1,3		A
10 (4.54)						
Carbamic acid, butyl-, 3-iodo-2-	55406536		1*	4	U375	
propynyl ester (3-iodo-2-propynyl						
n-butylcarbamate)						
Carbamic acid, [1-[(butylamino)	17804352		1*	4	U271	
carbonyl]-1H-benzimidazol-2-yl,						
methyl ester (Benomyl)						
Carbamic acid, 1H-benzimidazol-2-	10605217		1*	4	U372	
yl, methyl ester (Carbendazim)						

Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester (Barban)	101279			1*	4	U280	
Carbamic acid, [(dibutylamino)thio]methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester (Carbosulfan)	55285148			1*	4	P189	
Carbamic acid, dimethyl-, 1-[(dimethylamino)carbonyl]-5-methyl-1H-pyrazol-3-yl ester (Dimetilan)	644644			1*	4	P191	
Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester (Isolan)	119380			1*	4	P192	
Carbamic acid, ethyl ester (NCI-C04954)	51796	Ethyl carbamate; Urethane		1*	3 4	U238	B
Carbamic acid, methylnitroso-, ethyl ester (NCI-C04454)	615532	N-Nitroso-N-methylurethane		1*	4	U178	X
Carbamic acid, methyl-, 3-methylphenyl ester (Metolcarb)	1129415			1*	4	P190	
Carbamic acid, [1,2-phenylenebis(iminocarbonothioyl)]bis-, dimethyl ester (Thiophanate-methyl)	23564058			1*	4	U409	
Carbamic acid, phenyl-, 1-methylethyl ester (Propham)	122429			1*	4	U373	
Carbamic chloride, dimethyl- (NCI-C04454)	79447	Dimethylcarbamoyl chloride		1*	3 4	U097	X
Carbamodithioic acid, dibutyl-, sodium salt (Sodium dibutyldithiocarbamate)	136301			1*	4	U379	
Carbamodithioic acid, diethyl-, 2-chloro-2-propenyl ester (Sulfallate)	95067			1*	4	U277	
Carbamodithioic acid, diethyl-, sodium salt (Sodium diethyldithiocarbamate)	148185			1*	4	U381	
Carbamodithioic acid, dimethyl-, potassium salt (Potassium dimethyldithiocarbamate)	128030			1*	4	U383	
Carbamodithioic acid, dimethyl-, sodium salt (Sodium dimethyldithiocarbamate)	128041			1*	4	U382	
Carbamodithioic acid, dimethyl-, tetraanhydrosulfide with orthothioselenious acid (Selenium tetrakis(dimethyldithiocarbamate))	144343			1*	4	U376	
Carbamodithioic acid, 1,2-ethanediylbis-, salts & esters (NCI-C00-2270)	111546	Ethylenebisdithiocarbamic acid; salts & esters		1*	4	U114	D
Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester (NCI-C00-45 4)	2303164	Diallate		1*	4	U062	B
Carbamodithioic acid, (hydroxymethyl)methyl-, monopotassium salt (Potassium n-hydroxymethyl-n-methyldithiocarbamate)	51026289			1*	4	U378	
Carbamodithioic acid, methyl-, monopotassium salt (Potassium n-methyldithiocarbamate)	137417			1*	4	U377	
Carbamodithioic acid, methyl-,	137428			1*	4	U384	

monosodium salt (Metam Sodium)						
Carbamothioic acid, bis(2-methylpropyl)-, S-ethyl ester (Butylate)	2008415		1*	4	U392	
Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester (Triallate)	2303175		1*	4	U389	
Carbamothioic acid, butylethyl-, S-propyl ester (Pebulate)	1114712		1*	4	U391	
Carbamothioic acid, cyclohexylethyl-, S-ethyl ester (Cycloate)	1134232		1*	4	U386	
Carbamothioic acid, dipropyl-, S-ethyl ester (EPTC)	759944		1*	4	U390	
Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester (Prosulfocarb)	52888809		1*	4	U387	
Carbamothioic acid, dipropyl-, S-propyl ester (Vernolate)	1929777		1*	4	U385	
Carbaryl (100, 45.4)	63252		100	1,3		B
Carbofuran (10, 4.54)	1563662		10	1		A
Carbon disulfide (100, 45.4)	75150		5000	1,2,3,4	P022	B
Carbon oxyfluoride (1000, 454)	353504	Carbonic difluoride	1*	4	U033	C
Carbon tetrachloride (10, 4.54)	56235	Methane, tetrachloro-	5000	1,2,4	U211	A
Carbonic acid, dithallium(1+) salt (100, 45.4)	6533739	Thallium(I) carbonate	1*	4	U215	B
Carbonic dichloride (10, 4.54)	75445	Phosgene	5000	1,3,4	P095	A
Carbonic difluoride (1000, 454)	353504	Carbon oxyfluoride	1*	4	U033	C
Carbon tetrachloride (10, 4.54)	56235	Methane, tetrachloro-	5000	1,2,3,4	U211	A
Carbonochloridic acid, methyl ester (1000, 454)	79221	Methyl chlorocarbonate Methyl chloroformate	1*	4	U156	C
Carbonyl sulfide (100, 45.4)	463581		1*	1		B
Catechol (100, 45.4)	120809		1*	3		B
Chloral (5000, 2270)	75876	Acetaldehyde, trichloro-	1*	4	U034	D
Chloramben (100, 45.4)	133904		1*	3		B
Chlorambucil (10, 4.54)	305033	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-	1*	4	U035	A
Chlordane (1, 0.454)	57749	Chlordane, alpha & gamma isomers Chlordane, technical 4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	1	1,2,4	U036	X
Chlordane, alpha & gamma isomers (1, 0.454)	57749	Chlordane CHLORDANE (TECHNICAL MIXTURE AND METABOLITES) 4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	1	1,2,3,4	U036	X
CHLORDANE (TECHNICAL MIXTURE AND METABOLITES) (1, 0.454)	57749	Chlordane, alpha & gamma isomers Chlordane, alpha & gamma isomers 4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	1	1,2,3,4	U036	X
Chlordane, technical (1, 0.454)	57749	Chlordane Chlordane, alpha & gamma isomers	1	1,2,4	U036	X

		4,7-Methano-1H-indene, 1,2,4,5,6,7,					
		8,8-octachloro-2,3,3a,4,7,7a-					
		hexahydro-					
CHLORINATED BENZENES	N.A.		1*	2			
Chlorinated camphene 1 (0.454)	8001352	Camphene, octachloro-	1	1,2,3,4	P123	X	
		Toxaphene					
CHLORINATED ETHANES	N.A.		1*	2			
CHLORINATED NAPHTHALENE	N.A.		1*	2			
CHLORINATED PHENOLS	N.A.		1*	2			
Chlorine 10 (4.54)	7782505		10	1,3		A	
Chlornaphazine 100 (45.4)	494031	Naphthalenamine, N,N'-bis(2-	1*	4	U026	B	
		chloroethyl)-					
Chloroacetaldehyde 1000 (454)	107200	Acetaldehyde, chloro-	1*	4	P023	C	
Chloroacetic acid 100 (45.4)	79118		1*	3		B	
2-Chloroacetophenone 100 (45.4)	532274		1*	3		B	
CHLOROALKYL ETHERS	N.A.		1*	2			
p-Chloroaniline 1000 (454)	106478	Benzenamine, 4-chloro-	1*	4	P024	C	
Chlorobenzene 100 (45.4)	108907	Benzene, chloro-	100	1,3,4	U037	B	
Chlorobenzilate 10 (4.54)	510156	Benzeneacetic acid, 4	1*	3,4	U038	A	
		-chloro-a-(4-chlorophenyl)-a-					
		hydroxy-, ethyl ester					
4-Chloro-m-cresol 5000 (2270)	59507	p-Chloro-m-cresol	1*	2,4	U039	D	
		Phenol, 4-chloro-3-methyl-					
p-Chloro-m-cresol 5000 (2270)	59507	Phenol, 4-chloro-3-methyl-	1*	2,4	U039	D	
		4-Chloro-m-cresol					
Chlorodibromomethane 100 (45.4)	124481		1*	2		B	
1-Chloro-2,3-epoxypropane 100 (45.4)	106898	Epichlorohydrin	1000	1,3,4	U041	B	
		Oxirane,					
		(chloromethyl)-					
Chloroethane 100 (45.4)	75003	Ethyl chloride	1*	2,3		B	
2-Chloroethyl vinyl ether 1000 (454)	110758	Ethene, 2-chloroethoxy-	1*	2,4	U042	C	
Chloroform 10 (4.54)	67663	Methane, trichloro-	5000	1,2,3,4	U044	A	
Chloromethane 100 (45.4)	74873	Methane, chloro-	1*	2,3,4	U045	B	
		Methyl chloride					
Chloromethyl methyl ether 10 (4.54)	107302	Methane, chloromethoxy-	1*	3,4	U046	A	
beta-Chloronaphthalene 5000 (2270)	91587	Naphthalene, 2-chloro-	1*	2,4	U047	D	
		2-Chloronaphthalene					
2-Chloronaphthalene 5000 (2270)	91587	beta-Chloronaphthalene	1*	2,4	U047	D	
		Naphthalene, 2-chloro-					
2-Chlorophenol 100 (45.4)	95578	o-Chlorophenol	1*	2,4	U048	B	
		Phenol, 2-chloro-					
o-Chlorophenol 100 (45.4)	95578	Phenol, 2-chloro-	1*	2,4	U048	B	
		2-Chlorophenol					
4-Chlorophenyl phenyl ether 5000 (2270)	7005723		1*	2		D	
1-(o-Chlorophenyl)thiourea 100 (45.4)	5344821	Thiourea, (2-chlorophenyl)-	1*	4	P026	B	
Chloroprene 100 (45.4)	126998		1*	3		B	
3-Chloropropionitrile 1000 (454)	542767	Propanenitrile, 3-chloro-	1*	4	P027	C	
Chlorosulfonic acid 1000 (454)	7790945		1000	1		C	
4-Chloro-o-toluidine, 100 (45.4)	3165933	Benzenamine, 4-chloro-2-methyl-,	1*	4	U049	B	
hydrochloride.		hydrochloride					
Chlorpyrifos 1 (0.454)	2921882		1	1		X	
Chromic acetate 1000 (454)	1066304		1000	1		C	
Chromic acid 10 (4.54)	11115745		1000	1		A	
	7738945						
Chromic acid H2CrO4, calcium salt 10 (4.54)	13765190	Calcium chromate	1000	1,4	U032	A	
Chromic sulfate 1000 (454)	10101538		1000	1		C	
Chromium ** 5000 (2270)	7440473		1*	2		D	
CHROMIUM AND COMPOUNDS (**)	N.A.	Chromium Compounds	1*	2,3			
Chromium Compounds (**)	N.A.	CHROMIUM AND COMPOUNDS	1*	2,3			
Chrysene 100 (45.4)	218019	1,2-Benzphenanthrene	1*	2,4	U050	B	

Cobalt compounds (**)	N.A.		1*	3			
Cobaltous bromide 1000 (454)	7789437		1000	1			C
Cobaltous formate 1000 (454)	544183		1000	1			C
Cobaltous sulfamate 1000 (454)	14017415		1000	1			C
Coke Oven Emissions 1 (0.454)	N.A.		1*	3			X
Copper cyanide CuCN 10 (4.54)	544923	Copper cyanide	1*	4	P029		A
Copper ** 5000 (2270)	7440508		1*	2			D
COPPER AND COMPOUNDS **	N.A.		1*	2			
Copper cyanide 10 (4.54)	544923	Copper cyanide CuCN	1*	4	P029		A
Copper, bis [dimethylcarbamodithioato-S,S']- (Cooper dimethyldithiocarbamate)	137291		1*	4	U393		
Coumaphos 10 (4.54)	56724		10	1			A
Creosote 1 (0.454)	8001589		1*	4	U051		X
Cresols (isomers and mixture) 100 (45.4)	1319773	Cresylic acid (isomers and mixture) Phenol, methyl	1000	1,3,4	U052		B
m-Cresol 100 (45.4)	108394	m-Cresylic acid	1*	3			B
o-Cresol 100 (45.4)	95487	o-Cresylic acid	1*	3			B
p-Cresol 100 (45.4)	106445	p-Cresylic acid	1*	3			B
Cresylic acid isomers and mixture 100 (45.4)	1319773	Cresols (isomers and mixture) Phenol, methyl	1000	1,3,4	U052		B
m-Cresylic acid 100 (45.4)	108394	m-Cresol	1*	3			B
o-Cresylic acid 100 (45.4)	95487	o-Cresol	1*	3			B
p-Cresylic acid 100 (45.4)	106445	p-Cresol	1*	3			B
Crotonaldehyde 100 (45.4)	123739	2-Butenal	100	1,4	U053		B
	4170303						
Cumene 5000 (2270)	98828	Benzene, (1-methylethyl)-	1*	3,4	U055		D
Cupric acetate 100 (45.4)	142712		100	1			B
Cupric acetoarsenite 1 (0.454)	12002038		100	1			X
Cupric chloride 10 (4.54)	7447394		10	1			A
Cupric nitrate 100 (45.4)	3251238		100	1			B
Cupric oxalate 100 (45.4)	5893663		100	1			B
Cupric sulfate 10 (4.54)	7758987		10	1			A
Cupric sulfate, ammoniated 100 (45.4)	10380297		100	1			B
Cupric tartrate 100 (45.4)	815827		100	1			B
Cyanide Compounds (**)	N.A.	CYANIDES	1*	2,3			
CYANIDES (**)	N.A.	Cyanide Compounds	1*	2,3			
Cyanides (soluble salts and complexes) not otherwise specified	57125		1*	4	P030		A
Cyanogen 100 (45.4)	460195	Ethanedinitrile	1*	4	P031		B
Cyanogen bromide 1000 (454)	506683	Cyanogen bromide (CN)Br	1*	4	U246		C
Cyanogen bromide (CN)Br 1000 (454)	506683	Cyanogen bromide	1*	4	U246		C
Cyanogen chloride 10 (4.54)	506774	Cyanogen chloride (CN)Cl	10	1,4	P033		A
Cyanogen chloride (CN)Cl 10 (4.54)	506774	Cyanogen chloride	10	1,4	P033		A
2,5-Cyclohexadiene-1,4-dione 10 (4.54)	106514	p-Benzoquinone	1*	3,4	U197		A
		Quinone					
Cyclohexane 1000 (454)	110827	Benzene, hexahydro-	1000	1,4	U056		C
Cyclohexane 1 (0.454) [1,2,3,4,5,6-hexachloro-, (1a,2a,3a,4a,5a,6a)-]	58899	á-BHC	1	1,2,3,4	U129		X
		Hexachlorocyclohexane (gamma isomer)					
		Lindane					
		Lindane (all isomers)					
Cyclohexanone 5000 (2270)	108941		1*	4	U057		D
2-Cyclohexyl-4,6-dinitrophenol 100 (45.4)	131895	Phenol, 2-cyclohexyl-4,6-dinitro-	1*	4	P034		B
1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro- 10 (4.54)	77474	Hexachlorocyclopentadiene	1	1,2,3,4	U130		A
Cyclophosphamide 10 (4.54)	50180	2H-1,3,2-Oxazaphosphorin-2-amine,	1*	4	U058		A

		N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide				
2,4-D Acid 100 (45.4)	94757	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters	100	1,3,4	U240	B
2,4-D Ester 100 (45.4)	94111		100	1		B
	94791					
	94804					
	1320189					
	1928387					
	1928616					
	1929733					
	2971382					
	25168267					
	53467111					
2,4-D salts and esters 100 (45.4)	94757	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters 2,4-D Acid	100	1,3,4	U240	B
Daunomycin 10 (4.54)	20830813	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexo-pyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-	1*	4	U059	A
DDD 1 (0.454)	72548	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro- TDE 4,4'-DDD	1	1,2,4	U060	X
4,4'-DDD 1 (0.454)	72548	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro- DDD TDE	1	1,2,4	U060	X
DDE (b) 1 (0.454)	72559	4,4'-DDE	1*	2,3		X
4,4'-DDE 1 (0.454)	72559	DDE	1*	2,3		X
DDT 1 (0.454)	50293	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- 4,4'-DDT	1	1,2,4	U061	X
4,4'-DDT 1 (0.454)	50293	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- DDT	1	1,2,4	U061	X
DDT AND METABOLITES	N.A.		1*	2		
DEHP 100 (45.4)	117817	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester Bis(2-ethylhexyl) phthalate Diethylhexyl phthalate	1*	2,3,4	U028	B
Diallate 100 (45.4)	2303164	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester	1*	4	U062	B
Diazinon 1 (0.454)	333415		1	1		X
Diazomethane 100 (45.4)	334883		1*	3		B
Dibenz(a,h)anthracene 1 (0.454)	53703	Dibenzo[a,h]anthracene 1,2:5,6-Dibenzanthracene	1*	2,4	U063	X
1,2:5,6-Dibenzanthracene 1 (0.454)	53703	Dibenz[a,h]anthracene Dibenzo[a,h]anthracene	1*	2,4	U063	X
Dibenzo(a,h)anthracene 1 (0.454)	53703	Dibenz[a,h]anthracene	1*	2,4	U063	X

		1,2:5,6-Dibenzanthracene				
Dibenzofuran 100 (45.4)	132649		1*	3		B
Dibenz[a,i]pyrene 10 (4.54)	189559	Benzo[rst]pentaphene	1*	4	U064	A
1,2-Dibromo-3-chloropropane 1 (0.454)	96128	Propane, 1,2-dibromo-3-chloro-	1*	3,4	U066	X
Dibromoetnane 1 (0.454)	106934	Ethane, 1,2-dibromo-	1000	1,3,4	U067	X
		Ethylene dibromide				
Dibutyl phthalate 10 (4.54)	84742	1,2-Benzenedicarboxylic acid,	100	1,2,3,4	U069	A
		dibutyl ester				
		n-Butyl phthalate				
		Di-n-butyl phthalate				
Di-n-butyl phthalate 10 (4.54)	84742	1,2-Benzenedicarboxylic acid	100	1,2,3,4	U069	A
		dibutyl ester				
		n-Butyl phthalate				
		Dibutyl phthalate				
Dicamba 1000 (454)	1918009		1000	1		C
Dichlobenil 100 (45.4)	1194656		1000	1		B
Dichlone 1 (0.454)	117806		1	1		X
Dichloropenzene 100 (45.4)	25321226		100	1		B
1,2-Dichloropenzene 100 (45.4)	95501	Benzene, 1,2-dichloro- o-	100	1,2,4	U070	B
		Dichlorobenzene				
1,3-Dichloropenzene 100 (45.4)	541731	Benzene, 1,3-dichloro m-	1*	2,4	U071	B
		Dichlorobenzene				
1,4-Dichlorobenzene 100 (45.4)	106467	Benzene, 1,4-dichloro-	100	1,2,3,4	U072	B
		p-Dichlorobenzene				
m-Dichlorobenzene 100 (45.4)	541731	Benzene, 1,3-dichloro 1,3-	1*	2,4	U071	B
		Dichlorobenzene				
o-Dichlorobenzene 100 (45.4)	95501	Benzene, 1,2-dichloro 1,2-	100	1,2,4	U070	B
		Dichlorobenzene				
p-Dichlorobenzene 100 (45.4)	106467	Benzene, 1,4-dichloro-	100	1,2,3,4	U072	B
		1,4-Dichlorobenzene				
DICHLOROBENZIDINE **	N.A.		1*	2		
3,3'- Dichlorobenzidine 1 (0.454)	91941	[1,1'-Biphenyl]-4,4'-	1*	2,3,4	U073	X
		diamine,3,3'- dichloro-				
Dichlorobromomethane 5000 (2270)	75274		1*	2		D
1,4-Dichloro-2-butene 1 (0.454)	764410	2-Butene, 1,4-dichloro-	1*	4	U074	X
Dichlorodifluoromethane 5000 (2270)	75718	Methane, dichlorodifluoro-	1*	4	U075	D
1,1-Dichloroethane 1000 (454)	75343	Ethane, 1,1-dichloro-	1*	2,3,4	U076	C
		Ethylidene dichloride				
1,2-Dichloroethane 100 (45.4)	107062	Ethane, 1,2-dichloro-	5000	2,3,4	U077	B
		Ethylene dichloride				
1,1-Dichloroethylene 100 (45.4)	75354	Ethene, 1,1-dichloro-	5000	2,3,4	U078	B
		Vinylidene chloride				
1,2-Dichloroethylene 1000 (454)	156605	Ethene, 1,2-dichloro- (E)	1*	2,4	U079	C
Dichloroethyl ether 10 (4.54)	111444	Bis(2-chloroethyl) ether	1*	2,3,4	U025	A
		Ethane, 1,1'-oxybis(2-chloro-				
Dichloroisopropyl ether 1000 (454)	108601	Propane, 2,2'-oxybis(2-chloro-	1*	2,4	U027	C
Dichloromethoxy ethane 1000 (454)	111911	Bis(2-chloroethoxy) methane	1*	2,4	U024	C
		Ethane, 1,1'-[methylenebis(oxy)]				
		bis(2-chloro-				
Dichloromethane 1000 (454)	75092	Methane, dichoro-	1*	2,3,4	U080	C
		Methylene chloride				
Dichloromethyl ether 10 (4.54)	542881	Bis(chloromethyl) ether	1*	3,4	P016	A
		Methane, oxybis (chloro-				
2,4-Dichlorophenol 100 (45.4)	120832	Phenol, 2,4-dichloro-	1*	2,4	U081	B
2,6-Dichlorophenol 100 (45.4)	87650	Phenol, 2,6-dichloro-	1*	4	U082	B
Dichlorophenylarsine 1 (0.454)	696286	Arsonous dichloride, phenyl-	1*	4	P036	X
Dichloropropane 1000 (454)	26638197		5000	1		C
1,1-Dichloropropane	78999					
1,2-Dichloropropane 1000 (454)	78875	Propane, 1,2-dichloro-	5000	1,2,3,4	U083	C
		Propylene dichloride				
1,3-Dichloropropane	142289					

Dichloropropane-Dichloropropene (mixture) 100 (45.4)	8003198		5000	1		B
Dichloropropene 100 (45.4)	26952238		5000	1		B
2,3-Dichloropropene	78886					
1,3-Dichloropropene 100 (45.4)	542756	1-Propene, 1,3-dichloro-	5000	1,2,3,4	U084	B
2,2-Dichloropropionic acid 5000 (2270)	75990		5000	1		D
Dichlorvos 10 (4.54)	62737		10	1,3		A
Dicofol 10 (4.54)	115322		5000	1		A
Dieldrin 1 (0.454)	60571	2,7:3,6-Dimethanonaphth[2,3-b] oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta, 6beta, 6aalpha,7beta, 7aalpha)-	1	1,2,4	P037	X
1,2,3,4-Diepoxybutane 10 (4.54)	1464535	2,2'-Bioxirane	1*	4	U085	A
Diethanolamine 100 (45.4)	111422		1*	3		B
Diethylamine 100 (454.4)	109897		1000	1		B
N,N-Diethylaniline 1000 (454)	91667		1*	3		C
Diethylarsine 1 (0.454)	692422	Arsine, diethyl-	1*	4	P038	X
1,4-Diethyleneoxide 100 (45.4)	123911	1,4-Dioxane	1*	3,4	U108	B
1,4-Diethyleneoxide	123911	1,4-Dioxane 1,4-Diethyleneoxide	1	3,4	U108	B
Diethylhexyl phthalate 100 (45.4)	117817	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester Bis(2-ethylhexyl) phthalate DEHP	1*	2,3,4	U028	B
N,N'-Diethylhydrazine 10 (4.54)	1615801	Hydrazine, 1,2-diethyl-	1*	4	U086	A
O,O-Diethyl S-methyl 5000 (2270) dithiophosphate	3288582	Phosphorodithioic acid, O,O-diethyl S-methyl ester	1*	4	U087	D
Diethyl-p-nitrophenyl phosphate 100 (45.4)	311455	Phosphoric acid, diethyl 4-nitrophenyl ester	1*	4	P041	B
Diethyl phthalate 1000 (454)	84662	1,2-Benzenedicarboxylic acid, diethyl ester	1*	2,4	U088	C
O,O-Diethyl O-pyrazinyl 100 (45.4) phosphorothioate	297972	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	1*	4	P040	B
Diethylstilbestrol 1 (0.454)	56531	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)	1*	4	U089	X
Diethyl sulfate 10 (4.54)	64675		1*	3		A
Dihydrosafrole 10 (4.54)	94586	1,3-Benzodioxole, 5-propyl-	1*	4	U090	A
Diisopropylfluorophosphate 100 (45.4)	55914	Phosphorofluoridic acid, bis(1-methylethyl) ester	1*	4	P043	B
1,4,5,8-Dimethanonaphthalene, 1,2, 3,4,10,10-hexachloro-1,4,4a,5, 8,8a-hexahydro-, (1alpha,4alpha, 4abeta,5alpha,8alpha, 8abeta)- 1 (0.454)	309002	Aldrin	1	1,2,4	P004	X
1,4,5,8-Dimethanonaphthalene, 1,2, 3,4,10,10-hexachloro-1,4,4a,5, 8,8a-hexahydro-, (1alpha,4alpha, 4abeta,5beta,8beta, 8abeta)- 1 (0.454)	465736	Isodrin	1*	4	P060	X
2,7:3,6-Dimethanonaphth[2, 3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta, 2aalpha,3beta,6beta, 6aalpha,7beta,7aalpha)- 1 (0.454)	60571	Dieldrin	1	1,2,4	P037	X
2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3, 4,5,6,9,9-hexachloro-1a,2,2a,3,6, 6a,7,7a-octa-hydro-, (1aalpha, 2beta,2abeta,3alpha,6alpha, 6abeta,7beta,7aalpha)- 1 (0.454)	72208	Endrin Endrin, & metabolites	1	1,2,4	P051	X
Dimethoate 10 (4.54)	60515	Phosphorodithioic acid, O,O-dimethyl S-[2(methylamino)-2-	1*	4	P044	A

		oxoethyl] ester				
3,3'-Dimethoxybenzidine 100 (45.4)	119904	[1,1'-Biphenyl]-4,4'-diamine,3,3'-dimethoxy-	1*	3,4	U091	B
Dimethylamine 1000 (454)	124403	Methanamine, N-methyl-	1000	1,4	U092	C
Dimethyl aminoazobenzene 10 (4.54)	60117	Benzenamine, N,N-dimethyl-4-(phenylazo-); P-Dimethylaminoazobenzene	1*	3,4	U093	A
p-Dimethylaminoazobenzene 10 (4.54)	60117	Benzenamine, N,N-dimethyl-4-(phenylazo-); Dimethylaminoazobenzene	1*	3,4	U093	A
N,N-Dimethylaniline 100 (45.4)	121697		1*	3		B
7,12-Dimethylbenz[a]anthracene 1 (0.454)	57976	Benz[a]anthracene, 7,12-dimethyl-	1*	4	U094	X
3,3'-Dimethylbenzidine 10 (4.54)	119937	[1,1'-Biphenyl]-4,4'-diamine,3,3'-dimethyl-	1*	3,4	U095	A
alpha,alpha-Dimethylbenzylhydroperoxide 10 (4.54)	80159	Hydroperoxide, 1-methyl-1-phenylethyl-	1*	4	U096	A
Dimethylcarbamoyl chloride 1 (0.454)	79447	Carbamic chloride, dimethyl-	1*	3,4	U097	X
Dimethylformamide 100 (45.4)	68122		1*	3		B
1,1-Dimethylhydrazine 10 (4.54)	57147	Hydrazine, 1,1-dimethyl-	1*	3,4	U098	A
1,2-Dimethylhydrazine 1 (0.454)	540738	Hydrazine, 1,2-dimethyl-	1*	4	U099	X
alpha,alpha-Dimethylphenethylamine 5000 (2270)	122098	Benzeneethanamine, alpha,alpha-dimethyl-	1*	4	P046	D
2,4-Dimethylphenol 100 (45.4)	105679	Phenol, 2,4-dimethyl-	1*	2,4	U101	B
Dimethyl phthalate 5000 (2270)	131113	1,2-Benzenedicarboxylic acid, dimethyl ester	1*	2,3,4	U102	D
Dimethyl sulfate 100 (45.4)	77781	Sulfuric acid, dimethyl ester	1*	3,4	U103	B
Dinitrobenzene (mixed) 100 (45.4)	25154545		1000	1		B
m-Dinitrobenzene	99650					
o-Dinitrobenzene	528290					
p-Dinitrobenzene	100254					
4,6-Dinitro-o-cresol and salts 10 (4.54)	534521	Phenol, 2-methyl-4,6-dinitro-; & salts	1*	2,3,4	P047	A
Dinitrophenol 10 (4.54)	25550587		1000	1		A
2,4-Dinitrophenol 10 (4.54)	51285	Phenol, 2,4-dinitro-	1000	1,2,3,4	P048	A
2,5-Dinitrophenol	329715					
2,6-Dinitrophenol	573568					
Dinitrotoluene 10 (4.54)	25321146		1000	1,2		A
3,4-Dinitrotoluene	610399					
2,4-Dinitrotoluene 10 (4.54)	121142	Benzene, 1-methyl-2,4-dinitro-	1000	1,2,3,4	U105	A
2,6-Dinitrotoluene 100 (45.4)	606202	Benzene, 2-methyl-1,3-dinitro-	1000	1,2,4	U106	B
Dinoseb 1000 (454)	88857	Phenol, 2-(1-methylpropyl)-4,6-dinitro	1*	4	P020	C
Di-n-octyl phthalate 5000 (2270)	117840	1,2-Benzenedicarboxylic acid, dioctyl ester	1*	2,4	U107	D
1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O-[(methylamino) carbonyl]oxime (Tirpate)	26419738		1*	4	P185	
1,4-Dioxane 100 (45.4)	123911	1,4-Diethyleneoxide; 1,4-Diethylenedioxide	1*	3,4	U108	B
DIPHENYLHYDRAZINE	N/A		1*	2		
1,2-Diphenylhydrazine 10 (4.54)	122667	Hydrazine, 1,2-diphenyl-	1*	2,3,4	U109	A
Diphosphoramide, octamethyl- 100 (45.4)	152169	Octamethylpyrophosphoramide	1*	4	P085	B
Diphosphoric acid, tetraethyl ester 10 (4.54)	107493	Tetraethyl pyrophosphate;	100	1,4	P111	A
Dipropylamine 5000 (2270)	142847	1-Propanamine, N-propyl-	1*	4	U110	D
Di-n-propylnitrosamine 10 (4.54)	621647	1-Propanamine, N-nitroso-N-propyl-	1*	2,4	U111	A
Diquat 1000 (454)	85007		1000	1		C
	2764729					
Disulfoton 1 (0.454)	298044	Phosphorodithioic acid, o,o-diethyl S-[2-(ethylthio)ethyl]	1	1,4	P039	X

		ester				
Dithiobiuret 100 (45.4)	541537	Thioimidodicarbonic diamide [(H2N) C(S)]2NH	1*	4	P049	B
Diuron 100 (45.4)	330541		100	1		B
Dodecylbenzenesulfonic acid 1000 (454)	27176870		1000	1		C
Endosulfan 1 (0.454)	115297	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide	1	1,2,4	P050	X
alpha - Endosulfan 1 (0.454)	959988		1*	2		X
beta - Endosulfan 1 (0.454)	33213659		1*	2		X
ENDOSULFAN AND METABOLITES **	N.A.		1*	2		
Endosulfan sulfate 1 (0.454)	1031078		1*	2		X
Endothall 1000 (454)	145733	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid	1*	4	P088	C
Endrin 1 (0.454)	72208	Endrin, & metabolites	1	1,2,4	P051	X
		2,7:3,6-Dimethanonaphth[2,3-b] oxirene, 3,4,5,6,9,9 -hexachloro-1a,2,2a,3,6,6a,7,7a-octa-hydro-, (1aalpha, 2beta,2abeta,3alpha,6alpha, 6abeta,7beta, 7aalpha)-				
Endrin aldehyde 1 (0.454)	7421934		1*	2		X
ENDRIN AND METABOLITES **	N.A.		1*	2		
Endrin, & metabolites 1 (0.454)	72208	Endrin	1	1,2,4	P051	X
		2,7:3,6-Dimethanonaphth[2,3-b] oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octa-hydro-, (1aalpha, 2beta,2abeta,3alpha,6alpha, 6abeta,7beta, 7aalpha)-				
Epichlorohydrin 100 (45.4)	106898	1-Chloro-2,3-epoxypropane	1000	1,3,4	U041	B
Epinephrine 1000 (454)	51434	Oxirane, (chloromethyl)- 1,2-Benzenediol,4-[1-hydroxy-2-(methylamino)ethyl]-	1*	4	P042	C
1,2-Epoxybutane 100 (45.4)	106887		1*	3		B
Ethanal 1000 (454)	75070	Acetaldehyde	1000	1,3,4	U001	C
Ethanamine, N-ethyl-N-nitroso- 1 (0.454)	55185	N-Nitrosodiethylamine	1*	4	U174	X
1,2-Ethanediamine, N,N-dimethyl-N' 5000 (2270)	91805	Methapyrilene	1*	4	U155	D
-2-pyridinyl-N'-(2-thienylmethyl)						
-						
Ethane, 1,2-dibromo- 1 (0.454)	106934	Dibromoethane Ethylene dibromide	1000	1,3,4	U067	X
Ethane, 1,1-dichloro- 1000 (454)	75343	1,1-Dichloroethane Ethylidene dichloride	1*	2,3,4	U076	C
Ethane, 1,2-dichloro- 100 (45.4)	107062	1,2-Dichloroethane Ethylene dichloride	5000	2,3,4	U077	B
Ethanedinitrile 100 (45.4)	460195	Cyanogen	1*	4	P031	B
Ethane, hexachloro- 100 (45.4)	67721	Hexachloroethane	1*	2,3,4	U131	B
Ethane, 1,1'-[methylenebis(oxy)]bis[2- 1000 (454)	111911	Bis(2-chloroethoxy) methane Dichloromethoxy ethane	1*	2,4	U024	C
chloro-						
Ethane, 1,1'-oxybis- 100 (45.4)	60297	Ethyl ether	1*	4	U117	B
Ethane, 1,1'-oxybis[2-chloro- 10 (4.54)	111444	Bis (2-chloroethyl) ether Dichloroethyl ether	1*	2,3,4	U025	A
Ethane, pentachloro- 10 (4.54)	76017	Pentachloroethane	1*	4	U184	A
Ethane, 1,1,1,2-tetrachloro- 100 (45.4)	630206	1,1,1,2-Tetrachloroethane	1*	4	U208	B
Ethane, 1,1,2,2-tetrachloro- 100 (45.4)	79345	1,1,2,2-Tetrachloroethane	1*	2,3,4	U209	B
Ethanethioamide 10 (4.54)	62555	Thioacetamide	1*	4	U218	A
Ethane, 1,1,1-trichloro- 1000 (454)	71556	Methyl chloroform 1,1,1-Trichloroethane	1*	2,3,4	U226	C

Ethane, 1,1,2-trichloro- 100 (45.4)	79005	1,1,2-Trichloroethane	1*	2,3,4	U227	B
Ethanimidothioic acid, N-[[(methyl amino)carbonyl]oxy]-, methyl ester.	16752775	Methomyl	1*	4	P066	B
Ethanimidothioic acid, 2-(dimethylamino-N-hydroxy-2-oxo-, methyl ester (A2213).	30558431		1*	4	U394	
Ethanimidothioic acid, 2-(dimethylamino)-N-[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester (Oxamyl)	23135220		1*	4	P194	
Ethanimidothioic acid, N,N'- [thiobis[(methylimino)carbonyloxy]] bis- dimethyl ester (Thiodicarb)	59669260		1*	4	U410	
Ethanol, 2-ethoxy- 1000 (454)	110805	Ethylene glycol monoethyl ether	1*	4	U359	C
Ethanol, 2,2'-(nitrosoimino)bis- 1 (0.454)	1116547	N-Nitrosodiethanolamine	1*	4	U173	X
Ethanol, 2,2'-oxybis-, dicarbamate (Diethylene glycol, dicarbamate)	5952261		1*	4	U395	
Ethanone, 1-phenyl- 5000 (2270)	98862	Acetophenone	1*	3,4	U004	D
Ethene, chloro- 1 (0.454)	75014	Vinyl chloride	1*	2,3,4	U043	X
Ethene, 2-chloroethoxy- 1000 (454)	110758	2-Chloroethyl vinyl ether	1*	2,4	U042	C
Ethene, 1,1-dichloro- 100 (45.4)	75354	1,1-Dichloroethylene	5000	1,2,3,4	U078	B
		Vinylidene chloride				
Ethene, 1,2-dichloro- (E) 1000 (454)	156605	1,2-Dichloroethylene	1*	2,4	U079	C
Ethene, tetrachloro- 100 (45.4)	127184	Perchloroethylene	1*	2,3,4	U210	B
		Tetrachloroethene				
		Tetrachloroethylene				
Ethene, trichloro- 100 (45.4)	79016	Trichloroethene	1000	1,2,3,4	U228	B
		Trichloroethylene				
Ethion 10 (4.54)	563122		10	1		A
Ethyl acetate 5000 (2270)	141786	Acetic acid, ethyl ester	1*	4	U112	D
Ethyl acrylate 1000(454)	140885	2-Propenoic acid, ethyl ester	1*	3,4	U113	C
Ethylbenzene 1000(454)	100414		1000	1,2,3		C
Ethyl carbamate 100(45.4)	51796	Carbamic acid, ethyl est	1*	3,4	U238	B
		Urethane				
Ethyl chloride 100(45.4)	75003	Chloroethane	1*	2,3		B
Ethyl cyanide 10 (4.54)	107120	Propanenitrile	1*	4	P101	A
Ethylenebisdithiocarbamic acid, 5000 (2270) salts & esters.	111546	Carbamodithioic acid, 1,2-ethanediylbis, salts & esters	1*	4	U114	D
Ethylenediamine 5000 (2270)	107153		1000	1		D
Ethylenediamine-tetraacetic acid 5000 (2270) (EDTA)	60004		5000	1		D
Ethylene dibromide 1 (0.454)	106934	Dibromoethane	1000	1,3,4	U067	X
		Ethane, 1,2-dibromo-				
Ethylene dichloride 100(45.4)	107062	1,2-Dichloroethane	5000	2,3,4	U077	B
		Ethane, 1,2-dichloro-				
Ethylene glycol 5000 (2270)	107211		1*	3		D
Ethylene glycol monoethyl ether 1000 (454)	110805	Ethanol, 2-ethoxy-	1*	4	U359	C
Ethylene oxide 10 (4.54)	75218	Oxirane	1*	3,4	U115	A
Ethylenethiourea 10 (4.54)	96457	2-Imidazolidinethione	1*	3,4	U116	A
Ethylenimine 1 (0.454)	151564	Aziridine	1*	3,4	P054	X
Ethyl ether 100 (45.4)	60297	Ethane, 1,1'-oxybis-	1*	4	U117	B
Ethylidene dichloride 1000 (454)	75343	1,1-Dichloroethane	1*	2,3,4	U076	C
		Ethane, 1,1-dichloro-				
Ethyl methacrylate 1000 (454)	97632	2-Propenoic acid, 2-methyl-, ethyl ester	1*	4	U118	C
Ethyl methanesulfonate 1 (0.454)	62500	Methanesulfonic acid, ethyl ester	1*	4	U119	X
Famphur 1000 (454)	52857	Phosphorothioic acid, O,[4-[(dimethylamino) sulfonyl] phenyl] O, O-dimethyl ester	1*	4	P097	C

+Ferric ammonium citrate (1000 (454)	1185575		1000	1		C
+Ferric ammonium oxalate (1000 (454)	2944674		1000	1		C
+	55488874					
+Ferric chloride (1000 (454)	7705080		1000	1		C
+Ferric fluoride (100 (45.4)	7783508		100	1		B
+Ferric nitrate (1000 (454)	10421484		1000	1		C
+Ferric sulfate (1000 (454)	10028225		1000	1		C
+Ferrous ammonium sulfate (1000 (454)	10045893		1000	1		C
+Ferrous chloride (100 (45.4)	7758943		100	1		B
+Ferrous sulfate (1000 (454)	7720787		1000	1		C
+	7782630					
+ Fine mineral fibers (c) (**)	N.A.		1*	3		
+Fluoranthene (100 (45.4)	206440	Benzo[j,k]fluorene	1*	2,4	U120	B
+Fluorene (5000 (2270)	86737		1*	4	P056	A
+Fluorine (10 (4.54)	7782414		1*	4	P057	B
+Fluoroacetamide (100 (45.4)	640197	Acetamide, 2-fluoro-	1*	4	P058	A
+Fluoroacetic acid, sodium salt (10 (4.54)	62748	Acetic acid, fluoro-, sodium salt	1*	4	P058	A
+ Formaldehyde (100 (45.4)	50000		1000	1,3,4	U122	B
+Formic acid (5000 (2270)	64186		5000	1,4	U123	D
+Fulminic acid, mercury(2+) salt (10 (4.54)	628864	Mercury fulminate	1*	4	P065	A
+Fumaric acid (5000 (2270)	110178		5000	1		D
+Furan (100 (45.4)	110009	Furfuran	1*	4	U124	B
+Furan, tetrahydro- (1000 (454)	109999	Tetranydrofuran	1*	4	U213	C
+2-Furancarboxaldehyde (5000 (2270)	98011	Furfural	1000	1,4	U125	D
+ 2,5-Furandione (5000 (2270)	108316	Maleic anhydride	5000	1,3,4	U147	D
+Furfural (5000 (2270)	98011	2-Furancarboxaldehyde	1000	1,4	U125	D
+Furfuran (100 (45.4)	110009	Furan	1*	4	U124	B
+Glucopyranose, 2-deoxy-2-(3-methyl (1 (0.454)	18883664	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)-carbonyl] amino] Streptozotocin	1*	4	U206	X
+ -3-nitrosoureido)-						
+	18883664	Glucopyranose, 2-deoxy-2-(3-methyl -3-nitrosoureido)- Streptozotocin	1*	4	U206	X
+D-Glucose, 2-deoxy-2-[[(1 (0.454)						
+ (methylnitrosoamino)-carbonyl]- amino]-						
+Glycidylaldehyde (10 (4.54)	765344	Oxiranecarboxyaldehyde	1*	4	U126	A
+ Glycol ethers (d) (**)	N.A.		1*	3		
+Guanidine, N-methyl-N'-nitro-N- (10 (4.54)	70257	MNNG	1*	4	U163	A
+ nitroso-						
+Guthion (1 (0.454)	86500		1	1		X
+HALOETHERS (**)	N.A.		1*	2		
+HALOMETHANES (**)	N.A.		1*	2		
+ Heptachlor (1 (0.454)	76448	4,7-Methano-1H-indene, 1,4,5,6,7,8, 8-heptachloro-3a,4,7,7a- tetrahydro-	1	1,2,3,4	P059	X
+HEPTACHLOR AND METABOLITES (**)	N.A.		1*	2		
+Heptachlor epoxide (1 (0.454)	1024573		1*	2		X
+ Hexachlorobenzene (10 (4.54)	118741	Benzene, hexachloro-	1*	2,3,4	U127	A
+ Hexachlorobutadiene (1 (0.454)	87683	1,3-Butadiene, 1,1,2,3,4,4- hexachloro-	1*	2,3,4	U128	X
+HEXACHLOROCYCLOHEXANE (all isomers) (**)	608731		1*	2		
+ Hexachlorocyclohexane (1 (0.454) + gamma isomer)	58899	GAMMA-BHC Cyclohexane, 1,2,3,4,5,6- hexachloro-(1a,2a,3a,4a, 5a,6a)- Lindane Lindane (all isomers)	1	2,3,4	U129	X
+ Hexachlorocyclopentadiene (10 (4.54)	77474	1,3-Cyclopentadiene,1,2,3,4,5,5- hexachloro-	1	1,2,3,4	U130	A
+ Hexachloroethane (100 (45.4)	67721	Ethane, hexachloro-	1*	2,3,4	U131	B
+Hexachlorophene (100 (45.4)	70304	Phenol, 2,2'-methylenebis[3,4,6- trichloro-	1*	4	U132	B
+Hexachloropropene (1000 (454)	1888717	1-Propene, 1,1,2,3,3,3-hexachloro-	1*	4	U243	C

+Hexaethyl tetraphosphate 100 (45.4)	757584	Tetraphosphoric acid, hexaethyl ester	1*	4	P062	B
+ Hexamethylene-1,6- diisocyanate 100 (45.4)	822060		1*	3		B
+ Hexamethylphosphoramide 1 (0.454)	680319		1*	3		X
+ Hexane 5000 (2270)	110543		1*	3		D
+ Hexone 5000 (2270)	108101	Methyl isobutyl ketone 4-Methyl-2-pentanone	1*	3,4	U161	D
+ Hydrazine 1 (0.454)	302012		1*	3,4	U133	X
+Hydrazine, 1,2-diethyl- 10 (4.54)	1615801	N,N'-Diethylhydrazine	1*	4	U086	A
+ Hydrazine, 1,1-dimethyl- 10 (4.54)	57147	1,1-Dimethylhydrazine	1*	3,4	U098	A
+Hydrazine, 1,2-dimethyl- 1 (0.454)	540738	1,2-Dimethylhydrazine	1*	4	U099	X
+ Hydrazine, 1,2-diphenyl- 10 (4.54)	122667	1,2-Diphenylhydrazine	1*	2,3,4	U109	A
+ Hydrazine, methyl- 10 (4.54)	60344	Methyl hydrazine	1*	3,4	P068	A
+Hydrazinecarbothioamide 100 (45.4)	79196	Thiosemicarbazide	1*	4	P116	B
+ Hydrochloric acid 5000 (2270)	7647010	Hydrogen chloride	5000	1,3		D
+Hydrocyanic acid 10 (4.54)	74908	Hydrogen cyanide	10	1,4	P063	A
+ Hydrofluoric acid 100 (45.4)	7664393	Hydrogen fluoride	5000	1,3,4	U134	B
+ Hydrogen chloride 5000 (2270)	7647010	Hydrochloric acid	5000	1,3		D
+Hydrogen cyanide 10 (4.54)	74908	Hydrocyanic acid	10	1,4	P063	A
+ Hydrogen fluoride 100 (45.4)	7664393	Hydrofluoric acid	5000	1,3,4	U134	B
+ Hydrogen phosphide 100 (45.4)	7803512	Phosphine	1*	3,4	P096	B
+Hydrogen sulfide 100 (45.4)	7783064	Hydrogen sulfide H2S	100	1,4	U135	B
+Hydrogen sulfide H2S 100 (45.4)	7783064	Hydrogen sulfide	100	1,4	U135	B
+Hydroperoxide, 1-methyl-1-phenylethyl-	80159	alpha,alpha-Dimethylbenzylhydroperoxide	1*	4	U096	A
+ Hydroquinone 100 (45.4)	123319		1*	3		B
+ 2-Imidazolidinethione 10 (4.54)	96457	Ethylenethiourea	1*	3,4	U116	A
+Indeno(1,2,3-cd)pyrene 100 (45.4)	193395	1,10-(1,2-Phenylene)pyrene	1*	2,4	U137	B
+ Iodomethane 100 (45.4)	74884	Methane, iodo- Methyl iodide	1*	3,4	U138	B
+ Iron, tris (dimethylcarbamodithioato-S,S')- (Ferbam)	14484641		1*	4	U396	
+ 1,3-Isobenzofurandione 5000 (2270)	85449	Phthalic anhydride	1*	3,4	U190	D
+Isobutyl alcohol 5000 (2270)	78831	1-Propanol, 2-methyl-	1*	4	U140	D
+Isodrin 1 (0.454)	465736	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-	1*	4	P060	X
+ Isophorone 5000 (2270)	78591		1*	2,3		D
+Isoprene 100 (45.4)	78795		1000	1		B
+Isopropanolamine 1000 (454)	42504461		1000	1		C
+ dodecylbenzenesulfonate						
+Isosafrole 100 (45.4)	120581	1,3-Benzodioxole, 5-(1-propenyl)-	1*	4	U141	B
+3(2H)-Isoxazolone, 5-(aminomethyl)- 1000 (454)	2763964	Muscimol 5-(Aminomethyl)-3-isoxazolol	1*	4	P007	C
+Kepone 1 (0.454)	143500	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	1	1,4	U142	X
+Lasiocarpine 10 (4.54)	303344	2-Butenoic acid, 2-methyl-, 7[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-	1*	4	U143	A
+ Lead ** 10 (4.54)	7439921		1*	2		A
+ Lead acetate 10 (4.54)	301042	Acetic acid, lead(2+) salt	5000	1,4	U144	A
+ LEAD AND COMPOUNDS (*)	N.A.	Lead Compounds	1*	2,3		
+ Lead Compounds (**)	N.A.	LEAD AND COMPOUNDS	1*	2,3		
+Lead arsenate 1 (0.454)	7784409		5000	1		X

	7645252					
	10102484					
Lead, bis(acetato-O) tetrahydroxytri	1335326	Lead subacetate	1*	4	U146	A
Lead chloride	7758954		5000	1		A
Lead fluoborate	13814965		5000	1		A
Lead fluoride	7783462		1000	1		A
Lead iodide	10101630		5000	1		A
Lead nitrate	10099748		5000	1		A
Lead phosphate	7446277	Phosphoric acid, lead(2+) salt (2: 3)	1*	4	U145	
Lead stearate	7428480		5000	1		A
	1072351					
	52652592					
	56189094					
Lead subacetate	1335326	Lead, bis(acetato-O) tetrahydroxytri	1*	4	U146	A
Lead sulfate	15739807		5000	1		A
	7446142					
Lead sulfide	1314870		5000	1		A
Lead thiocyanate	592870		5000	1		A
Lindane	58899	á-BHC	1	1,2,3,4	U129	X
		Cyclohexane, 1,2,3,4,5,6- hexachloro-, (1á,2á, 3á,4á,5á,6á)-				
		Hexachlorocyclo- hexane (gamma isomer)				
		Lindane (all isomers)				
Lindane (all isomers)	58899	á-BHC	1	1,2,3,4	U129	X
		Cyclohexane, 1,2,3,4,5,6- hexachloro-, (1á,2á, 3á,4á,5á,6á)-				
		Hexachlorocyclo- hexane (gamma isomer)				
		Lindane				
Lithium chromate	14307358		1000	1		A
Malathion	121755		10	1		B
Maleic acid	110167		5000	1		D
Maleic anhydride	108316	2,5-Furandione	5000	1,3,4	U147	D
Maleic hydrazide	123331	3,6-Pyridazinedione, 1,2-dihydro-	1*	4	U148	D
Malononitrile	109773	Propanedinitrile	1*	4	U149	C
Manganese Compounds (**)	N.A.		1*	3		
MDI	101688	Methylene diphenyl diisocyanate	1*	3		D
MEK	78933	2-Butanone	1*	3,4	U159	D
		Methyl ethyl ketone				
Manganese, bis (dimethylcarbamodithioato-S,S')- (Manganese dimethyldithiocarbamate)	15339363		1*	4	P196	
Melphalan	148823	L-Phenylalanine, 4-[bis(2-chloroethyl) amino]-	1*	4	U150	X
Mercaptodimethur	2032657		100	1		A
Mercuric cyanide	592041		1	1		X
Mercuric nitrate	10045940		10	1		A
Mercuric sulfate	7783359		10	1		A
Mercuric thiocyanate	592858		10	1		A
Mercurous nitrate	10415755		10	1		A
	7782867					
Mercury	7439976		1*	2,3,4	U151	X
MERCURY AND COMPOUNDS (**)	N.A.	Mercury Compounds	1*	2,3		

Mercury Compounds	N.A.	MERCURY AND COMPOUNDS	1*	2,3		
Mercury, (acetate-O)phenyl- 100 (45.4)	62384	Phenylmercury acetate	1*	4	P092	B
Mercury fulminate 10 (4.54)	628864	Fulminic acid, mercury(2+)salt	1*	4	P065	A
Methacrylonitrile 1000 (454)	126987	2-Propenenitrile, 2-methyl-	1*	4	U152	C
Methanamine, N-methyl- 1000 (454)	124403	Dimethylamine	1000	1,4	U092	C
Methanamine, N-methyl-N-nitroso- 10 (4.54)	62759	N-Nitrosodimethylamine	1*	2,3,4	P082	A
Methane, bromo- 1000 (454)	74839	Bromomethane	1*	2,3,4	U029	C
		Methyl bromide				
Methane, chloro- 100 (45.4)	74873	Chloromethane	1*	2,3,4	U045	B
		Methyl chloride				
Methane, chloromethoxy- 10 (4.54)	107302	Chloromethyl methyl ether	1*	3,4	U046	A
Methane, dibromo- 1000 (454)	74953	Methylene bromide	1*	4	U068	C
Methane, dichloro- 1000 (454)	75092	Methylene chloride	1*	2,3,4	U080	C
		Dichloromethane				
Methane, dichlorodifluoro- 5000 (2270)	75718	Dichlorodifluoromethane	1*	4	U075	C
Methane, iodo- 100 (45.4)	74884	Iodomethane	1*	3,4	U138	B
		Methyl iodide				
Methane, isocyanato- 10 (4.54)	624839	Methyl isocyanate	1*	3,4	P064	A
Methane, oxybis(chloro- 10 (4.54)	542881	Bis(chloromethyl) ether	1*	3,4	P016	A
		Dichloromethyl ether				
Methanesulfenyl chloride, 100 (45.4) trichloro-	594423	Trichloromethanesulfenyl chloride	1*	4	P118	B
Methanesulfonic acid, ethyl ester 1 (0.454)	62500	Ethyl methanesulfonate	1*	4	U119	X
Methane, tetrachloro- 10 (4.54)	56235	Carbon tetrachloride	5000	1,2,3,4	U211	A
Methane, tetranitro- 10 (4.54)	509148	Tetranitromethane	1*	4	P112	A
Methane, tribromo- 100 (45.4)	75252	Bromoform	1*	2,3,4	U225	B
Methane, trichloro- 10 (4.54)	67663	Chloroform	5000	1,2,3,4	U044	A
Methane, trichlorofluoro- 5000 (2270)	75694	Trichloromonofluoromethane	1*	4	U121	D
Methanethiol 100 (45.4)	74931	Methylmercaptan	100	1,4	U153	B
		Thiomethanol				
Methanimidamide, N,N-dimethyl-N'-[3-[[(methylamino)carbonyl]oxy]phenyl]-, monohydrochloride (Formetanate hydrochloride).	23422539		1*	4	P198	
Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[[(methylamino)carbonyl]oxy]phenyl]- (Formparanate).	17702577		1*	4	P197	
6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide.	115297	Endosulfan	1	1,2,4	P050	X
1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	143500	Kepone	1	1,4	U142	X
4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	76448	Heptachlor	1	1,2,3,4	P059	X
4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	57749	Chlordane	1	1,2,3,4	U036	X
		Chlordane, alpha & gamma isomers				
		CHLORDANE (TECHNICAL MIXTURE AND METABOLITES)				
Methanol 5000 (2270)	67561	Methyl alcohol	1*	3,4	U154	D
Methapyrilene 5000 (2270)	91805	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-	1*	4	U155	D
Methomyl 100 (45.4)	16752775	Ethanimidothioic acid, N-[[(methyl amino)carbonyl]oxy]-, methyl ester	1*	4	P066	B
Methoxychlor 1 (0.454)	72435	Benzene, 1,1'-(2,2,2-	1	1,3,4	U247	X

		trichloroethylidene) bis(4-methoxy-				
Methyl alcohol 5000 (2270)	67561	Methanol	1*	3,4	U154	D
2-Methyl aziridine 1 (0.454)	75558	Aziridine, 2-methyl- 1,2-Propylenimine	1*	3,4	P067	X
Methyl bromide 1000 (454)	74839	Bromomethane Methane, bromo-	1*	2,3,4	U029	C
1-Methylbutadiene 100 (45.4)	504609	1,3-Pentadiene	1*	4	U186	B
Methyl chloride 100 (45.4)	74873	Chloromethane Methane, chloro-	1*	2,3,4	U045	B
Methyl chlorocarbonate 1000 (454)	79221	Carbonochloridic acid, methyl ester Methyl chloroformate	1*	4	U156	C
Methyl chloroform 1000 (454)	71556	Ethane, 1,1,1-trichloro- 1,1,1-Trichloroethane	1*	2,3,4	U226	C
Methyl chloroformate 1000 (454)	79221	Carbonochloridic acid, methyl ester Methyl chlorocarbonate	1*	4	U156	C
3-Methylcholanthrene 10 (4.54)	56495	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	1*	4	U157	A
4,4 -Methylenebis(2-chloroaniline) 10 (4.54)	101144	Benzenamine, 4,4'-methylene-bis(2-chloro-	1*	3,4	U158	A
Methylene bromide 1000 (454)	74953	Methane, dibromo-	1*	4	U068	C
Methylene chloride 1000 (454)	75092	Dichloromethane Methane, dichloro-	1*	2,3,4	U080	C
4,4 - Methylenedianiline 10 (4.54)	101779		1*	3		A
Methylene diphenyl diisocyanate 5000 (2270)	101688	MDI	1*	3		D
Methyl ethyl ketone 5000 (2270)	78933	2-Butanone MEK	1*	4	U159	D
Methyl ethyl ketone peroxide 10 (4.54)	1338234	2-Butanone peroxide	1*	4	U160	A
Methyl hydrazine 10 (4.54)	60344	Hydrazine, methyl-	1*	3,4	P068	A
Methyl iodide 100 (45.4)	74884	Iodomethane Methane, iodo-	1*	3,4	U138	B
Methyl isobutyl ketone 5000 (2270)	108101	Hexone 4-Methyl-2-pentanone	1*	3,4	U161	D
Methyl isocyanate 10 (4.54)	624839	Methane, isocyanato-	1*	3,4	P064	A
2-Methyllactonitrile 10 (4.54)	75865	Acetone cyanonydrin Propanenitrile, 2-hydroxy-2-methyl -	10	1,4	P069	A
Methylmercaptan 100 (45.4)	74931	Methanethiol Thiomethanol	100	1,4	U153	B
Methyl methacrylate 1000 (454)	80626	2-Propenoic acid, 2-methyl-, methyl ester	5000	1,3,4	U162	C
Methyl parathion 100 (45.4)	298000	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester	100	1,4	P071	B
4-Methyl-2-pentanone 5000 (2270)	108101	Hexone Methyl isobutyl ketone	1*	3,4	U161	D
Methyl tert-butyl ether 1000 (454)	1634044		1*	3		C
Methylthiouracil 10 (4.54)	56042	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	1*	4	U164	A
Mevinphos 10 (4.54)	7786347		1	1		A
Mexacarbate 1000 (454)	315184		1000	1		C
Mitomycin C 10 (4.54)	50077	Azirino[2',3',3,4]pyrrolo[1,2-a] indole-4,7-dione,6-amino-8-[[(aminocarbonyl)oxy] methyl]-1,1a, 2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta, 8aalpha, 8balpha)]-	1*	4	U010	A
MNNG 10 (4.54)	70257	Guanidine, N-methyl-N'-nitro-N-nitroso-	1*	4	U163	A

+Monoethylamine	75047		1000	1		B
100 (45.4)						
+Monomethylamine	74895		1000	1		B
100 (45.4)						
+Multi Source Leachate			1*	4	F039	X
1 (0.454)						
+Muscimol	2763964	3(2H)-Isoxazolone, 5-(aminomethyl)	1*	4	P007	C
1000 (454)		- 5- (Aminomethyl)-3-isoxazolol				
+Naled	300765		10	1		A
10 (4.54)						
+5,12-Naphthacenedione, 8-acetyl-10	20830813	Daunomycin	1*	4	U059	A
10 (4.54)						
+-[3-amino-2,3,6-trideoxy-alpha-L-						
+lyxo-hexopyranosyl)oxy]-7,8,9,10-						
+tetrahydro-6,8,11-trihydroxy-1-						
+methoxy-, (8S-cis)-						
+1-Naphthalenamine	134327	alpha-Naphthylamine	1*	4	U167	B
100 (45.4)						
+2-Naphthalenamine	91598	beta-Naphthylamine	1*	4	U168	A
10 (4.54)						
+Naphthalenamine, N,N'-bis(2-	494031	Chlornaphazine	1*	4	U026	B
100 (45.4)						
+chloroethyl)-						
+Naphthalene	91203		5000	1,2,3,4	U165	B
100 (45.4)						
+Naphthalene, 2-chloro-	91587	beta-Chloronaphthalene 2-	1*	2,4	U047	D
5000 (2270)		Chloronaphthalene				
+1,4-Naphthalenedione	130154	1,4-Naphthoquinone	1*	4	U166	D
5000 (2270)						
+2,7-Naphthalenedisulfonic acid, 3,	72571	Trypan blue	1*	4	U236	A
10 (4.54)						
+3'-[(3,3'-dimethyl-(1,1'-biphenyl)-						
+4,4'-diyl)-bis(azo)]bis(5-amino-						
+4-hydroxy)-tetrasodium salt.						
+Naphthenic acid	1338245		100	1		B
100 (45.4)						
+1,4-Naphthoquinone	130154	1,4-Naphthalenedione	1*	4	U166	D
5000 (2270)						
+alpha-Naphthylamine	134327	1-Naphthalenamine	1*	4	U167	B
100 (45.4)						
+beta-Naphthylamine	91598	2-Naphthalenamine	1*	4	U168	A
10 (4.54)						
+alpha-Naphthylthiourea	86884	Thiourea, 1-naphthalenyl-	1*	4	P072	B
100 (45.4)						
+Nickel **	7440020		1*	2		B
100 (45.4)						
+Nickel ammonium sulfate	15699180		5000	1		B
100 (45.4)						
+ NICKEL AND COMPOUNDS	N.A.	Nickel Compounds	1*	2,3		
(**)						
+ Nickel Compounds	N.A.	NICKEL AND COMPOUNDS	1*	2,3		
(**)						
+Nickel carbonyl	13463393	Nickel carbonyl Ni(CO)4, (T-4)-	1*	4	P073	A
10 (4.54)						
+Nickel carbonyl Ni(CO)4, (T-4)-	13463393	Nickel carbonyl	1*	4	P073	A
10 (4.54)						
+Nickel chloride	7718549		5000	1		B
100 (45.4)						
+	37211055					
+Nickel cyanide	557197	Nickel cyanide Ni(CN)2	1*	4	P074	A
10 (4.54)						
+Nickel cyanide Ni(CN)2	557197	Nickel cyanide	1*	4	P074	A
10 (4.54)						
+Nickel hydroxide	12054487		1000	1		A
10 (4.54)						
+Nickel nitrate	14216752		5000	1		B
100 (45.4)						
+Nickel sulfate	7786814		5000	1		B
100 (45.4)						
+Nicotine, & salts	54115	Pyridine, 3-(1-methyl-2-	1*	4	P075	B
100 (45.4)		pyrrolidinyl)-, (S)-				
+Nitric acid	7697372		1000	1		C
1000 (454)						
+Nitric acid, thallium (1+) salt	10102451	Thallium (I) nitrate	1*	4	U217	B
100 (45.4)						
+Nitric oxide	10102439	Nitrogen oxide NO	1*	4	P076	A
10 (4.54)						
+p-Nitroaniline	100016	Benzenamine, 4-nitro-	1*	4	P077	D
5000 (2270)						
+ Nitrobenzene	98953	Benzene, nitro-	1000	1,2,3,4	U169	C
1000 (454)						
+ 4-Nitrobiphenyl	92933		1**	3		A
10 (4.54)						
+Nitrogen dioxide	10102440	Nitrogen oxide NO2	1000	1,4	P078	A
10 (4.54)						
+	10544726					
+Nitrogen oxide NO	10102439	Nitric oxide	1*	4	P076	A
10 (4.54)						
+Nitrogen oxide NO2	10102440	Nitrogen dioxide	1000	1,4	P078	A
10 (4.54)						
+	10544726					
+Nitroglycerine	55630	1,2,3-Propanetriol, trinitrate-	1*	4	P081	A
10 (4.54)						
+Nitrophenol (mixed)	25154556		1000	1		B
100 (45.4)						
+ m-Nitrophenol	554847					B
100 (45.4)						
+ o-Nitrophenol	88755	2-Nitrophenol				
+ p-Nitrophenol	100027	4-Nitrophenol	1000	1,2,3,4	U170	B
100 (45.4)		Phenol, 4-nitro-				
+						

+o-Nitrophenol	88755	2-Nitrophenol	1000	1,2		B
100 (45.4)						
+p-Nitrophenol	100027	Phenol, 4-nitro- 4-Nitrophenol	1000	1,2,4	U170	B
100 (45.4)						
+2-Nitrophenol	88755	o-Nitrophenol	1000	1,2		B
100 (45.4)						
+ 4-Nitrophenol	100027	p-Nitrophenol Phenol, 4-nitro-	1000	1,2,3,4	U170	B
100 (45.4)						
+NITROPHENOLS	N.A.		1*	2		
+ 2-Nitropropane	79469	Propane, 2-nitro-	1*	3,4	U171	A
10 (4.54)						
+NITROSAMINES	N.A.		1*	2		
+N-Nitrosodi-n-butylamine	924163	1-Butanamine, N-butyl-N-nitroso-	1*	4	U172	A
10 (4.54)						
+N-Nitrosodiethanolamine	1116547	Ethanol, 2,2'-(nitrosoimino)bis-	1*	4	U173	X
1 (0.454)						
+N-Nitrosodiethylamine	55185	Ethanamine, N-ethyl-N-nitroso-	1*	4	U174	X
1 (0.454)						
+ N-Nitrosodimethylamine	62759	Methanamine, N-methyl-N-nitroso-	1*	2,3,4	P082	A
10 (4.54)						
+N-Nitrosodiphenylamine	86306		1*	2		B
100 (45.4)						
+N-Nitroso-N-ethylurea	759739	Urea, N-ethyl-N-nitroso-	1*	4	U176	X
1 (0.454)						
+ N-Nitroso-N-methylurea	684935	Urea, N-methyl-N-nitroso	1*	3,4	U177	X
1 (0.454)						
+N-Nitroso-N-methylurethane	615532	Carbamic acid, methylnitroso-,	1*	4	U178	X
1 (0.454)		ethyl ester				
+N-Nitrosomethylvinylamine	4549400	Vinylamine, N-methyl-N-nitroso-	1*	4	P084	A
10 (4.54)						
+ N-Nitrosomorpholine	59892		1*	3		X
1 (0.454)						
+N-Nitrosopiperidine	100754	Piperidine, 1-nitroso-	1*	4	U179	A
10 (4.54)						
+N-Nitrosopyrrolidine	930552	Pyrrolidine, 1-nitroso-	1*	4	U180	X
1 (0.454)						
+Nitrotoluene	1321126		1000	1		C
1000 (454)						
+ m-Nitrotoluene	99081					
+ o-Nitrotoluene	88722					
+ p-Nitrotoluene	99990					
+5-Nitro-o-toluidine	99558	Benzenamine, 2-methyl-5-nitro-	1*	4	U181	B
100 (45.4)						
+Octamethylpyrophosphoramide	152169	Diphosphoramide, octamethyl-	1*	4	P085	B
100 (45.4)						
+Osmium oxide OsO4 (T-4)-	20816120	Osmium tetroxide	1*	4	P087	C
1000 (454)						
+Osmium tetroxide	20816120	Osmium oxide OsO4 (T-4)-	1*	4	P087	C
1000 (454)						
+7-Oxabicyclo[2.2.1]heptane-2,3-	145733	Endothall	1*	4	P088	C
1000 (454)						
+ dicarboxylic acid						
+ 1,2-Oxathiolane, 2,2-dioxide	1120714	1,3-Propane sultone	1*	3,4	U193	A
10 (4.54)						
+2H-1,3,2-Oxazaphosphorin-2-amine,	50180	Cyclophosphamide	1*	4	U058	A
10 (4.54)						
+ N,N-bis(2-chloroethyl)tetrahydro-						
+ 2-oxide.						
+ Oxirane	75218	Ethylene oxide	1*	3,4	U115	A
10 (4.54)						
+Oxiranecarboxyaldehyde	765344	Glycidylaldehyde	1*	4	U126	A
10 (4.54)						
+ Oxirane, (chloromethyl)-	106898	Epichlorohydrin	1000	1,3,4	U041	B
100 (45.4)						
+Paraformaldehyde	30525894		1000	1		C
1000 (454)						
+Paraldehyde	123637	1,3,5-Trioxane, 2,4,6-trimethyl-	1*	4	U182	C
1000 (454)						
+ Parathion	56382	Phosphorothioic acid, O,O-diethyl	1	1,3,4	P089	A
10 (4.54)		O-(4-nitrophenyl) ester				
+Pentachlorobenzene	608935	Benzene, pentachloro-	1*	4	U183	A
10 (4.54)						
+Pentachloroethane	76017	Ethane, pentachloro-	1*	4	U184	A
10 (4.54)						
+ PCBs	1336363	Aroclors	10	1,2,3		X
1 (0.454)		POLYCHLORINATED				
		BIPHENYLS				
+ Aroclor 1016	12674112		10	1,2,3		X
1 (0.454)						
+ Aroclor 1221	11104282		10	1,2,3		X
1 (0.454)						
+ Aroclor 1232	11141165		10	1,2,3		X
1 (0.454)						
+ Aroclor 1242	53469219		10	1,2,3		X
1 (0.454)						
+ Aroclor 1248	12672296		10	1,2,3		X
1 (0.454)						
+ Aroclor 1254	11097691		10	1,2,3		X
1 (0.454)						
+ Aroclor 1260	11096825		10	1,2,3		X
1 (0.454)						
+ PCNB	82688	Benzene, pentachloronitro-	1*	3,4	U185	B
100 (45.4)		Pentachloronitro-benzene				
		Quintobenzene				
+ Pentachloronitrobenzene	82688	Benzene, pentachloronitro	1*	3,4	U185	B
100 (45.4)		PCNB				
		Quintobenzene				
+ Pentachlorophenol	87865	Phenol, pentac- h	10	1,2,3,4	U242	A
10 (4.54)						

1,3-Pentadiene	504609	1-Methylbutadiene	1*	4	U186	B
100 (45.4)						
Perchloroethylene	127184	Ethene, tetrachloro- Tetrachloro-	1*	2,3,4	U210	B
100 (45.4)		ethene Tetrachloroethylene				
Phenacetin	62442	Acetamide, N-(4-ethoxyphenyl)-	1*	4	U187	B
100 (45.4)						
Phenanthrene	85018		1*	2		D
5000 (2270)						
Phenol	108952	Benzene, hydroxy-	1000	1,2,3,4	U188	C
1000(454)						
Phenol, 2-chloro-	95578	o-Chlorophenol 2-Chlorophenol	1*	2,4	U048	B
100 (45.4)						
Phenol, 4-chloro-3-methyl-	59507	p-Chloro-m-cresol	1*	2,4	U039	D
5000 (2270)		4-Chloro-m-cresol				
Phenol, 2-cyclohexyl-4,6-dinitro-	131895	2-Cyclohexyl-4,6-dinitrophenol	1*	4	P034	B
100 (45.4)						
Phenol, 2,4-dichloro-	120832	2,4-Dichlorophenol	1*	2,4	U081	B
100 (45.4)						
Phenol, 2,6-dichloro-	87650	2,6-Dichlorophenol	1*	4	U082	B
100 (45.4)						
Phenol, 4,4'-(1,2-diethyl-1,2-	56531	Diethylstilbestrol	1*	4	U089	X
1 (0.454)						
ethenediyl) bis-, (E)-						
Phenol, 2,4-dimethyl-	105679	2,4-Dimethylphenol	1*	2,4	U101	B
100 (45.4)						
Phenol, 2,4-dinitro-	51285	2,4-Dinitrophenol	1000	1,2,3,4	P048	A
10 (4.54)						
Phenol, methyl-	1319773	Cresols (isomers and mixture)	1000	1,4	U052	B
100 (45.4)		Cresylic acid (isomers and				
		mixture)				
m-Cresol	108394	m-Cresylic acid				
o-Cresol	95487	o-Cresylic acid				
p-Cresol	106445	p-Cresylic acid				
Phenol, 2-methyl-4,6-dinitro-	534521	4,6-Dinitro-o-cresol, and salts	1*	2,3,4	P047	A
10 (4.54)						
& salts						
Phenol, 3-(1-methylethyl)-,	64006		1*	4	P202	
methyl carbamate (m-Cumenyl						
methylcarbamate)						
Phenol, 3-methyl-5-(1-methylethyl)-	2631370		1*	4	P201	
methyl carbamate (Promecarb)						
Phenol, 2,2'-methylenebis(3,4,6-	70304	Hexachlorophene	1*	4	U132	B
100 (45.4)						
trichloro-						
Phenol, 2-(1-methylpropyl)-4,6-	88857	Dinoseb	1*	4	P020	C
1000 (454)						
dinitro-						
Phenol, 4-nitro-	100027	p-Nitrophenol	1000	1,2,3,4	U170	B
100 (45.4)		4-Nitrophenol				
Phenol, pentachloro-	87865	Pentachlorophenol	10	1,2,3,4	U242	A
10 (4.54)						
Phenol, 2,3,4,6-tetrachloro-	58902	2,3,4,6-Tetrachlorophenol	1*	4	U212	A
10 (4.54)						
Phenol, 2,4,5-trichloro-	95954	2,4,5-Trichlorophenol	10	1,3,4	U230	A
10 (4.54)						
Phenol, 2,4,6-trichloro-	88062	2,4,6-Trichlorophenol	10	1,2,3,4	U231	A
10 (4.54)						
Phenol, 2,4,6-trinitro-, ammonium	131748	Ammonium picrate	1*	4	P009	A
10 (4.54)						
salt						
L-Phenylalanine, 4-[bis(2-	148823	Melphalan	1*	4	U150	X
1 (0.454)						
chloroethyl) amino]-						
p-Phenylenediamine	106503		1*	3		D
5000 (2270)						
1,10-(1,2-Phenylene)pyrene	193395	Indeno(1,2,3-cd)pyrene	1*	2,4	U137	B
100 (45.4)						
Phenylmercury acetate	62384	Mercury, (acetato-O)phenyl-	1*	4	P092	B
100 (45.4)						
Phenylthiourea	103855	Thiourea, phenyl-	1*	4	P093	B
100 (45.4)						
Phorate	298022	Phosphorodithioic acid, O,O-	1*	4	P094	A
10 (4.54)		diethyl S-(ethylthio) methyl				
		ester				
Phosgene	75445	Carbonic dichloride	5000	1,3,4	P095	A
10 (4.54)						
Phosphine	7803512	Hydrogen phosphide	1*	3,4	P096	B
100 (45.4)						
Phosphoric acid	7664382		5000	2		D
5000 (2270)						
Phosphoric acid, diethyl 4-	311455	Diethyl-p-nitrophenyl phosphate	1*	4	P041	B
100 (45.4)						
nitrophenyl ester						
Phosphoric acid, lead(2+) salt (2:3)	7446277	Lead phosphate	1*	4	U145	A
10 (4.54)						
Phosphorodithioic acid, O,O-	298044	Disulfoton	1	1,4	P039	X
1 (0.454)						
diethyl S-[2-(ethylthio)ethyl]						
ester						

Phosphorodithioic acid, O,O-diethyl S-(ethylthio)methyl ester (4,54)	298022	Phorate	1*	4	P094	A
Phosphorodithioic acid, O,O-dimethyl S-methyl ester (2270)	3288582	O,O-Diethyl S-methyl dithiophosphate	1*	4	U087	D
Phosphorodithioic acid, O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester (4,54)	60515	Dimethoate	1*	4	P044	A
Phosphorofluoridic acid, bis(1-methylethyl) ester (45.4)	55914	Diisopropylfluorophosphate	1*	4	P043	B
Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester (4,54)	56382	Parathion	1	1,3,4	P089	A
Phosphorothioic acid, O-[4-[(dimethylamino) sulfonyl]phenyl]O,O-dimethyl ester (454)	52857	Famphur	1*	4	P097	C
Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester (45.4)	298000	Methyl parathion	100	1,4	P071	B
Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester (45.4)	297972	O,O-Diethyl O-pyrazinyl phosphorothioate	1*	4	P040	B
Phosphorus (100 454)	7723140		1	1,3		X
Phosphorous oxycloride (1000 454)	10025873		5000	1		C
Phosphorus pentasulfide (100 45.4)	1314803	Phosphorus sulfide Sulfur phosphide	100	1,4	U189	B
Phosphorus sulfide (100 45.4)	1314803	Phosphorus pentasulfide Sulfur phosphide	100	1,4	U189	B
Phosphorus trichloride (1000 454)	7719122		5000	1		C
PHTHALATE ESTERS **	N.A.		1*	2		
Phthalic anhydride (5000 2270)	85449	1,3-Isobenzofurandione	1*	3,4	U190	D
2-Picoline (5000 2270)	109068	Pyridine, 2-methyl-	1*	4	U191	D
Piperidine, 1-nitroso- (10 4 54)	100754	N-Nitrosopiperidine	1*	4	U179	A
Piperidine, 1,1 -(tetrathiodicarbonothioyl)-bis- (Bis(pentamenthylene)thiuram tetrasulfide)	120547		1*	4	U400	
Plumbane, tetraethyl- (10 4 54)	78002	Tetraethyl lead	100	1,4	P110	A
POLYCHLORINATED BIPHENYLS (1 0 454)	1336363	Aroclors PCBs	10	1,2,3		X
Aroclor 1016 (1 0 454)	12674112		10	1,2,3		X
Aroclor 1221 (1 0 454)	11104282		10	1,2,3		X
Aroclor 1232 (1 0 454)	11141165		10	1,2,3		X
Aroclor 1242 (1 0 454)	53469219		10	1,2,3		X
Aroclor 1248 (1 0 454)	12672296		10	1,2,3		X
Aroclor 1254 (1 0 454)	11097691		10	1,2,3		X
Aroclor 1260 (1 0 454)	11096825		10	1,2,3		X
Polycyclic Organic Matter (e) (***)	N.A.		1*	3		
POLYNUCLEAR AROMATIC HYDROCARBONS **	N.A.		1*	2		
Potassium arsenate (1 0 454)	7784410		1000	1		X
Potassium arsenite (1 0 454)	10124502		1000	1		X
Potassium bichromate (10 4 54)	7778509		1000	1		A
Potassium chromate (10 4 54)	7789006		1000	1		A
Potassium cyanide (10 4 54)	151508	Potassium cyanide K (CN)	10	1,4	P098	A
Potassium cyanide K(CN) (10 4 54)	151508	Potassium cyanide	10	1,4	P098	A
Potassium hydroxide (1000 454)	1310583		1000	1		C
Potassium permanganate (100 45.4)	7722647		100	1		B
Potassium silver cyanide (1 0 454)	506616	Argantate (1-), bis(cyano-C)-, potassium	1*	4	P099	X
Pronamide (5000 2270)	23950585	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	1*	4	U192	D
Propanal, 2-methyl-2-(methylsulfonyl)-, O-[(	1646884		1*	4	P203	

+ (methylamino)carbonyl] oxime						
+ (Aldicarb sulfone).						
+Propanal, 2-methyl-2-(methylthio)- 1 (0.454)	116063	Aldicarb	1*	4	P070	X
+ , O-[(methylamino)carbonyl]oxime.						
+1-Propanamine 5000 (2270)	107108	n-Propylamine	1*	4	U194	D
+1-Propanamine, N-propyl- 5000 (2270)	142847	Dipropylamine	1*	4	U110	D
+1-Propanamine, N-nitroso-N-propyl- 10 (4.54)	621647	Di-n-propylnitrosamine	1*	2,4	U111	A
+ Propane, 1,2-dibromo-3-chloro- 1 (0.454)	96128	1,2-Dibromo-3-chloropropane	1*	3,4	U066	X
+ Propane, 2-nitro- 10 (4.54)	79469	2-Nitropropane	1*	3,4	U171	A
+ 1,3-Propane sultone 10 (4.54)	1120714	1,2-Oxathiolane, 2,2-dioxide	1*	3,4	U193	A
+ Propane, 1,2-dichloro- 1000 (454)	78875	1,2-Dichloropropane	5000	1,2,3,4	U083	C
+		Propylene dichloride				
+Propanedinitrile 1000 (454)	109773	Malononitrile	1*	4	U149	C
+Propanenitrile 10 (4.54)	107120	Ethyl cyanide	1*	4	P101	A
+Propanenitrile, 3-chloro- 1000 (454)	542767	3-Chloropropionitrile	1*	4	P027	C
+Propanenitrile, 2-hydroxy-2-methyl 10 (4.54)	75865	Acetone cyanonydrin	10	1,4	P069	A
+ -		2-Methyllactonitrile				
+Propane, 2,2 -oxybis[2-chloro- 1000 (454)	108601	Dichloroisopropyl ether	1*	2,4	U027	C
+1,2,3-Propanetriol, trinitrate- 10 (4.54)	55630	Nitroglycerine	1*	4	P081	A
+1-Propanol, 2,3-dibromo-, 10 (4.54)	126727	Tris(2,3-dibromopropyl) phosphate	1*	4	U235	A
+ phosphate (3:1).						
+1-Propanol, 2-methyl- 5000 (2270)	78831	Isobutyl alcohol	1*	4	U140	D
+2-Propanone 5000 (2270)	67641	Acetone	1*	4	U002	D
+2-Propanone, 1-bromo- 1000 (454)	598312	Bromoacetone	1*	4	P017	C
+Propargite 10 (4.54)	2312358		10	1		A
+Propargyl alcohol 1000 (454)	107197	2-Propyn-1-ol	1*	4	P102	C
+ 2-Propenal 1 (0.454)	107028	Acrolein	1	1,2,3,4	P003	X
+ 2-Propenamide 5000 (2270)	79061	Acrylamide	1*	3,4	U007	D
+1-Propene, 1,1,2,3,3,3-hexachloro- 1000 (454)	1888717	Hexachloropropene	1*	4	U243	C
+ 1-Propene, 1,3-dichloro- 100 (45.4)	542756	1,3-Dichloropropene	5000	1,2,3,4	U084	B
+ 2-Propenenitrile 100 (45.4)	107131	Acrylonitrile	100	1,2,3,4	U009	B
+2-Propenenitrile, 2-methyl- 1000 (454)	126987	Methacrylonitrile	1*	4	U152	C
+ 2-Propenoic acid 5000 (2270)	79107	Acrylic acid	1*	3,4	U008	D
+ 2-Propenoic acid, ethyl ester 1000 (454)	140885	Ethyl acrylate	1*	3,4	U113	C
+2-Propenoic acid, 2-methyl-, ethyl 1000 (454)	97632	Ethyl methacrylate	1*	4	U118	C
+ ester.						
+ 2-Propenoic acid, 2-methyl-, 1000 (454)	80626	Methyl methacrylate	5000	1,3,4	U162	C
+ methyl ester.						
+2-Propen-1-ol 100 (45.4)	107186	Allyl alcohol	100	1,4	P005	B
+ beta-Propiolactone 10 (4.54)	57578		1*	3		A
+ Propionaldehyde 1000 (454)	123386		1*	3		C
+Propionic acid 5000 (2270)	79094		5000	1		D
+Propionic acid, 2-(2,4,5- 100 (45.4)	93721	Silvex (2,4,5-TP)	100	1,4	U233	B
+ trichlorophenoxy)-		2,4,5-TP acid				
+Propionic anhydride 5000 (2270)	123626		5000	1		D
+n-Propylamine 5000 (2270)	107108	1-Propanamine	1*	4	U194	D
+ Propylene dichloride 1000 (454)	78875	1,2-Dichloropropane	5000	1,2,3,4	U083	C
+		Propane, 1,2-dichloro-				
+ Propylene oxide 100 (45.4)	75569		5000	1,3		B
+ 1,2-Propylenimine 1 (0.454)	75558	Aziridine, 2-methyl-	1*	3,4	P067	X
+		2-Methyl aziridine				
+2-Propyn-1-ol 1000 (454)	107197	Propargyl alcohol	1*	4	P102	C
+ Propoxur (Baygon) 100 (45.4)	114261		1*	3		B
+Pyrene 5000 (2270)	129000		1*	2		D
+Pyrethrins 1 (0.545)	121299		1000	1		X
+	121211					
+	8003347					
+3,6-Pyridazinedione, 1,2-dihydro- 5000 (2270)	123331	Maleic hydrazide	1*	4	U148	D
+4-Pyridinamine 1000 (454)	504245	4-Aminopyridine	1*	4	P008	C
+Pyridine 1000 (454)	110861		1*	4	U196	C

Pyridine, 2-methyl- 5000 (2270)	109068	2-Picoline	1*	4	U191	D
Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- 100 (45.4)	54115	Nicotine, & salts	1*	4	P075	B
2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]- 10 (4.54)	66751	Uracil mustard	1*	4	U237	A
4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo- 10 (4.54)	56042	Methylthiouracil	1*	4	U164	A
Pyrrolidine, 1-nitroso- 1 (0.454)	930552	N-Nitrosopyrrolidine	1*	4	U180	X
Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester), (3aS-cis)-(Physostigmine)	57476		1*	4	P204	
Quinoline 5000 (2270)	91225		1000	1,3		D
Quinone 10 (4.54)	106514	p-Benzoquinone 2,5-Cyclohexadiene-1,4-dione	1*	3,4	U197	A
Quintobenzene 100(45.4)	82688	Benzene, pentachloronitro PCNB Pentachloronitro-benzene	1*	3,4	U185	B
Radionuclides (including radon)	N.A.		1*	3		
Reserpine 5000 (2270)	50555	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy-, methyl ester (3beta, 16beta,17alpha, 18beta,20alpha)-	1*	4	U200	D
Resorcinol 5000 (2270)	108463	1,3-Benzenediol	1000	1,4	U201	D
Saccharin and salts 100 (45.4)	81072	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide	1*	4	U202	B
Safrole 100 (45.4)	94597	1,3-Benzodioxole, 5-(2-propenyl)-	1*	4	U203	B
Selenious acid 10 (4.54)	7783008		1*	4	U204	A
Selenious acid, dithallium (1+) salt 1000 (454)	12039520	Thallium selenite	1*	4	P114	C
Selenium ** 100 (45.4)	7782492		1*	2		B
SELENIUM AND COMPOUNDS (**)	N.A.	Selenium Compounds	1*	2,3		
Selenium Compounds (**)	N.A.	SELENIUM COMPOUNDS	1*	2,3		
Selenium dioxide 10 (4.54)	7446084	Selenium oxide	1000	1,4	U204	A
Selenium oxide 10 (4.54)	7446084	Selenium dioxide	1000	1,4	U204	A
Selenium sulfide 10 (4.54)	7488564	Selenium sulfide SeS2	1*	4	U205	A
Selenium sulfide SeS2 10 (4.54)	7488564	Selenium sulfide	1*	4	U205	A
Selenourea 1000 (454)	630104		1*	4	P103	C
L-Serine, diazoacetate (ester) 1 (0.454)	115026	Azaserine	1*	4	U015	X
Silver ** 1000 (454)	7440224		1*	2		C
SILVER AND COMPOUNDS (**)	N.A.		1*	2		
Silver cyanide 1 (0.454)	506649	Silver cyanide Ag (CN)	1*	4	P104	X
Silver cyanide Ag (CN) 1 (0.454)	506649	Silver cyanide	1*	4	P104	X
Silver nitrate 1 (0.454)	7761888		1	1		X
Silvex (2,4,5-TP) 100 (45.4)	93721	Propionic acid, 2-(2,4,5-trichlorophenoxy)- 2,4,5-TP acid	100	1,4	U233	B
Sodium 10 (4.54)	7440235		1000	1		A
Sodium arsenate 1 (0.454)	7631892		1000	1		X
Sodium arsenite 1 (0.454)	7784465		1000	1		X
Sodium azide 1000 (454)	26628228		1*	4	P105	C
Sodium bichromate 10 (4.54)	10588019		1000	1		A
Sodium bifluoride 100 (45.4)	1333831		5000	1		B
Sodium bisulfite 5000 (2270)	7631905		5000	1		D
Sodium chromate 10 (4.54)	7775113		1000	1		A
Sodium cyanide 10 (4.54)	143339	Sodium cyanide Na (CN)	10	1,4	P106	A
Sodium cyanide Na (CN) 10 (4.54)	143339	Sodium cyanide	10	1,4	P106	A
Sodium dodecylbenzenesulfonate 1000 (454)	25155300		1000	1		C

+Sodium fluoride	7681494		5000	1		C
1000 (454)						
+Sodium hydrosulfide	16721805		5000	1		D
5000 (2270)						
+Sodium hydroxide	1310732		1000	1		C
1000 (454)						
+Sodium hypochlorite	7681529		100	1		B
100 (45.4)						
+	10022705					
+Sodium methylate	124414		1000	1		C
1000 (454)						
+Sodium nitrite	7632000		100	1		B
100 (45.4)						
+Sodium phosphate, dibasic	7558794		5000	1		D
5000 (2270)						
+	10039324					
+	10140655					
+Sodium phosphate, tribasic	7601549		5000	1		D
5000 (2270)						
+	7758294					
+	7785844					
+	10101890					
+	10124568					
+	10361894					
+Sodium selenite	10102188		1000	1		B
100 (45.4)						
+	7782823					
+Streptozotocin	18883664	D-Glucose, 2-deoxy-2-[[	1*	4	U206	X
1 (0.454)		(methylnitrosoamino)-carbonyl]				
+		amino]-				
+		Glucopyranose, 2-deoxy-2-(3-methyl				
+		-3-nitrosoureido)-				
+Strontium chromate	7789062		1000	1		A
10 (4.54)						
+Strychnidin-10-one	57249	Strychnine, & salts	10	1.4	P108	A
10 (4.54)						
+Strychnidin-10-one, 2,3-dimethoxy-	357573	Brucine	1*	4	P018	B
100 (45.4)						
+Strychnine, & salts	57249	Strychnidin-10-one	10	1.4	P108	A
10 (4.54)						
+ Styrene	100425		1000	1.3		C
1000 (454)						
+ Styrene oxide	96093		1*	3		B
100 (45.4)						
+Sulfur monochloride	12771083		1000	1		C
1000 (454)						
+Sulfur phosphide	1314803	Phosphorus pentasulfide	100	1.4	U189	B
100 (45.4)		Phosphorus sulfide				
+						
+Sulfuric acid	7664939		1000	1		C
1000 (454)						
+	8014957					
+Sulfuric acid, dithallium (1+)	7446186	Thallium (I) sulfate	1000	1.4	P115	B
100 (45.4)						
+ salt	10031591					
+ Sulfuric acid, dimethyl ester	77781	Dimethyl sulfate	1*	1.4	U103	B
100 (45.4)						
+2,4,5-T acid	93765	Acetic acid, (2,4,5-	100	1.4	U232	C
1000 (454)		trichlorophenoxy)				
+		2,4,5-T				
+2,4,5-T amines	2008460		100	1		D
5000 (2270)						
+	1319728					
+	3813147					
+	6369966					
+	6369977					
+2,4,5-T esters	93798		100	1		C
1000 (454)						
+	1928478					
+	2545597					
+	25168154					
+	61792072					
+2,4,5-T salts	13560991		100	1		C
1000 (454)						
+2,4,5-T	93765	Acetic acid, (2,4,5-	100	1.4	U232	C
1000 (454)		trichlorophenoxy)				
+		2,4,5-T acid				
+ TCDD	1746016	2,3,7,8,-Tetrachlorodibenzo-p	1*	2.3		X
1 (0.454)		-dioxin				
+TDE	72548	Benzene, 1,1'-(2,2-	1	1,2,4	U060	X
1 (0.454)		dichloroethylidene)bis[4-chloro-				
+		DDD 4,4' DDD				
+1,2,4,5-Tetrachlorobenzene	95943	Benzene, 1,2,4,5-tetrachloro-	1*	4	U207	D
5000 (2270)						

2,3,7,8-Tetrachlorodibenzo-p-dioxin. 1 (0.454)	1746016	TCDD	1*	2,3		X
1,1,1,2-Tetrachloroethane 100 (45.4)	630206	Ethane, 1,1,1,2-tetrachloro-	1*	4	U208	B
1,1,2,2-Tetrachloroethane 100 (45.4)	79345	Ethane, 1,1,2,2-tetrachloro-	1*	2,3,4	U209	B
Tetrachloroethene 100 (45.4)	127184	Ethene, tetrachloro-	1*	2,3,4	U210	B
		Perchloroethylene				
		Tetrachloroethylene				
Tetrachloroethylene 100 (45.4)	127184	Ethene, tetrachloro-	1*	2,3,4	U210	B
		Perchloroethylene				
		Tetrachloroethene				
2,3,4,6-Tetrachlorophenol 10 (4.54)	58902	Phenol, 2,3,4,6-tetrachloro-	1*	4	U212	A
Tetraethyl lead 10 (4.54)	78002	Plumbane, tetraethyl-	100	1,4	P110	A
Tetraethyl pyrophosphate 10 (4.54)	107493	Diphosphoric acid, tetraethyl ester	100	1,4	P111	A
Tetraethyldithiopyrophosphate 100 (45.4)	3689245	Thiodiphosphoric acid, tetraethyl ester	1*	4	P109	B
Tetrahydrofuran 1000 (454)	109999	Furan, tetrahydro-	1*	4	U213	C
Tetranitromethane 10 (4.54)	509148	Methane, tetranitro-	1*	4	P112	A
Tetraphosphoric acid, hexaethyl ester 100 (45.4)	757584	Hexaethyl tetraphosphoate	1*	4	P062	B
Thallic oxide 100 (45.4)	1314325	Thallium oxide Tl2O3	1*	4	P113	B
Thallium ** 1000 (454)	7440280		1*	2		C
Thallium and compounds **	N.A.		1*	2		
Thallium (I) acetate 100 (45.4)	563688	Acetic acid, thallium(1+) salt	1*	4	U214	B
Thallium (I) carbonate 100 (45.4)	6533739	Carbonic acid, dithallium(1+) salt	1*	4	U215	B
Thallium (I) chloride 100 (45.4)	7791120	Thallium chloride TlCl	1*	4	U216	B
Thallium chloride TlCl 100 (45.4)	7791120	Thallium(I) chloride	1*	4	U216	B
Thallium (I) nitrate 100 (45.4)	10102451	Nitric acid, thallium (1+) salt	1*	4	U217	B
Thallium oxide Tl2O3 100 (45.4)	1314325	Thallic oxide	1*	4	P113	B
Thallium selenite 1000 (454)	12039520	Selenious acid, dithallium(1+) salt	1*	4	P114	C
Thallium (I) sulfate 100 (45.4)	7446186	Sulfuric acid, dithallium(1+) salt	1000	1,4	P115	B
	10031591					
2H-1,3,5-Thiadiazine-2-thione, tetrahydro-3,5-dimethyl- (Dazomet)	533744		1*	4	U366	
Thioacetamide 10 (4.54)	62555	Ethanethioamide	1*	4	U218	A
Thiodiphosphoric acid, tetraethyl ester 100 (45.4)	3689245	Tetraethyldithiopyrophosphate	1*	4	P109	B
Thiofanox 100 (45.4)	39196184	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O[(methylamino) carbonyl] oxime	1*	4	P045	B
Thioimidodicarbonic diamide [(H2N) C(S)] 2NH. 100 (45.4)	541537	Dithiobiuret	1*	4	P049	B
Thiomethanol 100 (45.4)	74931	Methanethiol	100	1,4	U153	B
		Methylmercaptan				
Thioperoxydicarbonic diamide, tetrabutyl (Tetrabutylthiuram disulfide)	1634022		1*	4	U402	
Thioperoxydicarbonic diamide, tetraethyl (Disulfiram)	97778		1*	4	U403	
Thioperoxydicarbonic diamide [(H2N) C(S)] 2S2, tetramethyl- 10 (4.54)	137268	Thiram	1*	4	U244	A
Thiophenol 100 (45.4)	108985	Benzenethiol	1*	4	P014	B
Thiosemicarbazide 100 (45.4)	79196	Hydrazinecarbothioamide	1*	4	P116	B
Thiourea 10 (4.54)	62566		1*	4	U219	A
Thiourea, (2-chlorophenyl)- 100 (45.4)	5344821	1-(o-Chlorophenyl)thiourea	1*	4	P026	B
Thiourea, 1-naphthalenyl- 100 (45.4)	86884	alpha-Naphthylthiourea	1*	4	P072	B
Thiourea, phenyl- 100 (45.4)	103855	Phenylthiourea	1*	4	P093	B
Thiram 10 (4.54)	137268	Thioperoxydicarbonic diamide	1*	4	U244	A

		[(H2N)C(S)] 2S2, tetramethyl-				
Titanium tetrachloride 1000 (454)	7550450		1*	3		C
Toluene 1000 (454)	108883	Benzene, methyl-	1000	1,2,3,4	U220	C
Toluenediamine 10 (4.54)	95807	Benzenediamine, ar-methyl-	1*	3,4	U221	A
	496720					
	823405	2,4-Toluene diamine				
	25376458					
2,4-Toluene diamine 1 0(4.54)	95807	Benzenediamine, ar-methyl	1*	3,4	U221	A
	496720					
	823405	Toluenediamine				
	25376458					
Toluene diisocyanate 100 (45.4)	584849	Benzene, 1,3-diisocyanatomethyl-	1*	3,4	U223	B
	91087					
	26471625					
2,4-Toluene diisocyanate 100 (45.4)	91087	Benzene, 1,3-diisocya	1*	3,4	U223	B
	584849	- natomethyl-				
	26471625	Toluene diisocyanate				
o-Toluidine 100 (45.4)	95534	Benzenamine, 2-methyl-	1*	3,4	U328	B
p-Toluidine 100 (45.4)	106490	Benzenamine, 4-methyl-	1*	4	U353	B
o-Toluidine hydrochloride 100 (45.4)	636215	Benzenamine, 2-methyl-	1*	4	U222	B
		hydrochloride				
Toxaphene 1 (0.454)	8001352	Camphene, octachloro-	1*	1,2,3,4	P123	X
		Chlorinated camphene				
2,4,5-TP acid 100 (45.4)	93721	Propionic acid, 2-(2,4,5-	100	1,4	U233	B
		trichlorophenoxy)-				
		Silvex (2,4,5-TP)				
2,4,5-TP esters 100 (45.4)	32534955		100	1		B
1H-1,2,4-Triazol-3-amine 10 (4.54)	61825	Amitrole	1*	4	U011	A
Trichlorfon 100 (45.4)	52686		1000	1		B
1,2,4-Trichlorobenzene 100 (45.4)	120821		1*	2,3		B
1,1,1-Trichloroethane 1000 (454)	71556	Ethane, 1,1,1-trichloro-	1*	2,3,4	U226	C
		Methyl chloroform				
1,1,2-Trichloroethane 100 (45.4)	79005	Ethane, 1,1,2-trichloro-	1*	2,3,4	U227	B
Trichloroethene 100 (45.4)	79016	Ethene, trichloro-	100C	1,2,3,4	U228	B
		Trichloroethylene				
Trichloroethylene 100 (45.4)	79016	Ethene, trichloro-	1000	1,2,3,4	U228	B
		Trichloroethene				
Trichloromethanesulfenyl chloride 100 (45.4)	594423	Methanesulfenyl chloride,	1*	4	P118	B
		trichloro-				
Trichloromonofluoromethane 5000 (2270)	75694	Methane, trichlorofluoro-	1*	4	U121	D
Trichlorophenol 10 (4.54)	25167822		10	1		A
2,3,4-Trichlorophenol	15950660					
2,3,5-Trichlorophenol	933788					
2,3,6-Trichlorophenol	933755					
2,4,5-Trichlorophenol 10 (4.54)	95954	Phenol, 2,4,5-trichloro-	10	1,3,4	U230	A
2,4,6-Trichlorophenol 10 (4.54)	88062	Phenol, 2,4,6-trichloro-	10	1,2,3,4	U231	A
3,4,5-Trichlorophenol	609198					
2,4,5-Trichlorophenol 10 (4.54)	95954	Phenol, 2,4,5-trichloro-	10*	1,4	U230	A
2,4,6-Trichlorophenol 10 (4.54)	88062	Phenol, 2,4,6-trichloro-	10	1,2,4	U231	A
Triethanolamine 1000 (454)	27323417		1000	1		C
dodecylbenzenesulfonate						
Triethylamine 5000 (2270)	121448		5000	1,3		D
Trifluralin 10 (4.54)	1582098		1*	3		A
Trimethylamine 100 (45.4)	75503		1000	1		B
2,2,4-Trimethylpentane 1000 (454)	540841		1*	3		C
1,3,5-Trinitrobenzene 10 (4.54)	99354	Benzene, 1,3,5-trinitro-	1*	4	U234	A
1,3,5-Trioxane, 2,4,6-trimethyl- 1000 (454)	123637	Paraldehyde	1*	4	U182	C
Tris(2,3-dibromopropyl) phosphate 10 (4.54)	126727	1-Propanol, 2,3-dibromo-,	1*	4	U235	A
		phosphate (3:1)				
Trypan blue 10 (4.54)	72571	2,7-Naphthalenedisulfonic acid, 3,	1*	4	U236	A

		3,3'-3,3'-dimethyl-(1,1'-biphenyl)-					
		4,4'-diyl)-bis(azo)]bis(5-amino-4					
		-hydroxy)-tetrasodium salt					
Unlisted Hazardous Wastes 100 (45.4)	N.A.		1*	4	D002	B
Characteristic of Corrosivity						
Unlisted Hazardous Wastes	N.A.		1*	4		
Characteristics:						
Characteristic of Toxicity:						
Arsenic (D004)	N.A.		*1	4	D004	X
1 (0.454)	N.A.		*1	4	D005	C
Barium (D005) 1,000 (454)	N.A.		1000	1, 2, 3,	D018	A
Benzene (D018) 10 (4.54)				4		
Cadmium (D006)	N.A.		*1	4	D006	A
10 (4.54)	N.A.		5,000	1, 2, 4	D019	A
Carbon tetrachloride (D019) 10 (4.54)	N.A.		1	1, 2, 4	D020	X
Chlordane (D020) 1 (0.454)	N.A.		100	1, 2, 4	D021	B
Chlorobenzene (D021) 100 (45.4)	N.A.		5,000	1, 2, 4	D022	A
Chloroform (D022) 10 (4.54)	N.A.		*1	4	D007	A
Chromium (D007) 10 (4.54)	N.A.		1*	4	D023	B
o-Cresol (D023) 100 (45.4)	N.A.		1*	4	D024	B
m-Cresol (D024) 100 (45.4)	N.A.		1*	4	D025	B
p-Cresol (D025) 100 (45.4)	N.A.		1*	4	D026	B
Cresol (D026) 100 (45.4)	N.A.		100	1, 4	D016	B
2,4-D (D016) 100 (45.4)	N.A.		100	1, 2, 4	D027	B
1,4-Dichlorobenzene (D027) 100 (45.4)	N.A.		5,000	1, 2, 4	D028	B
1,2-Dichloroethane (D028) 100 (45.4)	N.A.		5,000	1, 2, 4	D029	B
1,1-Dichloroethylene (D029) 100 (45.4)	N.A.		1,000	1, 2, 4	D030	A
2,4-Dinitrotoluene (D030) 10 (4.54)	N.A.		1	1, 4	D012	X
Endrin (D012) 1 (0.454)	N.A.		1	1, 2, 4	D031	X
Heptachlor (and epoxide) (D031) 1 (0.454)	N.A.		*1	2, 4	D032	A
Hexachlorobenzene (D032) 10 (4.54)	N.A.		*1	2, 4	D033	X
Hexachlorobutadiene (D033) 1 (0.454)	N.A.		*1	2, 4	D034	B
Hexachloroethane (D034) 100 (45.4)	N.A.		*1	4	D008	A
Lead (D008) 10 (4.54)	N.A.		1	1, 4	D013	X
Lindane (D013) 1 (0.454)	N.A.		*1	4	D009	X
Mercury (D009) 1 (0.454)	N.A.		1	1, 4	D014	X
Methoxychlor (D014) 1 (0.454)	N.A.		*1	4	D035	D
Methyl ethyl ketone (D035) 5,000 (2270)	N.A.		1,000	1, 2, 4	D036	C
Nitrobenzene (D036) 1,000 (454)	N.A.		10	1, 2, 4	D037	A
Pentachlorophenol (D037) 10 (4.54)	N.A.		*1	4	D038	C
Pyridine (D038) 1,000 (454)	N.A.		*1	4	D010	A
Selenium (D010) 10 (4.54)	N.A.		*1	4	D011	X
Silver (D011) 1 (0.454)	N.A.		*1	2, 4	D039	B
Tetrachloroethylene (D039) 100 (45.4)	N.A.		1	1, 4	D015	X
Toxaphene (D015) 1 (0.454)	N.A.		1000	1, 2, 4	D040	B
Trichloroethylene (D040) 100 (45.4)	N.A.		10	1, 4	D041	A
2,4,5-Trichlorophenol (D041) 10 (4.54)	N.A.		10	1, 2, 4	D042	A
2,4,6-Trichlorophenol (D042) 10 (4.54)	N.A.		100	1, 4	D017	B
2,4,5-TP (D017) 100 (45.4)	N.A.		*1	2, 3, 4	D043	X
Vinyl chloride (D043) 1 (0.454)	N.A.		1*	4	D001	B
Unlisted Hazardous Wastes 100 (45.4)						
Characteristic of Ignitability						
Unlisted Hazardous Wastes 100 (45.4)	N.A.		1*	4	D003	B
Characteristic of Reactivity						
Uracil mustard 10 (4.54)	66751	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-	1*	4	U237	A
Uranyl acetate 100 (45.4)	541093		5000	1		B
Uranyl nitrate 100 (45.4)	10102064		5000	1		B
	36478769					
Urea, N-ethyl-N-nitroso- 1 (0.454)	759739	N-Nitroso-N-ethylurea	1*	4	U176	X
Urea, N-methyl-N-nitroso- 1 (0.454)	684935	N-Nitroso-N-methylurea	1*	3,4	U177	X

Urethane	51796	Carbamic acid, ethyl ester	1*	3,4	U238	B
100 (45.4)		Ethyl carbamate				
Vanadic acid, ammonium salt	7803556	Ammonium vanadate	1*	4	P119	C
1000 (454)						
Vanadium oxide V205	1314621	Vanadium pentoxide	1000	1,4	P120	C
1000 (454)						
Vanadium pentoxide	1314621	Vanadium oxide V205	1000	1,4	P120	C
1000 (454)						
Vanadyl sulfate	27774136		1000	1		C
1000 (454)						
Vinyl chloride	75014	Ethene, chloro-	1*	2,3,4	U043	X
1 (0.454)						
Vinyl acetate	108054	Vinyl acetate monomer	1000	1,3		D
5000 (2270)						
Vinyl acetate monomer	108054	Vinyl acetate	1000	1,3		D
5000 (2270)						
Vinylamine, N-methyl-N-nitroso-	4549400	N-Nitrosomethylvinylamine	1*	4	P084	A
10 (4.54)						
Vinyl bromide	593602		1*	3		B
100 (45.4)						
Vinylidene chloride	75354	1,1-Dichloroethylene	5000	1,2,3,4	U078	B
100 (45.4)		Ethene, 1,1-dichloro-				
Warfarin, & salts, when present at	81812	2H-1-Benzopyran-2-one, 4-hydroxy-3	1*	4	P001	B
100 (45.4)		-(3-oxo-1-phenyl-butyl)-, & salts,				
concentrations greater than 0.3%		when present at concentrations				
		greater than 0.3%				
Xylene	1330207	Benzene, dimethyl-	1000	1,4	U239	B
100 (45.4)		Xylene (mixed)				
		Xylenes (isomers and mixture)				
m-Xylene	108383	Benzene, m-dimethyl-	1*	3		C
1000 (454)						
o-Xylene	95476	Benzene, o-dimethyl-	1*	3		C
1000 (454)						
p-Xylene	106423	Benzene, p-dimethyl	1*	3		B
100 (45.4)						
Xylene (mixed)	1330207	Benzene, dimethyl-	1000	1,4	U239	B
100 (45.4)		Xylene				
		Xylenes (isomers and mixture)				
Xylenes (isomers and mixture	1330207	Benzene, dimethyl-	1000	1,3,4	U239	B
100 (45.4)		Xylene				
		Xylene (mixed)				
Xylenol	1300716		1000	1		C
1000 (454)						
Yohimban-16-carboxylic acid,11,17-	50555	Reserpine	1*	4	U200	D
5000 (2270)						
dimethoxy-18-[(3,4,5-						
trimethoxybenzoyl)oxy]-, methyl						
ester (3beta,16beta,17alpha,						
18beta, 20alpha)-						
Zinc **	7440666		1*	2		C
1000 (454)						
ZINC AND COMPOUNDS **	N.A.		1*	2		
Zinc acetate	557346		1000	1		C
1000 (454)						
Zinc ammonium chloride	52628258		5000	1		C
1000 (454)						
	14639975					
	14639986					
Zinc, bis(dimethylcarbomodithio	137304		1*	4	P205	
ato-S,S')-, (Ziram)						
Zinc, bis(diethylcarbamodithio	14324551		1*	4	U407	
ato-S,S')-(Ethyl Ziram)						
Zinc borate	1332076		1000	1		C
1000 (454)						
Zinc bromide	7699458		5000	1		C
1000 (454)						
Zinc carbonate	3486359		1000	1		C
1000 (454)						
Zinc chloride	7646857		5000	1		C
1000 (454)						
Zinc cyanide	557211	Zinc cyanide Zn(CN)2	10	1,4	P121	A
10 (4.54)						
Zinc cyanide Zn(CN)2	557211	Zinc cyanide	10	1,4	P121	A
10 (4.54)						
Zinc fluoride	7783495		1000	1		C
1000 (454)						
Zinc formate	557415		1000	1		C
1000 (454)						
Zinc hydrosulfite	7779864		1000	1		C
1000 (454)						
Zinc nitrate	7779886		5000	1		C
1000 (454)						
Zinc phenolsulfonate	127822		5000	1		D
5000 (2270)						
Zinc phosphide	1314847	Zinc phosphide Zn3P2, when present	1000	1,4	P122	B
100 (45.4)		at concentrations greater than 10				
		%				
Zinc phosphide Zn3P2, when present	1314847	Zinc phosphide	1000	1,4	P122	B
100 (45.4)						

at concentrations greater than 10 %						
Zinc silicofluoride 5000 (2270)	16871719		5000	1		D
Zinc sulfate 1000 (454)	7733020		1000	1		C
Zirconium nitrate 5000 (2270)	13746899		5000	1		D
Zirconium potassium fluoride 1000 (454)	16923958		5000	1		C
Zirconium sulfate 5000 (2270)	14644612		5000	1		D
Zirconium tetrachloride 5000 (2270)	10026116		5000	1		D
F001 10 (4.54)			1*	4	F001	A
The following spent halogenated solvents used in degreasing: all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.						
(a) Tetrachloroethylene 100 (45.4)	127184		1*	2.4	U210	B
(b) Trichloroethylene 100 (45.4)	79016		1000	1,2,4	U228	B
(c) Methylene chloride 1000 (454)	75092		1*	2,4	U080	C
(d) 1,1,1-Trichloroethane 1000 (454)	71556		1*	2,4	U226	C
(e) Carbon tetrachloride 10 (4.54)	56235		5000	1,2,4	U211	A
(f) Chlorinated fluorocarbons 5000 (2270)	N.A.					D
F002 10 (4.54)			1*	4	F002	A
The following spent halogenated solvents: all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.						
(a) Tetrachloroethylene 100 (45.4)	127184		1*	2,4	U210	B
(b) Methylene chloride 1000 (454)	75092		1*	2,4	U080	C
(c) Trichloroethylene 100 (45.4)	79016		1000	1,2,4	U228	B
(d) 1,1,1-Trichloroethane 1000 (454)	71556		1*	2,4	U226	C
(e) Chlorobenzene 100 (45.4)	108907		100	1,2,4	U037	B
(f) 1,1,2-Trichloro-1,2,2-trifluoroethane 5000 (2270)	76131					D
(g) o-Dichlorobenzene 100 (45.4)	95501		100	1,2,4	U070	B
(h) Trichlorofluoromethane 5000 (2270)	75694		1*	4	U121	D
(i) 1,1,2-Trichloroethane 100 (45.4)	79005		1*	2,4	U227	B
F003 100 (45.4)			1*	4	F003	B
The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:						
(a) Xylene 1000 (454)	1330207					C
(b) Acetone 5000 (2270)	67641					D
(c) Ethyl acetate 5000 (2270)	141786					D
(d) Ethylbenzene 1000 (454)	100414					C
(e) Ethyl ether 100 (45.4)	60297					B

(f) Methyl isobutyl ketone 5000 (2270)	108101					D
(g) n-Butyl alcohol 5000 (2270)	71363					D
(h) Cyclohexanone 5000 (2270)	108941					D
(i) Methanol 5000 (2270)	67561					D
F004 100(45.4)			1*	4	F004	B
The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:						
(a) Cresols/ Cresylic acid 100(45.4)	1319773		1000	1,3,4	U052	B
(b) Nitrobenzene 1000(454)	98953		1*	4	F005	B
F005 100 (45.4)						
The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:						
(a) Toluene 1000 (454)	108883		1000	1,2,4	U220	C
(b) Methyl ethyl ketone 5000 (2270)	78933		1*	4	U159	D
(c) Carbon disulfide 100 (45.4)	75150		5000	1,4	P022	B
(d) Isobutanol 5000 (2270)	78831		1*	4	U140	D
(e) Pyridine 1000 (454)	110861		1*	4	U196	C
F006 10 (4.54)			1*	4	F006	A
Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum, (2) tin plating on carbon steel, (3) zinc plating (segregated basis) on carbon steel, (4) aluminum or zinc-aluminum plating on carbon steel, (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel, and (6) chemical etching and milling of aluminum.						
F007 10 (4.54)			1*	4	F007	A
Spent cyanide plating bath solutions from electroplating operations.						
F008 10 (4.54)			1*	4	F008	A
Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.						
F009 10 (4.54)			1*	4	F009	A
Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.						
F010 10 (4.54)			1*	4	F010	A
Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.						
F011 10 (4.54)			1*	4	F011	A
Spent cyanide solution from salt bath pot cleaning from metal heat						

treating operations.					
F012	10 (4.54)	1*	4	F012	A
Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.					
F019	10 (4.54)	1	4	F019	A
Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phospnating in aluminum can washing when such phosphating is an exclusive conversion coating process					
F020	1 (0.454)	1*	4	F020	X
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri-or-tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol.)					
F021	1 (0.454)	1*	4	F021	X
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.					
F022	1 (0.454)	1*	4	F022	X
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.					
F023	1 (0.454)	1*	4	F023	X
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and					

tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5-tri-chlorophenol.)					
F024	1 (0.454)	1*	4	F024	X
Wastes, including but not limited to distillation residues, heavy ends, tars, and reactor cleanout wastes, from the production of chlorinated aliphatic hydrocarbons, having carbon content from one to five, utilizing free radical catalyzed processes. (This listing does not include light ends, spent filters and filter aids, spent dessicants (sic), wastewater, wastewater treatment sludges, spent catalysts, and wastes listed in Section 261.32)					
F025	1 (0.454)	1*	4	F025	X
Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.					
F026	1 (0.454)	1*	4	F026	X
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.					
F027	1 (0.454)	1*	4	F027	X
Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-tri-chlorophenol as the sole					

component.)					
F028		1*	4	F028	X
1 (0.454)					
Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.					
F032		1**	4	F032	
X 1 (0.454)					
Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with 261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and or pentachlorophenol.					
F034		1**	4	F034	
X 1 (0.454)					
Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use cresote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol					
F035		1*	4	F035	
X 1 (0.454)					
Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated					

at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.						
F037 (10 454) Petroleum refinery primary oil water/ solids separation sludge-Any sludge generated from the gravitational separation of oil water solids during the storage or treatment of process wastewaters from petroleum refineries Such sludges include, but are not limited to, those generated in oil water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in 261.31(b)(2) including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units; and K051 wastes are not included in this				1*	4	F037	X

listing						
F038 (0.454)			1*	4	F038	X
Petroleum refinery secondary (emulsified) oil/ water/solids separation sludge- Any sludge and/or float generated from the physical and/or chemical separation of oil watersolids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAFunits. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from once-through non-contact cooling waters segregated for treatment from other process or oil cooling wastes, sludges and floats generated in aggressive biological treatment units as defined in 261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing.						
K001 (0.454)			1*	5	K001	X
Bottom sediment sludge from the						

treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.					
K002 Wastewater treatment sludge from the production of chrome yellow and orange pigments.	10 (4.54)	1*	4	K002	A
K003 Wastewater treatment sludge from the production of molybdate orange pigments.	10 (4.54)	1*	4	K003	A
K004 Wastewater treatment sludge from the production of zinc yellow pigments.	10 (4.54)	1*	4	K004	A
K005 Wastewater treatment sludge from the production of chrome green pigments.	10 (4.54)	1*	4	K005	A
K006 Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).	10 (4.54)	1*	4	K006	A
K007 Wastewater treatment sludge from the production of iron blue pigments.	10 (4.54)	1*	4	K007	A
K008 Oven residue from the production of chrome oxide green pigments.	10 (4.54)	1*	4	K008	A
K009 Distillation bottoms from the production of acetaldehyde from ethylene.	10 (4.54)	1*	4	K009	A
K010 Distillation side cuts from the production of acetaldehyde from ethylene.	10 (4.54)	1*	4	K010	A
K011 Bottom stream from the wastewater stripper in the production of acrylonitrile.	10 (4.54)	1*	4	K011	A
K013 Bottom stream from the acetonitrile column in the production of acrylonitrile.	10 (4.54)	1*	4	K013	A
K014 Bottoms from the acetonitrile purification column in the production of acrylonitrile	5000 (2270)	1*	4	K014	D
K015 Still bottoms from the distillation of benzyl chloride.	10 (4.54)	1*	4	K015	A
K016 Heavy ends or distillation residues from the production of carbon tetrachloride	1 (0.454)	1*	4	K016	X
K017	10 (4.54)	1*	4	K017	A

Heavy ends (still bottoms) from the purification column in the production of epi-chlorohydrin.					
K018	1 (0.454)	1*	4	K018	X
Heavy ends from the fractionation column in ethyl chloride production.					
K019	1 (0.454)	1*	4	K019	X
Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.					
K020	1 (0.454)	1*	4	K020	X
Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.					
K021	10 (4.54)	1*	4	K021	A
Aqueous spent antimony catalyst waste from fluoromethanes production					
K022	1 (0.454)	1*	4	K022	X
Distillation bottom tars from the production of phenol/acetone from cumene.					
K023	5000 (2270)	1*	4	K023	D
Distillation light ends from the production of phthalic anhydride from naphthalene.					
K024	5000 (2270)	1*	4	K024	D
Distillation bottoms from the production of phthalic anhydride from naphthalene.					
K025	10 (4.54)	1*	4	K025	A
Distillation bottoms from the production of nitrobenzene by the nitration of benzene.					
K026	1000 (454)	1*	4	K026	C
Stripping still tails from the production of methyl ethyl pyridines					
K027	10 (4.54)	1*	4	K027	A
Centrifuge and distillation residues from toluene diisocyanate production					
K028	1 (0.454)	1*	4	K028	X
Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane					
K029	1 (0.454)	1*	4	K029	X
Waste from the product steam stripper in the production of 1,1,1-trichloroethane					
K030	1 (0.454)	1*	4	K030	X
Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.					
K031	1 (0.454)	1*	4	K031	X
By-product salts generated in the production of MSMA and cacodylic					

+ acid				
+K032	1*	4	K032	A
+Wastewater treatment sludge from				
+ the production of chlordane.				
+K033	1*	4	K033	A
+Wastewater and scrub water from				
+ the chlorination of				
+ cyclopentadiene in the production				
+ of chlordane				
+K034	1*	4	K034	A
+Filter solids from the filtration				
+ of hexachlorocyclopentadiene in				
+ the production of chlordane.				
+K035	1*	4	K035	X
+Wastewater treatment sludges				
+ generated in the production of				
+ creosote				
+K036	1*	4	K036	X
+Still bottoms from toluene				
+ reclamation distillation in the				
+ production of disulfoton				
+K037	1*	4	K037	X
+Wastewater treatment sludges from				
+ the production of disulfoton.				
+K038	1*	4	K038	A
+Wastewater from the washing and				
+ stripping of phorate production.				
+K039	1*	4	K039	A
+Filter cake from the filtration of				
+ diethylphosphorodithioic acid in				
+ the production of phorate.				
+K040	1*	4	K040	A
+Wastewater treatment sludge from				
+ the production of phorate.				
+K041	1*	4	K041	X
+Wastewater treatment sludge from				
+ the production of toxaphene.				
+K042	1*	4	K042	A
+Heavy ends or distillation				
+ residues from the distillation of				
+ tetrachlorobenzene in the				
+ production of 2,4,5-T				
+K043	1*	4	K043	A
+2,6-Dichlorophenol waste from the				
+ production of 2,4-D				
+K044	1*	4	K044	A
+Wastewater treatment sludges from				
+ the manufacturing and processing				
+ of explosives				
+K045	1*	4	K045	A
+Spent carbon from the treatment of				
+ wastewater containing explosives.				
+ K046	1*	4	K046	A
+Wastewater treatment sludges from				
+ the manufacturing, formulation				
+ and loading of lead-based				
+ initiating compounds.				
+K047	1*	4	K047	A
+Pink/red water from TNT operations				
+ K048	1*	4	K048	

Dissolved air flotation (DAF) float from the petroleum refining industry K049 10 (4.54)	1*	4	K049	A
Slop oil emulsion solids from the petroleum refining industry. K050 10 (4.54)	1*	4	K050	A
Heat exchanger bundle cleaning sludge from the petroleum refining industry K051	1*	4	K051	
API separator sludge from the petroleum refining industry K052 10 (4.54)	1*	4	K052	A
Tank bottoms (leaded) from the petroleum refining industry K060 1 (0.454)	1*	4	K060	X
Ammonia still lime sludge from coking operations. K061 10 (4.54)	1*	4	K061	A
Emission control dust sludge from the primary production of steel in electric furnaces. K062 10 (4.54)	1*	4	K062	A
Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332) K064 10 (4.54)	1*	4	K064	A
Acid plant blowdown slurry/sludge resulting from thickening of blowdown slurry from primary copper production. K065 10 (4.54)	1*	4	K065	A
Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities. K066 10 (4.54)	1*	4	K066	A
Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production. K069 10 (4.54)	1*	4	K069	A
Emission control dust/sludge from secondary lead smelting. K071 1 (0.454)	1*	4	K071	X
Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used. K073 10 (4.54)	1*	4	K073	A
Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production. K083 100 (45.4)	1*	4	K083	B
Distillation bottoms from aniline				

extraction.					
K084	1 (0.454)	1*	4	K084	X
Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.					
K085	10 (4.54)	1*	4	K085	A
Distillation or fractionation column bottoms from the production of chlorobenzenes.					
K086	10 (4.54)	1*	4	K086	A
Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.					
K087	100 (45.4)	1*	4	K087	B
Decanter tank tar sludge from coking operations.					
K088	10 (4.54)	1*	4	K088	A
Spent potliners from primary aluminum reduction					
K090	10 (4.54)	1*	4	K090	A
Emission control dust or sludge from ferrochromiumsilicon production					
K091	10 (4.54)	1*	4	K091	A
Emission control dust or sludge from ferrochromium production					
K093	5000 (2270)	1*	4	K093	D
Distillation light ends from the production of phthalic anhydride from ortho-xylene.					
K094	5000 (2270)	1*	4	K094	D
Distillation bottoms from the production of phthalic anhydride from ortho-xylene.					
K095	100 (45.4)	1*	4	K095	B
Distillation bottoms from the production of 1,1,1-trichloroethane.					
K096	100 (45.4)	1*	4	K096	B
Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane					
K097	1 (0.454)	1*	4	K097	X
Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.					
K098	1 (0.454)	1*	4	K098	X
Untreated process wastewater from the production of toxaphene.					

K099 Untreated wastewater from the production of 2,4-D.	10 (4.54)	1*	4	K099	A
K100 Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	10 (4.54)	1*	4	K100	A
K101 Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	1 (0.454)	1*	4	K101	X
K102 Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	1 (0.454)	1*	4	K102	X
K103 Process residues from aniline extraction from the production of aniline.	100 (45.4)	1*	4	K103	B
K104 Combined wastewater streams generated from nitrobenzene/aniline production.	10 (4.54)	1*	4	K104	A
K105 Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	10 (4.54)	1*	4	K105	A
K106 Wastewater treatment sludge from the mercury cell process in chlorine production.	1 (0.454)	1*	4	K106	X
K107 Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines.	10 (4.54)	10	4	K107	X
K108 Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	10 (4.54)	10	4	K108	X
K109 Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	10 (4.54)	10	4	K109	X
K110 Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from	10 (4.54)	10	4	K110	X

carboxylic acid hydrazides.					
K111	10 (4.54)	1*	4	K111	A
Product washwaters from the production of dinitrotoluene via nitration of toluene.					
K112	10 (4.54)	1*	4	K112	A
Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.					
K113	10 (4.54)	1*	4	K113	A
Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.					
K114	10 (4.54)	1*	4	K114	A
Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene					
K115	10 (4.54)	1*	4	K115	A
Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.					
K116	10 (4.54)	1*	4	K116	A
Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine					
K117	1 (0.454)	1*	4	K117	X
Wastewater from the reaction vent gas scrubber in the production of ethylene bromide via bromination of ethene.					
K118	1 (0.454)	1*	4	K118	X
Spent absorbent solids from purification of ethylene dibromide in the production of ethylene dibromide.					
K123	10 (4.54)	1*	4	K123	A
Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salts.					
K124	10 (4.54)	1*	4	K124	A
Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts					
K125	10 (4.54)	1*	4	K125	A
Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts					
K126	10 (4.54)	1*	4	K126	A

Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.						
K131 100 (45.4)		100		4	K131	X
Wastewater from the reactor and spent sulfuric acid from the acid dryer in the production of methyl bromide.						
K132 1000 (454)		1000		4	K132	X
Spent absorbent and wastewater solids from the production of methyl bromide.						
K136 1 (0.454)		1*		4	K136	X
Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.						
K141 1 (0.454)		1*		4	K141	X
Process related from the recovery of coal tar, including, but not limited to, tar collecting sump residues from the production of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations.)						
K142 1 (0.454)		1*		4	K142	X
Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.						
K143 1 (0.454)		1*		4	K143	X
Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.						
K144 1 (0.454)		1*		4	K144	X
Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.						
K145 1 (0.454)		1*		4	K145	X
Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.						
K147 1 (0.454)		1*		4	K147	X
Tar storage tank residues from coal tar refining.						
K148 1 (0.454)		1*		4	K148	X

Residues from coal tar distillation, including, but not limited to, still bottoms.					
K149 10 (4.54) Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (This waste does not include still bottoms from the distillation of benzyl chloride.)		1*	4	K149	A
K150 10 (4.54) Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups		1*	4	K150	A
K151 10 (4.54) Wastewater treatment sludges, excluding neutralization		1*	4	K151	A

and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups				
K156 Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes.		1*	4	K156
K157 Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes (This listing does not include sludges derived from the treatment of these wastewaters)		1*	4	K157
K158 Bag house dusts and filter separation solids from the production of carbamates and carbamoyl oximes		1*	4	K158
K159 Organics from the treatment of thiocarbamate wastes.		1*	4	K159
K160 Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarbamates and solids from the treatment of thiocarbamate wastes		1*	4	K160
K161 Purification solids (including filtration, evaporation, and centrifugation solids, bag house dust, and floor sweepings from the production of dithiocarbamate acids and their salts (This listing does not include K125 or K126).		1*	4	K161

* a Indicates the statutory source as defined by 1, 2, 3, and 4 below.
** No reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds

- 100 micrometers (0.004 inches).
- *** The RQ for asbestos is limited to friable forms only.
- 1-indicates that the statutory source for designation of this hazardous substance under CERCLA is CWA Section 311(b)(4).
- 2-indicates that the statutory source for designation of this hazardous substance under CERCLA is CWA Section 307(a).
- 3-indicates that the statutory source for designation of this hazardous substance under CERCLA is CAA Section 112.
- 4-Indicates that the statutory source for designation of this hazardous substance under CERCLA is RCRA Section 3001.
- 1*-Indicates that the 1-pound RQ is a CERCLA statutory RQ.
- s-Indicates that the RQ is subject to change when the assessment of potential carcinogenicity is completed.
- ss-The Agency may adjust the statutory RQ for this hazardous substance in a future rulemaking; until then the statutory RQ applies
- b-The adjusted RQs for radionuclides may be found in Appendix B to this table.
- ***-Indicates that no RQ is being assigned to the generic or broad class.
- (a)Benzene was already a CERCLA hazardous substance prior to the CAA Amendments of 1990 and received an adjusted 10-pound RQ based
- on potential carcinogenicity in an August 14, 1989, final rule (54 FR 33418). The CAA Amendments specify that " benzene (including
- benzene from gasoline)" is a hazardous air pollutant and, thus, a CERCLA hazardous substance
- (b)The CAA Amendments of 1990 list DDE (3547-04-4) as a CAA hazardous air pollutant. The CAS number, 3547-04-4, is for the chemical,
- p,p'-dichlorodiphenylethane, DDE or p,p'-dichlorodiphenyldichloroethylene, CAS number 72-55-9, is already listed in Table 302.4
- with a final RQ of 1 pound. The substance identified by the CAS number 3547-04-4 has been evaluated and listed as DDE to be
- consistent with the CAA seciton 112 listing, as amended.
- (c)Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral
- derived fibers) of average diameter 1 micrometer or less.
- (d)Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH2CH2)N-OR' where
- n=1, 2, or 3
- R=alkyl or aryl groups
- R'=R, H, or groups which, when removed, yield glycol ethers with the structure: R-(OCH2CH2)N-OH. Polymers are excluded from the
- glycol category.
- (e)Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 oC.
-

[Amended 60 FR 30926, July 12, 1995; 60 FR 7824, Aug. 9, 1995]

Appendix M
Hazardous Substances Reporting

Reporting procedures for hazardous substances are already regulated under a number of federal and state laws including: Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); Superfund Amendments and Reauthorization Act (SARA); Resource Conservation and Recovery Act (RCRA); and multiple bills codified under Division 20 of the California Health and Safety Code. These reporting requirements are too numerous to list here, but have generally been implemented for many years by local hazardous materials response teams or "Administering Agencies"--generally a local fire department. In some areas, the Administering Agency delegates some of the reporting activities (generally the local reporting) to the agency that has jurisdiction over the release. In this case, Permittees should designate an individual/department to report hazardous substances releases.

If the release of a hazardous substance equals or exceeds the reportable quantity in a 24-hour period, the Administering Agency will notify the California Office of Emergency Services (OES) and the National Response Center. There are also many other agencies that could potentially be contacted depending on the location and nature of the release.

Hazardous substances releases, if they enter the storm drain system, are also illicit discharges, and must be documented for the Stormwater Program in the same manner as all other illicit discharges, as described in Section 2. Permittees should coordinate with Administering Agencies to ensure all necessary information is forwarded to a designated individual/department for incorporation into illicit discharge records.

The following are agencies that may be contacted:

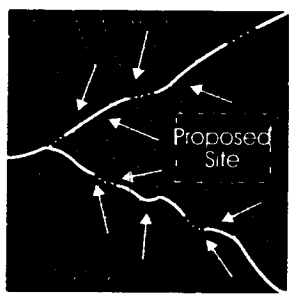
Agency	Phone Number
California Office of Emergency Services	(800) 852-7550
National Response Center	(800) 424-8802
Local	
Police agency	Various
Schools	Various
Flood Department	Various
Road Department	Various
County Environmental Health Department	(213) 881-4000
County Agricultural Commissioner	(626) 575-5471
County Air Quality Management District	(909) 396-2000
State	
Fish and Game	(562) 590-5132
Highway Patrol	(213) 664-0695
Caltrans	(213) 897-3656
California Environmental Protection Agency	
Department of Toxic Substances Control	(800) 698-6942
Regional Water Quality Control Board	(213) 266-7500
Federal	
U.S. Coast Guard	(510) 437-3196

Additional agencies such as U.S. Fish and Wildlife, Department of Oil and Gas, and FEMA may also be notified, but these tasks will be carried out by OES or the National Response Center.

R0000765

Stormwater Quality Management Plan (SQMP)

Development Planning Program



URS Corporation
Camp Dresser & McKee Inc.
Consensus Planning
Psomas and Associates
Larry Walker Associates
Geoff Brosseau

FEBRUARY 2001

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ES.1 Overview

On July 15, 1996, the Los Angeles Regional Water Quality Control Board (Regional Board) issued a municipal storm water National Pollutant Discharge Elimination System (NPDES) permit (Permit) to the County of Los Angeles and 85 cities (Permittees). This Permit contains a requirement for Permittees to develop and implement within their jurisdiction a Storm Water Management Program (SWMP). The Countywide Storm Water Management Plan (CSWMP) is the unified plan consisting of model programs developed under the Storm Water Management Program requirements as established by the Permit. These model programs are aimed to reduce pollutant discharges to the maximum extent practicable for attaining water quality objectives and protecting beneficial uses of receiving waters in Los Angeles County.

In the 2001 NPDES permit, the CSWMP has been renamed to the Stormwater Quality Management Plan (SQMP). For the remainder of this document, the acronym SQMP is used.

The Permit required the Permittees to develop a model program to address each of the following:

- Illicit Connections and Illicit Discharges,
- Development Planning,
- Development Construction,
- Public Agency Activities, and
- Public Information and Participation.

Each model program is a "stand-alone" document that describes one of these five elements of the SQMP. Record-keeping and reporting requirements are also associated with each model program. This Executive Summary describes the primary requirements of each of the model programs comprising the SQMP. The remainder of this document is the SQMP element referred to as the Development Planning Program, which was approved by the Regional Board in February 1999.

ES.2 Model Illicit Connections / Illicit Discharge Elimination Program

Part 2.II of the Permit contains requirements specifically for the identification and elimination of illicit connections and illicit discharges to the municipal separate storm sewer system (MS4), generally referred to in this document as "storm drain system." The Permit requirements include five components for the

five components for the elimination of illicit connections and illicit discharges. Those five components are:

- Illicit connection elimination,
- Illicit discharge elimination,
- Best management practices (BMPs) program for designated non-storm water discharges,
- Public reporting of illicit discharge and disposal practices, and
- Hazardous waste reporting program.

Illicit Connection Elimination

The goal of this component is to detect and eliminate illicit connections in order to reduce pollutants discharged through such connections to the maximum extent practical. The objectives are to:

- Conduct storm drain system field screening for illicit connections during scheduled infrastructure maintenance by maintenance personnel.
- Determine the source and nature of suspected illicit discharges by investigating connections to the storm drain system.

The model program also describes a methodology that Pemittees may use in prioritizing areas of their jurisdiction for investigation. Once the illicit connection/discharge has been investigated, one of the following actions must occur:

- If the discharge is determined to consist only of exempted non-storm water, the connection will be allowed to remain and will no longer be considered an illicit connection. Permittees may elect to issue a permit for the connection or allow the connection to remain if information on the connection is documented; or
- The discharger will be required to obtain an NPDES permit; or
- The connection will be terminated through voluntary action or enforcement proceedings.

Permittees may prioritize potential problem areas for detection and investigation efforts under this program component, using the methodology defined in this model program.

Illicit Discharge Elimination

The goal of this component is to detect and eliminate illicit discharges from entering the storm drain system to reduce pollutants from such discharge to the maximum extent practicable. The objectives are to:

- Investigate, contain, and clean up incidental spills reported by the public, other agencies or observed by Permittee field staff during the course of their normal daily activities,
- Eliminate through voluntary termination or enforcement action prohibited non-storm water discharges to the storm drain system, and
- Investigate to determine the nature and source of the discharge and eliminate through voluntary termination or enforcement action suspected prohibited non-storm discharges in the storm drain system.

BMPs for Designated Non-Storm Water Discharges

The Permit required the City of Los Angeles to conduct a study on pollutants entering storm drains from street and sidewalk washing operation to:

(i.) Characterize discharges from municipal street washing and sidewalk washing

(ii.) Assess the impacts of such activities and

(iii.) Recommend appropriate BMPs to control any adverse impacts.

The City of Los Angeles completed the study and prepared a report entitled, "A Study of Pollutants Entering Storm Drains from Street and Sidewalk Washing Operations in Los Angeles, California." The Regional Board approved recommended BMPs for street and sidewalk washing activities.

Public Reporting

The goal of this component is to promote, publicize and facilitate public reporting of illicit discharges and illicit disposal practices. Permittees must implement a system for complainant documentation and a follow up response for calls received from the public regarding potential illicit discharges and illicit disposal practices.

Reporting Hazardous Substances Entering the Storm Drain System

The goal of this component is to facilitate appropriate reporting of hazardous substances entering the storm drain system as a result of an illicit discharge. The Permittees must implement a

reporting program to document quantities of hazardous substances entering the storm drain system.

ES.3 MODEL DEVELOPMENT PLANNING PROGRAM

"Development" Projects encompass those projects that are subject to a planning and permitting review process by a Permittee. A "Development" Project may be new development, redevelopment, renovation, remodeling, rehabilitation, infill, or other terms that may be used in a Permittee's ordinances and/or building code. The planning and design of public facilities have similar requirements described in the Model Public Agency Activities Program, another component of the Countywide Storm Water Management Plan.

The fundamental concept of this program component is to identify development that may significantly impact storm water quality and to then to include permanent BMPs in the project's design. Development projects that may significantly impact storm water quality are Planning "Priority" Projects. Other projects are deemed "Exempt" from these program requirements.

Each Permittee will implement a development-planning program that includes the following components:

- System for determining the appropriate category (Priority or Exempt) for a Development Project;
- Recommended list of BMPs to be considered, and as appropriate, implemented for Development Projects;
- Process to ensure that Planning Priority Projects incorporate the Standard Urban Storm Water Mitigation Plans using the recommended list of BMPs;
- Guidelines for California Environmental Quality Act (CEQA) compliance;
- Guidelines for the revision of General Plan elements to include watershed and storm water quality management considerations, when General Plan elements are being significantly rewritten; and
- Developer information program that provides general guidance on the Permittee's development planning program, and specific guidance on BMP selection and the Standard Urban Storm Water Mitigation Plans.

A checklist and flowchart are included in the Model Development Planning Program to assist Permittees in determining whether a project is Priority or Exempt.

ES.4 MODEL DEVELOPMENT CONSTRUCTION PROGRAM

Permittees must also implement a program to manage storm water and urban runoff associated with construction activities within their jurisdictions. The Model Development Construction Program addresses:

- Development and implementation of construction site BMPs;
- Implementation of procedures to verify Notice of Intent (NOI) filing with the State Water Resources Control Board and completion of storm water pollution prevention plan (SWPPP) for projects subject to the California General Construction Permit. and
- Implementation of a construction inspection program.

Construction Site BMPs

A Development Construction Project is defined as projects for which site activities such as clearing, grading, excavation, road construction, structure construction, or structure demolition results in the disturbance of soil.

In certain situations, where impact to storm water quality is a greater threat, Development Construction Projects should be given greater scrutiny to ensure that minimum requirements are met. These projects which present a greater threat to water quality, *but are not subject to the California General Permit for Storm Water Discharges Associated with Construction Activity*[1] are called Construction Priority Projects.

Unless specifically exempted, all Development Construction Projects will be required to implement BMPs to meet minimum water quality protection requirements. As a condition for issuing a grading or building permit, applicants for covered Development Construction Projects shall be required to certify that they understand and will comply with the minimum BMPs requirements related to construction site runoff.

Projects Subject to the General Construction Permit

Developers of construction sites subject to the General Construction Permit are required to prepare and implement a Storm Water Pollution Prevention Plan (state SWPPP). Before issuing building or grading permits, Permittees will require applicants to demonstrate that a Notice of Intent (NOI) has been filed with the State Water Resources Control Board (SWRCB), and that a state SWPPP has been prepared for projects subject to the General Construction Permit.

[1] A project is subject to the General Construction Permit if it disturbs 5 acres or more of soil, or the project results in the disturbance of less than 5 acres but is part of a larger common plan of development or sale that exceeds 5 acres.

Requirements for Construction Priority Projects

Prior to receiving a building or grading permit, applicants for Construction Priority Projects must prepare a local storm water pollution prevention plan (local SWPPP) covering construction materials and waste management control, and must certify that they will implement the local SWPPP year-round. Applicants for Construction Priority projects must also prepare and implement a Wet Weather Erosion Control Plan (WWECP) if the project will leave soil disturbed during the rainy season (November 1 through April 15).

Site Inspection and Enforcement

Each Permittee will implement site inspection procedures to assess whether the minimum requirements for Development Construction Projects are being achieved and appropriate BMPs are being implemented. Site inspections will also determine if local SWPPPs are being implemented at projects where they apply. Developers and/or contractors will also be required to conduct and document self-inspections of their construction site. Each Permittee will also develop and implement enforcement procedures to require that corrective actions be undertaken when the requirements are not met.

ES.5 MODEL PUBLIC AGENCY ACTIVITIES PROGRAM

Part IV.C of the Permit contains requirements specifically for public agency activities and facilities. Components of the Public Agency Activities Model Program describe measures to be taken by Permittees to reduce storm water impacts from public agency activities and facilities such as sanitary sewer systems, public construction activities, vehicle maintenance and material storage facilities, recreation facilities, storm water drainage systems, streets and roads, etc.

Sewage Systems Operations

This program component is applicable to all Permittees who own and operate a sewage collection system. Although sewage systems themselves are not a regular source of storm water pollution, raw sewage contains pollutants that can pose a serious threat to both human health and the quality of receiving waters if they enter the storm drain system through incidents such as spills, leaks, or overflows. The goal of this program is to reduce the impact of Permittee-owned sewage system operations on storm water quality.

The objectives of this program component are to:

- Keep any sewage overflows or leaks from entering the storm drain system or receiving waters.

- Identify and repair sewage system blockages, exfiltrations, overflows and implement procedures for investigating the causes.
- Notify public health authorities in cases where threats to public health exist.

Public Construction Activities Management

This program component is applicable to all Permittees who construct or contract to construct public facilities, including infrastructure. The program component requires the use of temporary best management practices (BMPs) to reduce the discharge of pollutants from public construction sites. In addition, public agency facilities with the potential for having a significant effect on storm water quality when completed by virtue of their size, nature of on-site activities, or other factors must incorporate permanent BMPs in the planning and design of the project.

The objectives of this program component are to:

- Select and incorporate appropriate construction control measures for storm water quality management from construction sites.
- Conduct and inspection program, including enforcement procedures as necessary, to verify that the construction control measures are implemented and performed effectively throughout the construction period.

Vehicle Maintenance / Material Storage Facilities Management

This program component is applicable to all Permittees who own and operate vehicle maintenance or materials storage facilities. Activities at these facilities may generate waste, spills and leaks that could potentially reach the storm drain system and receiving waters. The goal of this program is to make storm water quality a consideration when conducting activities at municipal facilities.

The objectives of this program component are to:

- Identify and evaluate sources of pollutants from public vehicle maintenance/material storage facilities that may affect the quality of storm water discharge from the facility.
- Identify and implement site-specific best management practices to reduce or prevent pollutants in storm water discharges.

Landscape and Recreational Facilities Management

This program component is applicable to all Permittees who own and operate recreational facilities. Maintenance practices at parks and recreation facilities generally include fertilizer and pesticide applications, vegetation maintenance and disposal, swimming pool chemical

maintenance and draining, and trash and debris management. All of these activities have the potential to contribute pollutants to the storm drain system. If improperly managed, potential pollutants can be transported in runoff (storm water and non-storm water discharges) to the storm drain system and subsequently to receiving waters. The goal of the program for landscape and recreational facilities management is to make the storm water quality a consideration when conducting operation and maintenance activities.

The objectives of this program component are to:

- Minimize the discharge of pesticides, herbicides and fertilizers to the storm drain system and receiving waters.
- Prevent the disposal of landscape waste into the storm drain system.
- Minimize the trash, debris and other pollutants from entering Permitee-owned recreational water bodies.
- Discharge municipal swimming pool water in a manner that will not contribute pollutants to receiving waters.

Storm Drain Operation and Management

The storm drain system functions primarily to collect and convey surface runoff to receiving waters during storms in order to prevent flooding. A common municipal activity includes the maintenance of the storm drain system to maintain hydraulic function as intended during storms. The goal of this program is to reduce the impact of storm drain operation and maintenance activities on storm water quality.

The objectives of this program component are to:

- Inspect and clean catch basins annually and keep appropriate records.
- Remove trash and debris annually from open channels and properly dispose of these materials to prevent them from being washed to receiving waters.
- Report prohibited non-storm water discharges observed during the course of normal daily activities so they can be investigated, contained and cleaned up, or eliminated.
- Review maintenance activities to verify that they minimize the amount of pollutants discharged to receiving waters.

Streets and Roads Maintenance

Streets and roads may collect litter and debris from nearby activities, as well as from vehicular traffic. During the course of routine maintenance waste materials are often generated. The goal

of this component is to reduce the impact of Permittee street and road operations and maintenance on storm water quality.

The objectives of this program component are to:

- Sweep curbed streets to reduce the discharge of pollutants associated with activities occurring in street and road rights-of-way.
- Minimize the discharge of pollutants associated with the maintenance of streets and roads.

Parking Facilities Management

Permittees who own parking lots with more than 25 parking spaces located in areas with potential exposure to storm water must have a parking facilities management plan. The goal of this component is to reduce the impact of these parking facilities on the quality of storm water discharges and receiving waters. The objective of this program component is to remove debris from parking facilities to reduce the amount of material that comes into contact with storm water.

Public Industrial Activities

Industrial activities, whether private or public, have the potential to discharge pollutants to the storm drain system. Many industrial facilities are subject to the California General Industrial Activities Storm Water Permit (General Industrial Permit) for control of storm water pollution. The goal of the General Industrial Permit is to reduce the impact of industrial facilities on storm water quality. This provision of the Permit may procedurally simplify and reduce the cost of Permittees' compliance for their industrial facilities (Phase 1) by providing the option to obtain coverage under the Permit in lieu of the General Industrial Permit. The objective of this program component is to comply with all requirements and conditions contained in the General Industrial Permit.

Emergency Procedures

Each Permittee must consider the impact of discharges to the storm drain system during emergency repairs of essential public services and infrastructure, and response to natural disasters. The goal is to reduce the impact of emergency response activities on receiving waters, to the extent possible, without compromising public health and safety.

The objectives of this program component are to:

- Recognize that public health and safety are the highest priority when conducting emergency response activities.

- Protect surface water quality by incorporating appropriate BMPs into emergency response activities to the extent possible.

ES.6 Model Public Information and Participation Program

The purpose of the Storm Water/Urban Runoff Public Information and Participation Program (Five-Year Public Education Plan) is to provide the framework for a comprehensive educational storm water and urban runoff outreach approach that will reach as many Los Angeles County residents as possible. The Five-Year Public Education Plan is research-based, broad-based with overarching themes, flexible, adaptable, and simplistic in order to produce behavior change.

Groups of residents differ significantly in terms of the amount of pollution they contribute, their demographics and lifestyle, attitudes related to storm water pollution, and probability of changing their behaviors. By better understanding the general County resident population, resources may be directed to those segments of the population that pose the greatest threat to storm water quality and who represent the greatest opportunity to respond to a public education campaign.

Some key strategies developed for successful implementation of the education model include:

- Creating Overarching Approach – A unified overall public education approach sets a "tone" for the program and once established helps target audiences identify the program with its pollution prevention message.
- Building Partnerships – Integrate County and city programs, cooperate with environmental groups, co-Permittees, and other public and business groups to disseminate public education program materials and special events information.
- Unify Pollution Prevention Efforts – Link all pollution prevention efforts (such as recycling, used oil and household waste) under a single agenda rather than under multiple prevention splinter programs.
- Develop "How To" Instructions – Provide specific guidelines supported by simple easy to remember tasks and concise "how to" instructions for pollution prevention actions that residents and business may incorporate into their everyday routines.
- Monitoring and Evaluation System – Establish an evaluation system to measure program effectiveness by assessing the number of people who show increased awareness, intent and/or actions in reducing storm water pollution. Re-evaluate and enhance program components on continually based on program effectiveness.
- Multiple Audience Impact – Develop program materials and activities that may be implemented and have impact on more than one audience at a time.

The Model Public Information and Participation Program also includes reporting requirements for Permittees to support the Annual Program Report to the Regional Board. These reporting requirements include the documentation of information such as:

- Number of media outlets contacted to run public service announcements (PSAs),
- Dollar value and number of media buys,
- Audience of the media PSAs,
- List of local businesses enlisted to place non-traditional advertising (point-of-purchase displays, product neck hangers, etc.)
- Numbers and types of storm water pollution prevention materials distributed, and
- Whether there is an increase in the number of illicit discharge reports to the Permittee.

1.1 BACKGROUND

The municipal storm water National Pollutant Discharge Elimination System (NPDES) permit (Permit) issued to Los Angeles County and 85 cities (Permittees) by the Los Angeles Regional Water Quality Control Board (Regional Board) on July 15, 1996, requires the Permittees to develop and implement a program addressing Development Planning for the private sector. This Model Development Planning Program (Model Program) describes the acceptable minimum standards that Permittees are to follow to implement their own development planning programs in compliance with the Permit. Part 2.III.A of the Permit contains requirements specifically for development planning as summarized in Table 1-1. (A copy of the applicable Permit section is included as Appendix A.) The Permit requirements are fully enforceable by the Regional Board and may be changed only through action by the Regional Board. This Model Program was reviewed and approved by the Executive Officer of the Regional Board staff, and may be changed by approval of the Executive Officer. The Permit (Part 2.I.E.1) requires that "...each Permittee shall demonstrate that it possesses the legal authority necessary to control discharges to and from those portions of the Municipal Separate Storm Sewer System (MS4) over which it has jurisdiction so as to comply with this Order." Therefore, each Permittee must have adequate legal authority to implement and enforce its adaptation of this Model Program.

The requirement to implement a program addressing development planning is based on the primary objectives of the 1987 amendments to the Clean Water Act that established a framework for regulating storm water discharges from municipal, industrial, and construction activities under the NPDES. The primary objectives are to:

- effectively prohibit non-storm water discharges, and
- reduce the discharge of pollutants from storm water systems to the Maximum Extent Practicable[2] (MEP).

Under the Code of Federal Regulations (CFR) at 40 CFR § 122, NPDES storm water permit applicants are required to implement a comprehensive storm water management program that includes the use of best management practices (BMPs) to reduce pollutants discharged from the

[2] Maximum Extent Practicable (MEP) is the standard for implementation of storm water management programs to reduce pollutants in storm water. MEP refers to storm water management programs taken as a whole. It is the maximum extent possible taking into account equitable consideration and competing facts, including, but not limited to: the gravity of the problem, public health risk, societal concern, environmental benefits, pollutant removal effectiveness, regulatory compliance, public acceptance, implementability, cost and technical feasibility. Section 402(p)(3)(B)(iii) of the Clean Water Act requires that municipal permits "...shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and systems, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

MS4 to the MEP. In part, 40 CFR § 122 requires that storm water management program must include elements that address new development, significant redevelopment, and construction.

Table 1-1. Development Planning Requirements

Permit Section	Requirement Summary [1]	Section of This Document	Permit Schedule
Part 2.III.A.1.a	Develop a model system for determining development projects as either Priority or Exempt.	2.1	01/30/98
Part 2.III.A.1.a	Permittees implement their own substantially similar system for determining development projects as either Priority or Exempt.	Not Applicable	Not later than 07/30/99
Part 2.III.A.1.b	Develop list of recommended BMPs for development projects.	2.2	01/30/98
Part 2.III.A.1.c	Develop Standard Urban Storm Water Mitigation Plans and guidelines for their preparation for a minimum of seven specified categories of development.	2.3	6 months after approval list of recommended BMPs
Part 2.III.A.2	Permittees implement own program of planning control measures consistent with model program elements developed in accordance with Part 2.III.A.1.a-c.	Not Applicable	02/15/01[2]
Part 2.III.A.3.a	Develop guidelines for preparing and reviewing CEQA documents, and for linking storm water quality mitigation conditions to local discretionary project approvals.	2.4	01/30/98
Part 2.III.A.3.b	Permittees include watershed and storm water management consideration into General Plan revisions when elements of General Plans are rewritten.	2.5	As General Plan elements are rewritten
Part 2.III.A.4	Develop a model developer information program.	3.0	01/30/98
Part 2.III.A.4	Permittees implement own developer information program consistent with model program developed in accordance with Part 2.III.A.4.	Not Applicable	Not later than 07/30/99

[1] For actual text of requirements, see the Permit excerpt in Appendix A.

[2] Pursuant to State Water Resources Control Board Order No. WQ 2000 - 11 of October 5, 2000.

R0000781

1.2 PROGRAM SUMMARY

This Model Program addresses the planning of Development Projects. The term "Development Projects" as used in this Model Program encompasses those projects that are subject to a planning and permitting review/process by a Permittee. A Development Project may be new development, redevelopment, renovation, remodeling, rehabilitation, infill, or other terms that may be used in a Permittee's ordinances and/or building code. Development Projects by public agencies have similar requirements that are addressed in the Model Public Agency Activities Program, another component of the Countywide Storm Water Management Plan.

Each Permittee will implement a development planning program based on this Model Program, which includes the following components:

1) a system for determining the appropriate category (Priority or Exempt) for a Development Project;
2) a recommended list of BMPs to be considered, and as appropriate, implemented at Development Projects;
3) a process to ensure that Planning Priority Projects incorporate the recommended list of BMPs and the Standard Urban Storm Water Mitigation Plan (SUSMP);
4) guidelines for California Environmental Quality Act (CEQA) compliance;
5) guidelines for the revision of General Plan elements to include watershed and storm water quality management considerations, when General Plan elements are being significantly rewritten; and
6) a developer information program that provides general guidance on the Permittee's development planning program, and specific guidance on BMP selection and the SUSMP.

1.3 USE OF THE MODEL PROGRAM

This Model Program sets the minimum requirements for Permittees to follow in implementing their own program. Permittees may modify the Model Program prior to adoption for their jurisdiction to address particular issues, concerns, or constraints that are unique to a particular watershed or to an individual municipality. Appendix B provides some guidance on ways that this Model Program may be modified to address particular local concerns. The requirements that a Permittee must fulfill to modify any of the model programs are specified in Part I.F of the Permit.

2.1 DETERMINATION OF DEVELOPMENT PROJECTS AS PRIORITY OR EXEMPT

The Permit defines Priority and Exempt projects as follows:

- Planning Priority Projects are development and redevelopment projects requiring discretionary approval which the Building Official (or equivalent municipal authority) determines may have a potential significant effect on storm water quality;" and
- Planning Exempt Projects are development and redevelopment projects which the Building Official (or equivalent municipal authority) determines will not have a potential significant impact on storm water quality." [Note: This definition of exempt projects differs from that found in the Development Construction Model Program.]

The process for determining whether a Development Project is a Planning Priority Project or a Planning Exempt Project is shown on Figure 1 and is described in the remainder of this section. Part 2.III.A.2 of the Permit requires that no later than July 30, 1999, each Permittee shall incorporate into its procedures a substantially similar process for categorizing Development Projects as Priority or Exempt.

2.1.1 Projects Requiring Discretionary Approval

The first factor in categorizing a project as either a Planning Priority Project or a Planning Exempt Project is to determine if the project requires discretionary approval. If a proposed project does not require discretionary approval, the project is a Planning Exempt Project and is exempt from the requirements of this Model Program.

Project approvals by Permittees are either discretionary or ministerial. Discretionary approval for purposes of this Model Program will be interpreted consistent with Section 15357 of the California Environmental Quality Act (CEQA) Guidelines. Section 15357 states:

> *"Discretionary project" means a project which requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity, as distinguished from situations where the public agency or body merely has to determine whether there has been conformity with applicable statutes, ordinances, or regulations.*

Ministerial approvals are defined in Section 15369 of the CEQA Guidelines, which states:

> *"Ministerial" describes a government decision involving little or no personal judgment by the public official as to the wisdom or manner of carrying out the project. The public official merely applies the law to the facts as presented but uses no special discretion or judgment in reaching a decision. A ministerial action involves only the use of fixed standards or objective measurements, and the*

public official cannot use personal, subjective judgment in deciding whether or how the project should be carried out.

Ministerial approvals should not be confused with projects that are determined to be Categorically Exempt under CEQA. Categorically Exempt projects are a distinct type of exemption under CEQA. By definition, any type or category of project that is treated by a particular jurisdiction as typically being Categorically Exempt under CEQA, is a project requiring discretionary approval.

Consistent with Section 15268(d) of the CEQA Guidelines, "Where a project involves an approval that contains elements of both a ministerial action and a discretionary action, the project will be deemed to be discretionary..." Throughout the remainder of this Model Program document, such a discretionary approval or discretionary action by a public agency or body will be referred to as a "discretionary action."

While the definitions of "discretionary" and "ministerial" as used in this Model Program rely on language from CEQA Guidelines, the process outlined in this Model Program is independent of any CEQA determination.

2.1.2 Projects Subject to the SUSMP

The second factor in categorizing a project as a Planning Priority Project or a Planning Exempt Project is to determine if the project falls into one of the eight categories subject to the SUSMP. Those eight categories are:

- Single-family hillside residences
- 100,000+ square foot commercial developments
- Automotive repair shops
- Retail gasoline outlets
- Restaurants
- Home subdivisions with 10 to 99 housing units
- Home subdivisions with 100 or more housing units
- Parking lots 5,000 square feet or more or with 25 or more parking spaces, and potentially exposed to storm water runoff

Part A of the model Planning Priority/Exempt Checklist provided as Figure 2 may be used to indicate whether a proposed project falls into one of these eight categories,

For consistency across the various component programs of the Countywide Storm Water Management Plan, a restaurant is a stand-alone facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption [Standard Industrial Classification (SIC) code of 5812]. An automotive repair shop is a facility that would use one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. There are three exceptions regarding automotive repair shops:

1) SIC code 5013, if the business has no outside storage of any recycled oil or other hazardous substances it will not be included
2) SIC code 5014, if the business does not engage in any repair work it shall not be included
3) SIC code 5541, if the business does not engage in any onsite repair work, it shall not be included.

Commercial development includes any development on private land that is not considered heavy industrial or residential, including, but not limited to: hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, multi-apartment buildings, car wash facilities, mini-malls, and other business complexes, shopping malls, hotels, office buildings, public warehouses, and other light industrial complexes. The number of square feet of development will be based on total impermeable area, including parking areas, as opposed to lot size or building footprint. This interpretation is used in this Model Program because of the intent to manage storm water runoff from paved areas associated with buildings.

If a proposed project requires a discretionary action and falls into one of the aforementioned eight categories of development projects, the project is a Planning Priority Project, and the project proponent will be required to incorporate the respective requirements of the SUSMP into the project plans. If the SUSMP is not appropriate and/or not adequate for the specific project in review, the project proponent will be required to develop a site-specific urban storm water mitigation plan subject to the Permittee's approval. For a Planning Priority Project, the respective requirements of the SUSMP or the site-specific urban storm water mitigation plan will be incorporated into the project design prior to the issuance of any grading or building permits.

2.1.3 Other Project Characteristics

If a proposed project requires a discretionary action and does not fall into one of the eight categories listed in Section 2.1.2, Part B of the model Planning Priority/Exempt Checklist, or a substantially similar checklist, shall be completed for the proposed project to identify potentially significant post-construction sources of storm water pollutants.

- If in completing the Planning Priority/Exempt Checklist, no potentially significant post-construction sources of storm water pollutants are identified, the project is Exempt from the requirements of this Model Program.
- If one or more potentially significant post-construction sources of storm water pollutants is identified in completing Part B of the model Planning Priority/Exempt Checklist, the project is a Planning Priority Project subject to the requirements of this Model Program. The project proponent will be required to incorporate appropriate post-construction BMPs into project design and plans. In accordance with Permit Part 2.III.A.2, each Permittee shall require that a project applicant submit an Urban Storm Water Mitigation Plan appropriate and applicable to the project, and the Permittee shall approve the plan prior to the issuance of any grading or building permits.

Part B of the model Planning Priority/Exempt Checklist provided as Figure 2 lists project characteristics that will be used to identify potentially significant sources affecting storm water quality. These project characteristics[3] are:

- Vehicle or equipment fueling areas;
- Vehicle or equipment maintenance areas, including washing;
- Commercial or industrial waste handling or storage, excluding typical office or household waste;
- Outdoor handling or storage of hazardous materials or waste;
- Hillside location, which will be defined as any natural slope of 25 percent or greater with known erosive soil conditions;
- Outdoor work areas for activities such as, but not limited to: welding; cutting; metal fabrication; assembly; application of paints, coatings, or finishes; pre-cast concrete fabrication; etc.;
- Location adjoining to, bisected by, or directly discharging to a designated environmentally sensitive area, riparian corridor, or wetland; and
- A 100,000+ square foot industrial development.

2.1.4 Changes in Project After Initiation of Construction

Prior to final approval of project permits, projects previously designated as Exempt may become subject to the requirements of Priority projects. If the proposed changes would make the project fall into one of the eight categories of development listed in Section 2.1.2 or would include project characteristics included in Part B of the model Planning Priority/Exempt Checklist, the

[3] Activities or materials potentially exposed to storm water and not protected by storm-resistant sheltering. Such activities include industrial and commercial facilities operations and construction work. Such materials include material handling equipment, industrial machinery, raw materials, intermediate products, byproducts, and waste products however packaged.

project shall be required to incorporate appropriate post-construction BMPs into the project's revised design and plans.

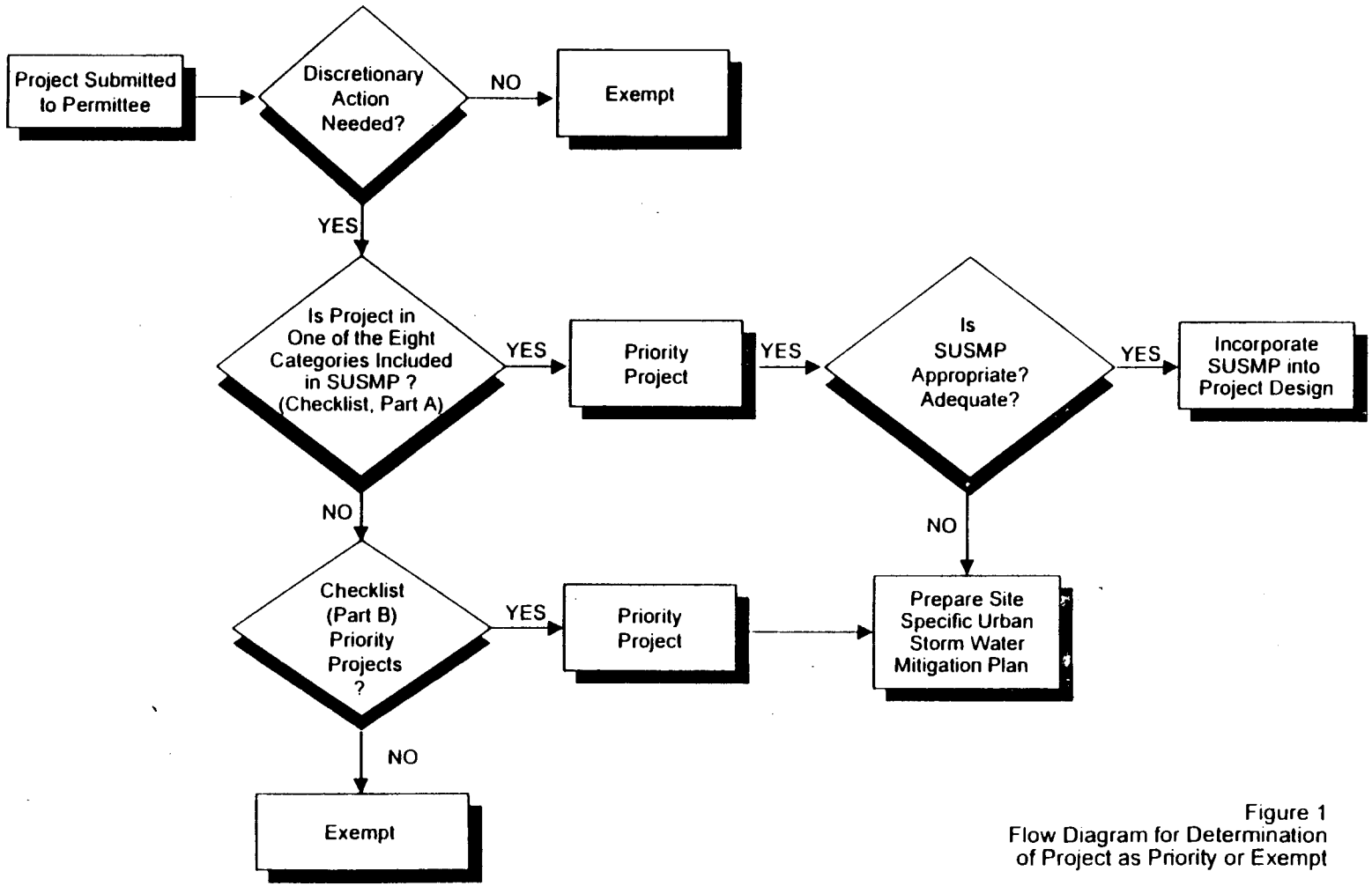

Figure 1
Flow Diagram for Determination
of Project as Priority or Exempt

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Figure 2. Model Checklist for Categorizing Discretionary Development Planning Projects[4] as Priority or Exempt

Project Name: _____

Project Location: _____

Description of Project: _____

_____

Part A. Proposed Discretionary Project Is:	Yes	No
1. A single-family hillside residence		
2. A 100,000+ square-foot commercial development		
3. An automotive repair shop (SIC codes 5013, 5014, 5541, 7532-7534, and 7536-7539)		
4. A retail gasoline outlet		
5. A restaurant (SIC code 5812)		
6. A home subdivision with 10 to 99 housing units		
7. A home subdivision with 100 or more housing units		
8. Parking lot 5,000 square feet or more or with 25 or more parking spaces, and potentially exposed to storm water runoff		

If all answers to Part A are No, continue to Part B.

Part B. Proposed Discretionary Project Characteristics[5]:	Yes	No
1. Vehicle or equipment fueling areas?		
2. Vehicle or equipment maintenance areas, including washing?		
3. Commercial or industrial waste handling or storage, excluding typical office or household waste?		
4. Outdoor handling or storage of hazardous materials or waste?		
5. Hillside location (as defined by the local jurisdiction)?		
6. Outdoor work areas for activities such as, but not limited to: welding; cutting; metal fabrication; assembly; application of paints, coatings, or finishes; pre-cast concrete fabrication; etc.?		
7. Location adjoining to, bisected by, or directly discharging to a designated environmentally sensitive area[6], riparian corridor, or wetland?		
8. A 100,000+ square-foot industrial development?		
9. Outdoor animal confinement (e.g., stables, kennels, etc.)?		

EXEMPT PROJECT: Every question in Part A and Part B is answered "NO."

PRIORITY PROJECT: Any question in Part A or Part B is answered "YES."

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[4] This example checklist applies only to Development Projects as defined in Section 1.2 of this Model Program.

[5] Activities or materials potentially exposed to storm water and not protected by storm-resistant sheltering. Activities include industrial and commercial facilities operations and construction work. Materials include material handling equipment, industrial machinery, raw materials, intermediate products, byproducts, and waste products however packaged.

[6] The Permit does not define "designated environmentally sensitive area." Examples of such areas may be wetlands, habitats of endangered, threatened, or rare species, wildlife dispersal or migration corridors, areas of locally-designated species such as heritage trees, or locally-designated natural communities such as oak forest or coastal habitat.

2.2 BMP SELECTION PROCESS FOR PRIORITY PROJECTS

Municipalities and developers should address the potential water quality impacts of storm water discharges associated with development activities early in the project planning and design process. In general, the sooner developers and municipal planning staff consider potential storm water impacts, the greater the opportunity to include efficient and effective BMPs into project design and plans.

In planning a development project, the designer must answer three key questions with respect to storm water quality control: (1) what kind of water quality controls are needed?; (2) where should the controls be implemented?; and (3) how much control is enough? In order to answer these questions, the designer should document the process used to identify potential storm water quality problems, develop design objectives, formulate and evaluate alternatives, select the most appropriate alternatives, and design the plan.

The Permittees have developed a process for selecting the appropriate BMPs for a specific project and three lists of recommended BMPs for Development Projects (Permit Part 2.III.A.1.b). The recommended BMP selection process is described in the remainder of Section 2.2, and the recommended BMPs for consideration in Planning Priority Projects are provided in Appendix C.

2.2.1 Goals and Objectives

Site-specific conditions of Development Projects determine which BMPs are most appropriate for a site. Prior to selecting BMPs, a good understanding of post-construction activities and potential sources of storm water pollutants is needed. The BMPs considered should address the potential pollutants reasonably expected at the site once the site is occupied or operational. BMPs for the project construction phase are addressed in the Development Construction Model Program. The permanent BMPs planned for a site should fulfill the following goals and objectives:

- be appropriate for the given site constraints;
- be feasible to implement and maintain;
- ensure no adverse storm water quality impacts;
- promote improved water quality;
- provide effective pollutant source control or removal capability;
- meet regulatory requirements; and
- be economically feasible.

R0000790

2.2.2 BMP Selection Criteria

In order to fulfill the goals and objectives, described in Section 2.2.1 appropriate BMPs should be selected by using selection criteria that identify the capabilities and limitations of each BMP. Common criteria used in screening and selecting BMPs during the planning stage are:

- project characteristics (e.g., potential sources of storm water pollutants after construction is completed);
- site factors (e.g., slope, high water table, soils, etc.);
- pollutant removal capability;
- short-term and long-term costs;
- responsibility for maintenance;
- contributing watershed area; and
- environmental impact and enhancement.

The BMP selection criteria listed above should be applied in accordance with the overall objective of this Model Program, i.e., to reduce pollutants in discharges to the MEP to achieve the attainment of Regional Board water quality objectives and protection of the beneficial uses of receiving waters. Some BMPs will clearly be more appropriate and effective in some site-specific situations than others, and BMP selections should reflect this variability. These factors are described in more detail in Appendix D.

2.2.3 Nominate and Evaluate Alternatives

The Permittees have nominated and evaluated alternative BMPs for development projects. The BMPs were nominated from the *California Storm Water Best Management Practices Handbooks*, as well as BMPs from other manuals and resources. Based on feasibility and appropriateness to the area, the Permittees have developed three lists of recommended BMPs for Planning Priority Projects. These BMPs are described in Appendix C.

2.2.4 Select Best Alternatives

Using the list of recommended BMPs for Planning Priority Projects, the developer/designer should use the selection criteria described in Section 2.2.2 to select the best alternatives for the project conditions, characteristics, and concerns. This may be done numerically, by rating and then ranking the BMPs. Or the selection process may be done in a more subjective, non-numerical way using experience and professional judgment to select the best alternative BMPs.

Either way, the designer should document the selection process to provide justification for the system of BMPs incorporated into project plans and designs.

2.2.5 Design and Installation

After the appropriate BMPs are selected for a given project, the designer should design the BMPs and incorporate them into the project plans and specifications. It is important that the project plans and specifications include adequate information for the BMPs to be properly installed. Improper installation is one of the most common reasons for water quality controls to not function as designed. Therefore, the designer must provide sufficient information in the project plans and specifications for proper BMP installation since improper installation is a common cause of BMP failure or ineffectiveness.

2.2.6 Maintenance

Maintenance is crucial to the proper and continued functioning and effectiveness of the BMPs. Designers should provide guidance on the proper maintenance of the BMPs to the developer/owner so it may be provided to the entity responsible for their maintenance (e.g., home owners association). Additionally, some Permittees may elect to provide maintenance guidelines in their modified program that is developed from this Model Program (see Appendix B).

2.2.7 BMPs For Planning Priority Projects

Planning Priority Projects will be required to incorporate appropriate BMPs in keeping with the size of the project and potential for storm water pollution, in order to reduce the discharge of pollutants into the storm drain system to the MEP. These BMPs address site planning practices, post-construction, and redevelopment/infill practices, and have been approved by the Regional Board. The lists of recommended BMPs are provided in Appendix C. If appropriate, other BMPs may be considered by developers or required by Permitees.

2.3 STANDARD URBAN STORM WATER MITIGATION PLANS

A SUSMP was developed and subsequently adopted by the Regional Board. As described in Section 2.1.2, all discretionary development and redevelopment projects that fall into one of the eight following categories are subject to the requirements of the SUSMP:

- Single-family hillside residences
- 100,000+ square foot commercial developments

- Automotive repair shops
- Retail gasoline outlets
- Restaurants
- Home subdivisions with 10 to 99 housing units
- Home subdivisions with 100 or more housing units
- Parking lots 5,000 square feet or more or with 25 or more parking spaces, and potentially exposed to storm water runoff

The SUSMP provides the minimum required BMPs that must be incorporated into project plans and designs before building or grading permits are issued by a Permittee. The SUSMP and project-specific Urban Storm Water Mitigation Plans are intended to assure that appropriate post-construction BMPs are included in project plans and designs to:

a. minimize, to the MEP, impacts from storm water runoff on the biological integrity of natural drainage systems and water bodies in accordance with requirements under CEQA, Section 404 of the Clean Water Act, local ordinances, and other legal authorities;

b. maximize, to the MEP, the percentage of permeable surfaces to allow more percolation of storm water into the ground;

c. minimize, to the MEP, the amount of storm water directed to impermeable areas and to the municipal separate storm sewer system;

d. minimize, to the MEP, parking lot pollution through the use of appropriate BMPs such as retention, infiltration, and good housekeeping;

e. establish reasonable limits on the clearing of vegetation from the project site including, but not limited to, regulation of the length of time during which soil may be exposed and, in certain sensitive cases, the prohibition of bare soil; and

f. provide for appropriate permanent measures to reduce storm water pollutant loads from the development site to the MEP.

Permittees shall amend ordinances and codes not later than January 15, 2001, to give legal effect to the SUSMP requirements. The SUSMP requirements shall take effect not later than February 15, 2001. A copy of the SUSMP is included in Appendix E.

2.4 GUIDELINES FOR REVIEW AND APPROVAL OF LOCAL DISCRETIONARY PROJECTS

2.4.1 Preparation and Review of CEQA Documents

The Permit requires that the impacts of development projects on storm water quality be assessed during the early planning stages of a project, including CEQA document preparation and review.

The purpose of CEQA document review procedures is to ensure that the potentially significant environmental impacts of a project are disclosed and that mitigation measures are incorporated to reduce the impacts to a level that is less than significant. The following storm water management guidelines have been developed for use in preparing and reviewing CEQA documents to specifically ensure that storm water impacts are considered and that storm water quality mitigation conditions are linked to local discretionary project approvals:

- CEQA documents will be reviewed by Permittees for compliance with General Plans, and specifically with storm water and natural resource protection elements of such plans.
- CEQA documents will be reviewed by Permittees for impacts on storm water, will contain mitigation measures for identified significant adverse impacts, and at a minimum will include measures required by this countywide Model Development Planning Program.
- Project approval will be conditioned to require a review of storm water mitigation measures during the plan check process to ensure that measures have been incorporated into the design plans.
- Project approval will be conditioned upon inspection of required storm water impact mitigation measures to ensure that all such measures have been installed prior to issuance of a Certificate of Occupancy.

These guidelines are intended to address water quality impacts to all surface waters including but not limited to riparian corridors and wetlands, and to promote protection of the biological integrity of drainage systems and receiving waters. Each Permittee must review these guidelines for the purpose of making appropriate modifications in their internal procedures within 6 months after commencement of the next fiscal year following approval of the program by the Executive Officer of the Regional Board, but no later than July 30, 1999.

Existing environmental review procedures for development activities typically use checklists similar to the model forms provided in CEQA Guidelines. Although these checklists have been developed in accordance with the CEQA Guidelines, they may be inadequate to prompt consideration of the potential environmental impacts resulting from the quality of storm water discharges or impacts to natural features that contribute to water quality protection.

The following questions should be used as guidance in completing the CEQA checklist relative to impacts related to storm water management:

- Would the proposed Development Project result in storm water system discharges from areas for materials storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas?
- Would the proposed Development Project result in significant and environmentally harmful increases in the flow rate or volume of storm water runoff?
- Would the proposed Development Project result in significant and environmentally harmful increases in erosion of the project site or surrounding areas?
- Would the proposed Development Project result in storm water discharges that would significantly impair the beneficial uses of receiving waters or areas that provide water quality benefits (e.g., riparian corridors, wetlands, etc.)?
- Would the proposed Development Project cause significant harm to the biological integrity of drainage systems and water bodies?

A Permittee may develop additional guidance questions specific to storm water pollution impacts to reflect particular issues, concerns, or characteristics unique to a particular watershed, receiving water body, or to an individual municipality.

Based on the answers to these questions, if a CEQA reviewer determines that a project would have a potentially significant adverse impact on storm water quality, a CEQA document will be required to clearly identify the potential impacts and appropriate BMPs to mitigate the identified adverse impacts.

2.4.2 Review and Approval of Local Permits

The mitigation of storm water quality impacts will be linked to discretionary project approval by the requirement to incorporate mitigation measures during design. It is during the design review process that:

- plans will be verified as being in compliance with the General Plans, zoning ordinances, and other applicable local ordinances and codes;
- plans and specifications will be verified as incorporating appropriate BMPs; and
- the reviewer will require projects to be redesigned, if necessary, to address storm water pollution prevention goals.

Approval of Development Projects will not be granted until storm water mitigation measures appropriate and applicable to the project are incorporated into project plans. Construction,

building. or grading permits will not be issued by a Permittee until post-construction (permanent) storm water mitigation measures appropriate and applicable to the project are incorporated into project plans. Occupancy permits will not be issued until the Permittee's inspector(s) verify correct installation of post-construction (permanent) storm water mitigation measures.

2.5 GENERAL PLANS

The Permit requires that each Permittee shall include watershed and storm water management considerations in appropriate elements of the Permittee's General Plan, whenever such elements are significantly rewritten. Guidelines to assist Permittees in conforming to this requirement are provided in Appendix F.

3.1 PROGRAM REQUIREMENTS FOR DEVELOPER INFORMATION

The Permit requires that the Principal Permittee, in consultation with the Permittees, create a model program to inform developers seeking discretionary approvals about storm water management activities associated with project development and construction; maximization of pervious areas and storm water infiltration; and economically feasible storm water pollution control measures.

This Model Developer Information Program provides information and sample materials that may be used to inform developers of the storm water permit requirements and identifies storm water management issues to be considered by the developer during the planning, design, and construction phases of projects.

3.2 HANDOUT MATERIALS FOR PUBLIC COUNTERS

As part of the developer information program, Permittees shall provide handout materials at their public counters for developers and contractors requesting project approvals and construction permits, as well as, including such handouts with other materials distributed to project applicants. These handout materials will address the following elements:

- a general description of the nature of storm water pollution, its causes, and environmental consequences.
- a general description of the Permittee's municipal storm water management program and its requirements that relate to development activity.
- a description of required and/or suggested BMPs that may be considered for incorporation into Development Projects to reduce pollutants in storm water discharges from urbanized areas.
- guidance information on selecting BMPs for Development Projects, including BMP suggestions that may be particularly appropriate for specific development categories.
- a list of reference materials that provide detailed information on BMP objectives and implementation, as well as sources of the reference materials.
- copies of ordinances or other documents that provide the Permittee with the legal authority to control storm water discharges.

Because of the varying nature of project types, and developer and contractor general awareness of storm water quality management issues, example handout materials have been developed to provide several levels of information.

The handout materials are divided into the following general categories:

- General Information. Materials presented in this information category provide an overview of the Permittee's storm water quality management program through a discussion of the goals and objectives. The intent of this information is to raise the level of general awareness of developers and contractors about the program and its influence on the project planning, design, and construction process.
- Planning Information. Documents and information in this category provide guidance to the developer or contractor during preparation of the project planning and preliminary design documents. Materials available include: guidance on BMP selection; planning and design BMPs; and the SUSMP.
- Construction Information. The construction information category of documents provides guidance to the developer or contractor during preparation of the project final design documents, and during project construction. Materials available in this category include: guidance on construction BMP selection; temporary and permanent construction BMPs; and the SUSMP.

Example handout materials for each of these information categories are provided in Appendix G (general information), Appendix H (planning information) and Appendix I (construction information). Permittees may use these materials as is, or may modify them to address specific needs or issues within their jurisdiction.

The appendices to this document (excluding Appendix A) are advisory only unless specifically identified in this Model Program as a requirement.

Appendix A
Excerpt From Permit

III. Development Planning and Construction

A. Development Planning

Table 3 on the following page shows the summary of requirements under this section and corresponding compliance dates.

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Los Angeles County Municipal Storm Water Permit
Order No. 96-054 CAS614001

Table 3
Development Planning Requirements and Compliance Dates

Requirement	Permit Section	Principal Permittee	Permittees	Months from Effective Date of Order (Compliance Date)	For Approval By
Develop a model system for prioritization of development projects	III.A 1.a	✓		18 (January 30, 1998)	Executive Officer
Implement a system for prioritization of development projects	III.A.1.a		✓	≤ 36 months (July 30, 1999)	N/A
Develop list of recommended BMPs for development projects (countywide guidelines)	III.A.1.b	✓		18 (January 30, 1998)	Regional Board
Develop Standard Urban Storm Water Mitigation Plans (SUSMP)	III.A.1.c	✓		6 months after Regional Board approval of countywide guidelines	Executive Officer
evelop and submit a nedule of implementation for a program for planning measures consistent with the Standard Urban Storm Water Mitigation Plan (SUSMP) for priority projects	III.A.2		✓	≤ 36 months (July 30, 1999)	N/A
Develop guidelines for preparing/reviewing CEQA documents	III.A.3.a	✓		18 (January 30, 1998)	Executive Officer
Incorporate CEQA guidelines into internal procedures	III.A.3.a		✓	≤ 36 months (July 30, 1999)	N/A
Include watershed and storm water management consideration into General Plan revisions	III.A.4 3.b		✓	During General Plan revisions	N/A
Develop model program for developers	III.A.4	✓		18 (January 30, 1998)	Executive Officer
Implement developer information program	III.A.4		✓	≤ 36 months (July 30, 1999)	N/A

1. Countywide Development Planning Guidance

The Principal Permittee, in consultation with the Permittees, shall develop the following development planning guidance materials for use during planning and permitting of all development projects requiring discretionary approval:

a. A model documented system, such as a checklist, for determining priority projects as well as a list of specifically exempt projects not later that January 30, 1998. Priority and exempt projects are defined as follows:

i. Priority Projects are development and redevelopment projects requiring discretionary approval which the Building Official (or equivalent municipal authority) determines may have a potential significant effect on storm water quality.

ii. Exempt Projects are development and redevelopment projects which the Building Official (or equivalent municipal authority) determines will not have a potential significant impact on storm water quality.

The documented system shall consider location of the project with respect to designated environmentally sensitive areas and the slope and erosion potential of the site and surrounding areas.

Each Permittee shall incorporate a substantially similar system into its procedures not later than six months after commencement of its next fiscal year following approval of the of the documented system by the Executive Officer, provided, however, that such approval is issued not later than 90 days prior to the commencement of the Permittee's fiscal year. If such approval is given within 90 days of the commencement of a Permittee's fiscal year, such program shall be implemented in the second fiscal year following approval but in no event shall implementation be later than July 30, 1999.

b. A list of recommended BMPs not later than January 30, 1998. The list of BMPs shall include:

i. Site planning practices;
ii. Post-construction best management practices; and
iii. Redevelopment and infill practices.

Consideration shall be given to the type of development and the potential for storm water pollution when determining the applicability of BMPs. Cost effectiveness, ease of maintenance, and consistency with other environmental mandates may also be considered.

For developments where increased storm water discharge rates will result in an increase in downstream erosion potential, the list of recommended BMPs shall include those BMPs which can be used to maintain peak runoff rates at pre-development levels to the maximum extent feasible.

The list of recommended BMPs shall be submitted to the Regional Board for approval.

c. Standard Urban Storm Water Mitigation Plans (SUSMPs) and guidelines for their preparation not later than six months after Regional Board approval of the BMPs in Part 2.III.A.1.b. The SUSMPs shall incorporate the appropriate elements of the recommended BMPs list. At the minimum, SUSMPs and guidelines shall be prepared for the following development categories:

i. a 100+ home subdivision;
ii. a 10-home subdivision;
iii. a 100,000+ square-foot commercial development;
iv. an automotive repair shop;
v. a retail gasoline outlet;
vi. a restaurant; and
vii. a hillside-located single-family dwelling.

2. Planning Control Measures

Each Permittee shall develop a program on planning control measures for priority projects (Part 2.III.A.1.a) consistent with the programs developed under Part 2.III.A.1.b. & c.. Each Permittee shall initiate implementation of its program not later than six months after commencement of its next fiscal year following approval of the model Standard Urban Storm Water Mitigation Plans by the Executive Officer, provided, however, that such approval is issued not later than 90 days prior to the commencement of the Permittee's fiscal year. If such approval is given within 90 days of the commencement of a Permittee's fiscal year, such program shall be implemented in the second fiscal year following approval but in no event shall implementation be initiated later than July 30, 1999. Each Permittee shall require that the project applicant submit an Urban Storm Water

Mitigation Plan appropriate and applicable to the project, and that the Permittee approve the Plan prior to the issuance of any grading or building permit. The Urban Storm Water Mitigation Plan shall incorporate by detail or reference appropriate post-construction BMPs to:

a. Implement, to the maximum extent practicable, requirements established by appropriate governmental agencies under CEQA, Section 404 of the Clean Water Act, local ordinances and other legal authorities intended to minimize impacts from storm water runoff on the biological integrity of natural drainage systems and water bodies;

b. Maximize, to the maximum extent practicable, the percentage of permeable surfaces to allow more percolation of storm water into the ground;

c. Minimize, to the maximum extent practicable, the amount of storm water directed to impermeable areas and to the MS4;

d. Minimize, to the maximum extent practicable, parking lot pollution through the use of appropriate BMPs such as retention, infiltration, and good housekeeping;

e. Establish reasonable limits on the clearing of vegetation from the project site including, but not limited to, regulation of the length of time during which soil may be exposed and, in certain sensitive cases, the prohibition of bare soil; and

f. Provide for appropriate permanent controls to reduce storm water pollutant load produced by the development site to the maximum extent practicable.

The Permittee may refer applicants to the *'California Storm Water Best Management Practice Handbooks*, California Storm Water Quality Task Force, Sacramento, CA (1992)' and its revisions; the Countywide Storm Water Management Plan; *'USEPA Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Issued under the Authority of Section 6217(g) of the Coastal Zone Act Reauthorization Amendments of 1990*, Document No. EPA 840 B 92-002 (1993),'; and similar manuals for specific guidance on selecting post-construction BMPs for reducing pollutants in storm water discharges.

3. Planning Process

In order to integrate storm water management considerations into

discretionary development projects at the time that they are first proposed to jurisdictions, and to support other provisions of this Order:

a. The Principal Permittee, in consultation with the Permittees, shall develop storm water management guidelines for use in preparing/reviewing CEQA documents, and in linking storm water quality mitigation conditions to local discretionary project approvals not later than January 30, 1998.

The guidelines shall address the preservation of areas that provide water quality benefits such as riparian corridors and wetlands and shall promote protection of the biological integrity of drainage systems and water bodies.

Each Permittee shall review the guidelines for the purpose of making appropriate modifications in their internal procedures not later than six months after commencement of its next fiscal year following approval of the program by the Executive Officer, provided, however, that such approval is issued not later than 90 days prior to the commencement of the Permittee's fiscal year. If such approval is given within 90 days of the commencement of a Permittee's fiscal year, such program shall be implemented in the second fiscal year following approval but in no event shall implementation be later than July 30, 1999.

b. Each Permittee shall include watershed and storm water management considerations in the appropriate elements of the Permittee's General Plan, whenever said elements are significantly rewritten. Appropriate elements may include the following:

i. Conservation; and/or
ii. Open space; and/or
iii. Land-use; and/or
iv. Public utilities; and/or
v. Infrastructure; and/or
vi. Other appropriate elements.

4. Developer Information Program

The Principal Permittee, in consultation with the Permittees, shall develop a model program not later than January 30, 1998, to inform developers seeking discretionary approvals about:

a. Development and construction storm water management;

b. Maximization of pervious areas and storm water infiltration (where geology and topography permit); and

c. Cost effective storm water pollution control measures.

The program shall provide specific guidance on selecting BMPs to reduce pollutants in storm water discharges from urbanized areas, and include appropriate BMPs, educational materials, and handbooks and guidelines described in Part 2. III.A.3.

Each Permittee shall implement a developer information program consistent with the model program not later than six months after commencement of its next fiscal year following approval of the model by the Executive Officer, provided, however, that such approval is issued not later than 90 days prior to the commencement of the Permittee's fiscal year. If such approval is given within 90 days of the commencement of a Permittee's fiscal year, such program shall be implemented in the second fiscal year following approval but in no event shall implementation be later than July 30, 1999. Each Permittee's program shall include information about its legal authorities. Permittees are encouraged to engage in joint efforts in implementing the program.

B. Development Construction

Table 4 on the following page shows the summary of requirements and corresponding compliance dates under this section.

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Appendix B
Ways To Modify This Model Program

B.1 MINIMUM REQUIREMENTS

Some Permittees, through new or modified ordinances, statutes, codes, or other legal authority, may want to designate minimum requirements for storm water pollution control measures for all development projects. In that case, this model program should be modified to identify which BMPs are required as minimum BMPs, and which BMPs must be considered in addition to the minimum BMPs.

B.2 DESIGN STANDARDS

The objective of the model program requirements prescribed in the Permit (Order No. 96-054, NPDES CAS614001), is to reduce pollutants in discharges to the MEP in order to attain the water quality objectives and protect the beneficial uses of the receiving waters for Los Angeles County.

The federal regulations for municipal storm water upon which the Permit is based provide that management programs shall include a description of both structural and non-structural control measures that will be implemented and maintained to reduce pollutants from runoff from commercial areas, residential areas, and construction sites to the MEP. Some cities, counties, and states have developed design standards for structural control measures to assure that structural control measures are designed to reduce pollutants in storm water runoff to the MEP. One advantage of developing design standards is that it allows for equity among development projects in terms of level of treatment provided by the structural control measures. Additionally, design standards specific to a municipal jurisdiction can reflect the local hydrologic conditions and soil types, and provide defensible support for the attainment of the standard of MEP.

The SUSMP adopted by the Regional Board requires that post-construction structural or treatment control BMPs be designed to:

A. mitigate (infiltrate or treat) storm water runoff from either:

   1. the 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998)*, or

   2. the volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in *California Stormwater Best Management Practices Handbook – Industrial/ Commercial*, (1993), or

   3. the volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or

4. the volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event,

AND

B. control peak flow discharge to provide stream channel and over bank flood protection, based on flow design criteria selected by the local agency.

Some Permittees may already have, or may want to develop, further design standards for structural control measures. Design standards can be based on the size of storm (amount of rainfall), volume of runoff captured by the structural control, or the percent removal of some indicator pollutant, such as total suspended solids (TSS). The design standards would be incorporated into a Permittee's customized program and adopted for use within the Permittee's jurisdiction.

B.3 ENHANCED ENFORCEMENT AUTHORITY

In order to enhance the ability to enforce the new or existing ordinances, statutes, or codes that pertain to storm water pollution control, many cities and counties are adopting more aggressive enforcement authority. Enforcement authority and actions may include the following:

- Warning Notice;
- Notice of Violation;
- Stop Work Order and permit suspension;
- Stop Work Order and permit revocation;
- fines and penalties; and
- action against security (bond).

Depending on the needs and problems experienced by a Permittee, other more aggressive authority may be warranted. For example, a city may want to provide the power of arrest to the field inspectors, which would give them the authority to immediately stop illegal grading activities, if this has been a recurring problem. Another example would be for a city to adopt extremely high retroactive grading permit fees as a deterrent to those who have started grading without a permit, but apply for one later, if this has been a recurring problem. Permittees may want to describe such enhanced enforcement authority in their customized program.

B.4 MANUALS OF STANDARDS

The Permit refers to several manuals that provide information on the design, installation, and maintenance of storm water BMPs. A Permittee may want to adopt or refer to other manuals in addition to the ones cited in the Permit. This could be included in the program that is customized from this model program for adoption and use by a Permittee.

Alternatively, a Permittee may want to extract detailed BMP design, installation, and maintenance guidelines from reference manuals and incorporate the information directly into the customized program, as an Appendix, for example. This would provide designers and developers with more focused and specific guidance by a Permittee, which is helpful if there is variation in the information provided in the different manuals cited in the Permit.

B.5 ZONING EVALUATION

Another modification to the model program that Permittees may want to consider is to evaluate existing zoning ordinances, designations, and standards: revise permitted uses: develop ancillary use standards: revise general construction and operational standards; and revise rezoning and permitting requirements. Storm water pollution controls should be integrated locally with other provisions of the zoning ordinance. Therefore, each Permittee would first evaluate its ordinance with respect to activities that may increase the risk of storm water pollution discharges, control storm water pollution, or interfere with adequate storm water pollution control. When considering the existing zoning maps, some areas may require rezoning action based on the proposed changes to the General Plans.

The zoning ordinance designates each piece of property within a zone, and within each zone a range of land uses is permitted. Each type of use permitted in each zone should be evaluated for its potential to cause or to reduce the discharge of pollutants via the storm water drainage system. Storm water pollution control may be partially achieved by limiting the range of permitted uses within each zone. Zoning ordinances should be amended to define construction and operational standards for areas that are potential storm water pollutant sources. Application materials for rezoning requests and discretionary approvals will be designed to elicit sufficient information to evaluate the potential storm water pollution risk that may occur as a result of the request being granted (e.g., is use subject to an industrial NPDES permit, what kinds of activities and materials are being stored, how close is the nearest water body or flood control channel, etc.).

B.6 COVENANTS, CODES, AND RESTRICTIONS FOR RESIDENTIAL AND COMMERCIAL DEVELOPMENTS (CC&RS)

One opportunity to provide controls for development projects that address over-watering, washing of paved areas, illegal storage and disposal practices, illegal product use, litter control, proper turf and landscape management, proper disposal of household materials, and leaking vehicles is through CC&Rs that are enforced by Homeowners and Tenants Associations. Draft CC&Rs could be provided in a Permittee's customized program that is adapted from this model program for use within their jurisdiction.

B.7 BMP MAINTENANCE GUIDELINES

Improper maintenance is one of the most common reasons for water quality controls to not function as designed, or to fail entirely. While Permittees in most cases will not retain the responsibility for maintenance of water quality controls that are installed in private development projects, it would be beneficial to the program and the long-term effectiveness of the BMPs if guidance were provided for the proper maintenance of the BMPs. These guidelines could then be incorporated by the developer into the Homeowners or Tenants Association CC&Rs (see B.6).

Appendix C
Recommended BMPs for
Site Planning, Post-Construction, and Redevelopment/Infill

Appendix C
Recommended BMPs for Site Planning, Post-Construction, and Redevelopment/Infill

Site Planning BMPs
Minimize Storm Water Runoff
Pervious Drainage System
Reduce Area of Impervious Surface
Site Layout

Post-Construction BMPs	
BMP Name	**BMP Identification No. and Name [a]**
Aboveground Tank Berms	SC41, Aboveground Tank Berms
Car Wash Facility	SC3, Vehicle and Equipment Washing and Steam Cleaning
Catch basin insert	Not applicable.
Catch-basin screen	Not applicable.
Cistern collection systems	Not applicable.
Clarifiers	Not applicable.
Constructed Wetlands	TC3, Constructed Wetlands
Continuous flow deflection/separation systems	Not applicable.
Control of Impervious Runoff	Not applicable.
Curb elimination on landscape areas	Not applicable.
Detention/Infiltration device maintenance	SC75, Has the developer/owner determined how detention/infiltration devices planned for the site will be maintained
Drip Irrigation systems	Not applicable.
Efficient Irrigation	Not applicable
Energy Dissipaters	ESC40, Outlet Protection
Extended Detention Basins	TC5, Extended Detention Basin
Facility design to divert wash-off to sanitary sewers	Not applicable.
Filtration systems	Not applicable.
Flow diversion to landscape or pervious areas	Not applicable.
Geotextiles and Mats	ESC20, Geotextiles and Mats
Illicit Connection Prevention	SC60, Illicit Connection Prevention – Will any planned connections to the storm drain carry non-storm water discharges
Infiltration Basins	TC1, Infiltration
Infiltration Trenches	TC1, Infiltration
Inlet Trash Racks	Not applicable.
Landscape Design	ESC2, Preservation of Existing Vegetation; ECS10, Seeding and Planting; ESC11, Mulching
Linings for Urban Runoff Conveyance Channels	Not applicable.
Materials Management	SC5, Outdoor Loading/Unloading of Materials; SC6, Outdoor Container Storage of Liquids; SC8, Outdoor Storage of Raw Materials, Products, and By-Products
Material storage management	SC20, Material storage control – Design site with bermed and covered storage areas for material storage located away from storm drains
Media Filtration	TC6, Media Filtration

[a] Corresponds to the BMP number and name as in the *California Storm Water Best Management Practice Handbooks* (1993).

Post-Construction BMPs	
BMP Name	**BMP Identification No. and Name [a]**
Motor Fuel Concrete Dispensing Areas	SC2, Vehicle and Equipment Fueling
Motor Fuel Dispensing Area Canopy	SC2, Vehicle and Equipment Fueling
Multiple treatment systems in combination	TC8, Multiple treatment systems in combination
Normal flow separation/storage systems	Not applicable.
Non-storm water discharges elimination	SC1, Eliminate non-storm water discharges to the storm drain collection system
Oil/Water Separators and Water Quality Inlets	TC7, Oil/Water Separators and Water Quality Inlets
Outdoor Process Equipment Operation and Maintenance	SC7, Outdoor Process Equipment Operation and Maintenance – Design site to include a canopy over outdoor processes
Outdoor Storage	SC6, Outdoor Container Storage of Liquids; SC8, Outdoor Storage of Raw Materials, Products, and By-Products
Pesticide and fertilizer use elimination or reduction	Not applicable.
Porous Pavement and Alternative Surfaces	TC1, Infiltration
Post signs to caution improper practices or to educate	Not applicable.
Primary waste-water treatment systems	Not applicable.
Protect Slopes and Channels	ECS40, Outlet Protection; ESC42, Slope Roughening and Terracing
Retention grading	Not applicable.
Scheduling	ESC1, Scheduling activity
Secondary waste-water treatment systems	Not applicable.
Self -Contained Areas for Vehicle or Equipment Washing, Steam Cleaning, Maintenance, Repair, or Material Processing	SC3, Vehicle and Equipment Washing and Steam Cleaning; SC4, Vehicle and Equipment Maintenance and Repair; SC7, Outdoor Process Equipment Operations and Maintenance
Storm Drain System Stenciling and Signage	SC30, Storm Drain System Signs
Trash Container Areas	SC9, Waste Handling and Disposal
Vacuum sweeping of parking lots	Not applicable
Vegetated buffer zones	Not applicable.
Vegetated Swales and Strips	TC4, Bio-filters
Wet Pond	TC2, Wet Pond

[a] Corresponds to the BMP number and name as in the *California Storm Water Best Management Practice Handbooks* (1993).

Redevelopment and Infill BMPs	
BMP Name	**BMP Identification No. and Name [a]**
Aboveground Tank Berms	SC41, Aboveground Tank Berms
Car Wash Facilities	SC3, Vehicle and Equipment Washing and Steam Cleaning
Catch basin insert	Not applicable.
Catch-basin screen	Not applicable.
Cistern collection systems	Not applicable.
Clarifiers	Not applicable.
Continuous flow deflection/separation systems	Not applicable.
Control of Impervious Runoff	Not applicable.
Curb elimination on landscape areas	Not applicable.
Detention/Infiltration device maintenance	SC75, Has the developer/owner determined how detention/infiltration devices planned for the site will be maintained
Drip Irrigation systems	Not applicable.
Efficient Irrigation	Not applicable.
Energy Dissipaters	ESC40, Outlet Protection
Facility design to divert wash-off to sanitary sewers	Not applicable.
Filtration systems	Not applicable.
Flow diversion to landscape or pervious areas	Not applicable.
Geotextiles and Mats	ESC20, Geotextiles and Mats
Illicit Connection Prevention	SC60, Illicit Connection Prevention – Will any planned connections to the storm drain carry non-storm water discharges
Landscape Design	ESC2, Preservation of Existing Vegetation; ECS10, Seeding and Planting; ESC11, Mulching
Linings for Urban Runoff Conveyance Channels	Not applicable.
Materials Management	SC5, Outdoor Loading/Unloading of Materials; SC6, Outdoor Container Storage of Liquids; SC8, Outdoor Storage of Raw Materials, Products, and By-Products
Material storage management	SC20, Material storage control – Design site with bermed and covered storage areas for material storage located away from storm drains
Media Filtration	TC6, Media Filtration
Motor Fuel Concrete Dispensing Areas	SC2, Vehicle and Equipment Fueling
Motor Fuel Dispensing Area Canopy	SC2, Vehicle and Equipment Fueling
Multiple treatment systems in combination	TC8, Multiple treatment systems in combination
Non-storm water discharges elimination	SC1, Eliminate non-storm water discharges to the storm drain collection system
Normal flow separation/storage systems	Not applicable.

[a] Corresponds to the BMP number and name as in the *California Storm Water Best Management Practice Handbooks* (1993).

Redevelopment and Infill BMPs	
BMP Name	**BMP Identification No. and Name [a]**
Oil/Water Separators and Water Quality Inlets	TC7, Oil/Water Separators and Water Quality Inlets
Outdoor Process Equipment Operation and Maintenance	SC7, Outdoor Process Equipment Operation and Maintenance – Design site to include a canopy over outdoor processes
Outdoor Storage	SC6, Outdoor Container Storage of Liquids; SC8, Outdoor Storage of Raw Materials, Products, and By-Products
Pesticide and fertilizer use elimination or reduction	Not applicable.
Porous Pavement and Alternative Surfaces	TC1, Infiltration
Post signs to caution improper practices or to educate	Not applicable.
Primary waste-water treatment system	Not applicable.
Protect Slopes and Channels	ECS40, Outlet Protection; ESC42, Slope Roughening and Terracing
Retention grading	Not applicable.
Scheduling	ESC20, Scheduling activity
Secondary waste-water treatment systems	Not applicable.
Self-Contained Areas for Vehicle or Equipment Washing, Steam Cleaning, Maintenance, Repair, or Material Processing	SC3, Vehicle and Equipment Washing and Steam Cleaning; SC4, Vehicle and Equipment Maintenance and Repair; SC7, Outdoor Process Equipment Operations and Maintenance
Storm Drain System Stenciling and Signage	SC30, Storm Drain System Signs
Trash Container Areas	SC9, Waste Handling and Disposal
Vacuum sweeping of parking lot	Not applicable.
Vegetated buffer zones	Not applicable.
Vegetated Swales and Strips	TC4, Bio-filters

[a] Corresponds to the BMP number and name as in the *California Storm Water Best Management Practice Handbooks* (1993).

Appendix D
BMP Selection Criteria

The following criteria should be considered during the process of assessing the appropriateness (benefits and limitations) of BMPs for a particular project:

- project characteristics;
- site factors;
- pollutant removal capability;
- short-term and long-term costs;
- responsibility for maintenance;
- contributing watershed area; and
- environmental enhancement.

D.1 PROJECT CHARACTERISTICS

Selection of BMPs for a project is a function of project characteristics, such as type or size of project. Post-construction activities and operations that may be potential sources of storm water pollution are often the same for a given type of project. Projects developed on large sites provide the opportunity to incorporate a wider variety of BMPs, whereas smaller sites often have physical constraints precluding implementation of BMPs requiring large land areas.

D.2 SITE FACTORS

Site factors have common physical restrictions on BMPs and include:

Steep Slopes: Steep slopes restrict the use of several BMPs. Porous pavement must be situated in sites with slopes of 5 percent or less. Swales can only be used if their slope is less than 5 percent; however, swales often can be used perpendicular to the slope or with a drop structure. Also, because of slope stability concerns, infiltration trenches and filter strips are not practical when slopes exceed 20 percent.

High Water Table: The water table acts as an effective barrier to exfiltration and can sharply reduce the ability of an infiltration BMP to drain properly. If the height of the seasonally high water table extends to within 4 feet (1.2 meters) of the bottom of an infiltration BMP, the site is seldom considered suitable. Given the climate and geology of Southern California, this is typically not an issue, except for some areas adjacent to surface water bodies.

Soil Permeability: The type of soil is an important characteristic that can limit the applicability of a particular BMP at a particular site since the long term percolation rate is governed by soil type. This soil permeability factor is particularly relevant to infiltration BMPs, which should not be applied to sites with infiltration rates of less than 0.27 inch per hour (0.686 centimeters), as

defined by the least permeable layer in the shallow soil profile. This limiting rate excludes most "C" and "D" soils (Soil Classification System), which cannot exfiltrate enough runoff through the subsoil. In addition, extremely permeable sandy soils may not maintain adequate water levels in wet ponds.

Proximity to Foundations and Wells: Since infiltration BMPs divert runoff back into the soil, some development sites may experience difficulty with local seepage, especially if located near a building foundation. Another risk due to diverted runoff through infiltration may be contamination of groundwater supplies. Limited research has been performed to evaluate this risk, however, it is advisable to maintain infiltration BMPs at least 100 feet (30 meters) from drinking water wells. The risk is greater when shallow soils with organic materials are bypassed.

Climatic Region: BMPs should include appropriate designs to address issues of rainfall volume and intensity during wet weather seasons so as to consider the economic feasibility of using such BMPs and/or designs. Typically, the evaluation of long term rainfall records must be considered together with site conditions to properly size structural treatment BMPs. In addition, wet ponds require some continuous flow (dry weather water source) to keep them from stagnating or developing odor and mosquito problems.

Land Consumption: Some sites are too intensively developed or limited in area to allow for some BMPs, such as pond BMPs and porous pavement, which require a large surface area and buffer area

Maximum Depth: To preserve storage capacity for subsequent rain events, keep water from stagnating, and provide optimal pollutant removal conditions, infiltration BMPs must be designed to completely drain within 2 to 3 days after a storm. If the infiltration rates of the underlying soils are slow, the available depth of the infiltration facility may be limited. These restrictions vary depending on whether the facility is a trench, basin, injection well, or porous pavement.

Restricted Land Uses: Certain BMPs can only be applied to particular land uses, and are not broadly applicable for all development sites. Porous pavement can only be used for sites with parking lots not expected to receive heavy car or truck traffic, or much sediment.

High Sediment Input: Most BMPs are unable to handle the large loads of sediment that may be generated during the construction phase of development. Infiltration BMPs are particularly susceptible to rapid clogging and subsequent failure if significant sediment loads are allowed to enter the structure. As a general rule, these BMPs should not be installed until all of the land to be disturbed by construction in the contributing watershed is effectively stabilized and will

remain stabilized. Contractors must often take unusual steps during the actual installation of the infiltration BMPs to prevent soil compaction or contamination by sediment. To prevent clogging of the infiltration BMPs after construction, many designs call for the use of a pre-treatment device to filter sediment and other coarse particles before they reach the infiltration BMP. In addition, in areas where large amounts of fine sediment may occur even in the absence of upstream construction, BMPs such as porous pavement are not recommended.

Landscape Enhancement: If properly designed, many BMP options have the potential to enhance the urban landscape. Wet ponds and wetlands are frequently used to create a waterfront effect in residential developments, and may actually increase the value of the adjacent property. Dry extended detention areas can serve as attractive parks, either manicured or natural in design, or sports fields. Given the typical rainfall patterns in Southern California, these open areas would be available for public use most of the year. Most infiltration BMPs or lined detention areas have a neutral or negative effect on landscape appearance. In general, BMPs may be visually attractive or aesthetically unappealing, depending upon the creativity of the project designer.

D.3 POLLUTANT REMOVAL CAPABILITY

The nature of the pollutant being removed and its concentration often sets an upper limit on the potential removal rate that can be achieved with a given BMP. The pollutant removal capability of a BMP is primarily governed by three interrelated factors: removal mechanisms as affected by the design of the BMP, fraction of the annual runoff volume that is effectively treated, and nature of the urban pollutant being treated.

Pollutants such as sediment and lead (which is typically bound to fine sediment) can be removed effectively by common BMP removal mechanisms, including settling and filtering. Soluble pollutants such as nitrate, phosphate, and some trace metals are more difficult to remove and require biological and/or chemical mechanisms, such as uptake by bacteria, algae, rooted aquatic plants, organic material, terrestrial vegetation, or soils.

D.4 SHORT-TERM AND LONG-TERM COSTS

The appropriateness of a BMP for a particular site can be affected by economic feasibility considerations that encompass short- and long-term cost factors. Short-term costs include installation costs for both materials and labor. Long-term costs include maintenance. To sustain proper function, some BMPs require low level maintenance on a regular and frequent basis, whereas other BMPs require infrequent maintenance of a more extensive nature. Maintenance costs will include the proper disposal of accumulated material. In selecting a control method,

cost considerations—construction, installation, and maintenance—associated with the BMP should be considered.

D.5 RESPONSIBILITY FOR MAINTENANCE

Improper maintenance is one of the most common reasons for water quality controls to not function as designed or to fail entirely. It is important to consider who will be responsible for maintenance of a permanent BMP, and what equipment is required to perform the maintenance properly.

D.6 CONTRIBUTING WATERSHED AREA

The feasibility of a particular BMP depends on the contributing watershed area. A BMP cannot be practically suitable for all urban area sizes. For instance, wet pond BMPs generally require a significant contributing watershed area of greater than 10 acres (4 hectares), and in locales such as Southern California, a dry weather source of water. By contrast, infiltration and vegetative BMPs are applicable for catchments less than 10 acres (4 hectares), due to space, economic, or flow volume constraints.

It should be noted that the contributing watershed area does not have to be limited to the development project site. By using local topography and drainage, the contributing watershed area may be increased or decreased to better accommodate a particular BMP. For example, additional runoff generated away from the development project may be routed to the BMP, thereby increasing total catchment area and making pond options more feasible. Conversely, various portions of the total runoff from a development project site may be diverted to smaller, individual BMPs, thereby decreasing the contributing watershed area and making infiltration and vegetative BMPs more practical.

D.7 ENVIRONMENTAL IMPACT AND ENHANCEMENT

Low Flow Maintenance: Downstream aquatic life may be jeopardized when the natural low flow levels experienced during the dry weather season decline even further because of reduced infiltration in urbanized watersheds. However, this is sometimes offset by irrigation return flows, which may cause unnatural dry weather flow. Infiltration BMPs can contribute significantly to groundwater recharge and may be able to help the watershed better mimic its past hydrologic behavior. Vegetative BMPs such as swales and filter strips appear to have modest potential in this regard, while pond BMPs have little effect in maintaining low flows.

Streambank Erosion Control: Streambank erosion not only contributes large sediment loads to receiving waters, but also has an adverse impact on the habitat quality for downstream aquatic life. Some BMPs, including extended detention ponds, and full exfiltration BMPs, can reduce erosive storm flows enough to keep downstream channels and banks relatively stable, whereas most other BMPs have only marginal capabilities in this regard.

Aquatic/Wildlife Habitat Creation: Some BMP options create wetland or open water areas utilized by waterfowl, marsh birds, and other wildlife. Shallow marshes and wet ponds are particularly well suited for this role, if relatively small investments are made in landscaping design and plant selection. Consideration would have to be given to a dry weather source of water, unless a seasonally wet area is desired. Terrestrial wildlife habitat may be created through the incorporation of BMPs such as wet ponds, extended detention ponds, infiltration basins, and filter strips. Relatively diverse biological communities may further be enhanced through judicious planting of trees, shrubs, and grasses that provide food and cover for the target wildlife.

Appendix E

STANDARD URBAN STORM WATER MITIGATION PLAN

LOS ANGELES COUNTY URBAN RUNOFF AND STORM WATER NPDES PERMIT
STANDARD URBAN STORM WATER MITIGATION PLAN

BACKGROUND

The municipal storm water National Pollutant Discharge Elimination System (NPDES) permit (Los Angeles County Permit) issued to Los Angeles County and 85 cities (Permittees) by the Los Angeles Regional Water Quality Control Board (Regional Board) on July 15, 1996, requires the development and implementation of a program addressing storm water pollution issues in development planning for private projects. The same requirements are applicable to the City of Long Beach under its separate municipal storm water permit (City of Long Beach MS4 Permit), which was issued on June 30, 1999.

The requirement to implement a program for development planning is based on, federal and state statutes including: Section 402 (p) of the Clean Water Act, Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 ("CZARA"), and the California Water Code. The Clean Water Act amendments of 1987 established a framework for regulating storm water discharges from municipal, industrial, and construction activities under the NPDES program. The primary objectives of the municipal storm water program requirements are to:

1. Effectively prohibit non-storm water discharges, and
2. Reduce the discharge of pollutants from storm water conveyance systems to the Maximum Extent Practicable (MEP statutory standard).

The Standard Urban Storm Water Mitigation Plan (SUSMP) was developed as part of the municipal storm water program to address storm water pollution from new Development and Redevelopment by the private sector. This SUSMP contains a list of the minimum required Best Management Practices (BMPs) that must be used for a designated project. Additional BMPs may be required by ordinance or code adopted by the Permittee and applied generally or on a case-by-case basis. The Permittees are required to adopt the requirements set herein in their own SUSMP. Developers must incorporate appropriate SUSMP requirements into their project plans. Each Permittee will approve the project plan as part of the development plan approval process and prior to issuing building and grading permits for the projects covered by the SUSMP requirements.

All discretionary development and redevelopment projects that fall into one of the following categories are subject to these SUSMPs. These categories are:

- Single-Family Hillside Residences
- 100,000 Square Foot Commercial Developments
- Automotive Repair Shops
- Retail Gasoline Outlets
- Restaurants
- Home Subdivisions with 10 to 99 housing units
- Home Subdivisions with 100 or more housing units
- Parking lots 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff

The City of Long Beach permit requires a SUSMP for the following categories only: (i) 10-99 home subdivisions; (ii) 100 or more home subdivisions; (iii) 100,000 or more square foot commercial developments; and (iv) projects located adjacent to or discharging to environmentally sensitive areas. For the remaining five categories, equivalent requirements have been included directly in or are expected to be developed shortly under the City of Long Beach Storm Water Management Plan.

Permittees shall amend codes, and promulgate ordinances, if necessary, not later than January 15, 2001, to give legal effect to the SUSMP requirements. The SUSMP requirements for projects identified herein shall take effect not later than February 15, 2001.

DEFINITIONS

"100,000 Square Foot Commercial Development" means any commercial development that creates at least 100,000 square feet of impermeable area, including parking areas. "Automotive Repair Shop" means a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.

"Best Management Practice (BMP)" means any program, technology, process, siting criteria, operational methods or measures, or engineered systems, which when implemented prevent, control, remove, or reduce pollution.

"Commercial Development" means any development on private land that is not heavy industrial or residential. The category includes, but is not limited to: hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, multi-apartment buildings, car wash facilities, mini-malls and other business complexes, shopping malls, hotels, office buildings, public warehouses and other light industrial complexes.

"Directly Connected Impervious Area (DCIA)" means the area covered by a building, impermeable pavement, and/ or other impervious surfaces, which drains directly into the storm drain without first flowing across permeable land area (e.g. lawns).

"Discretionary Project" means a project which requires the exercise of judgment or deliberation when the public agency or public body decides to approve or disapprove a particular activity, as distinguished from situations where the public agency or body merely has to determine whether there has been conformity with applicable statutes, ordinances, or regulations.

"Greater than (>) 9 unit home subdivision" means any subdivision being developed for 10 or more single-family or multi-family dwelling units.

"Hillside" means property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is 25 percent or greater.

"Infiltration" means the downward entry of water into the surface of the soil.

"New Development" means land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision.

"Parking Lot" means land area or facility for the temporary parking or storage of motor vehicles used personally, for business or for commerce with a lot size of 5,000 square feet or more, or with 25 or more parking spaces.

"Redevelopment" means, on an already developed site, the creation or addition of at least 5,000 square feet of impervious surfaces. Redevelopment includes, but is not limited to: the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/ or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces. Where redevelopment results in an increase of less than 50 percent of the impervious surfaces of a previously existing development, and the existing development was not subject to these SUSMPs, the Design Standards apply only to the addition, and not to the entire development.

"Restaurant" means a stand-alone facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption. (SIC code 5812).

"Retail Gasoline Outlet" means any facility engaged in selling gasoline and lubricating oils.

"Source Control BMP" means any schedules of activities, prohibitions of practices, maintenance procedures, managerial practices or operational practices that aim to prevent storm water pollution by reducing the potential for contamination at the source of pollution.

"Storm Event" means a rainfall event that produces more than 0.1 inch of precipitation and that, which is separated from the previous storm event by at least 72 hours of dry weather.

"Structural BMP" means any structural facility designed and constructed to mitigate the adverse impacts of storm water and urban runoff pollution (e.g. canopy, structural enclosure). The category may include both Treatment Control BMPs and Source Control BMPs.

"Treatment" means the application of engineered systems that use physical, chemical, or biological processes to remove pollutants. Such processes include, but are not limited to, filtration, gravity settling, media adsorption, biodegradation, biological uptake, chemical oxidation and UV radiation.

"Treatment Control BMP" means any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media adsorption or any other physical, biological, or chemical process.

Where provisions of the SUSMP requirements conflict with established local codes, (e.g., specific language of signage used on storm drain stenciling), the Permittee may continue the local practice and modify the SUSMP to be consistent with the code, except that to the extent that the standards in the SUSMP are more stringent than those under local codes, such more stringent standards shall apply.

1. PEAK STORM WATER RUNOFF DISCHARGE RATES

Post-development peak storm water runoff discharge rates shall not exceed the estimated pre-development rate for developments where the increased peak storm water discharge rate will result in increased potential for downstream erosion.

2. CONSERVE NATURAL AREAS

If applicable, the following items are required and must be implemented in the site layout during the subdivision design and approval process, consistent with applicable General Plan and Local Area Plan policies:

Concentrate or cluster Development on portions of a site while leaving the remaining land in a natural undisturbed condition.

Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.

Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.

Promote natural vegetation by using parking lot islands and other landscaped areas.

Preserve riparian areas and wetlands.

3. MINIMIZE STORM WATER POLLUTANTS OF CONCERN

Storm water runoff from a site has the potential to contribute oil and grease, suspended solids, metals, gasoline, pesticides, and pathogens to the storm water conveyance system. The development must be designed so as to minimize, to the maximum extent practicable, the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas (DCIA), to the storm water conveyance system as approved by the building official. Pollutants of concern, consist of any pollutants that exhibit one or more of the following characteristics: current loadings or historic deposits of the pollutant are impacting the beneficial uses of a receiving water, elevated levels of the pollutant are found in sediments of a receiving water and/or have the potential to bioaccumulate in organisms therein, or the detectable inputs of the pollutant are at a concentrations or loads considered potentially toxic to humans and/or flora and fauna.

In meeting this specific requirement, "minimization of the pollutants of concern" will require the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in that runoff to the Maximum Extent Practicable. Those BMPs best suited for that purpose are those listed in the *California Storm Water Best Management Practices Handbooks*; *Caltrans Storm Water Quality Handbook: Planning and Design Staff Guide*; *Manual for Storm Water Management in Washington State*; *The Maryland Stormwater Design Manual*; *Florida Development Manual: A Guide to Sound Land and Water Management*; Denver *Urban Storm Drainage Criteria Manual, Volume 3 – Best Management Practices* and *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* , USEPA Report No. EPA-840-B-92-002, as "likely to have significant impact" beneficial to water quality for targeted pollutants that are of concern at the site in question. However, it is possible that a combination of BMPs not so designated, may in a particular circumstance, be better suited to maximize the reduction of the pollutants.

Examples of BMPs that can be used for minimizing the introduction of pollutants of concern generated from site runoff are identified in Table 2. Any BMP not specifically approved by the Regional Board in Resolution No. 99-03, "Approving Best Management Practices for Municipal Storm Water and Urban

Runoff Programs in Los Angeles County", for development planning may be used if they have been recommended in one of the above references.

4. PROTECT SLOPES AND CHANNELS

Project plans must include BMPs consistent with local codes and ordinances and the SUSMP to decrease the potential of slopes and/or channels from eroding and impacting storm water runoff:

- Convey runoff safely from the tops of slopes and stabilize disturbed slopes.
- Utilize natural drainage systems to the maximum extent practicable
- Control or reduce or eliminate flow to natural drainage systems to the maximum extent practicable
- Stabilize permanent channel crossings.
- Vegetate slopes with native or drought tolerant vegetation.
- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion, with the approval of all agencies with jurisdiction, e.g., the U.S. Army Corps of Engineers and the California Department of Fish and Game

5. PROVIDE STORM DRAIN SYSTEM STENCILING AND SIGNAGE

Storm drain stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets. The stencil contains a brief statement that prohibits the dumping of improper materials into the storm water conveyance system. Graphical icons, either illustrating anti-dumping symbols or images of receiving water fauna, are effective supplements to the anti-dumping message.

- All storm drain inlets and catch basins within the project area must be stenciled with prohibitive language (such as: "NO DUMPING – DRAINS TO OCEAN") and/or graphical icons to discourage illegal dumping.
- Signs and prohibitive language and/or graphical icons, which prohibit illegal dumping, must be posted at public access points along channels and creeks within the project area.
- Legibility of stencils and signs must be maintained.

6. PROPERLY DESIGN OUTDOOR MATERIAL STORAGE AREAS

Outdoor material storage areas refer to storage areas or storage facilities solely for the storage of materials. Improper storage of materials outdoors may provide an opportunity for toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to enter the storm water conveyance system.

Where proposed project plans include outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system, the following Structural or Treatment BMPs are required:

- Materials with the potential to contaminate storm water must be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the storm water conveyance system; or (2) protected by secondary containment structures such as berms, dikes, or curbs.
- The storage area must be paved and sufficiently impervious to contain leaks and spills.
- The storage area must have a roof or awning to minimize collection of storm water within the secondary containment area.

7. PROPERLY DESIGN TRASH STORAGE AREAS

A trash storage area refers to an area where a trash receptacle or receptacles are located for use as a repository for solid wastes. Loose trash and debris can be easily transported by the forces of water or wind into nearby storm drain inlets, channels, and/or creeks. All trash container areas must meet the following Structural or Treatment Control BMP requirements (individual single family residences are exempt from these requirements):

- Trash container areas must have drainage from adjoining roofs and pavement diverted around the area(s).
- Trash container areas must be screened or walled to prevent off-site transport of trash.

8. PROVIDE PROOF OF ONGOING BMP MAINTENANCE

Improper maintenance is one of the most common reasons why water quality controls will not function as designed or which may cause the system to fail entirely. It is important to consider who will be responsible for maintenance of a permanent BMP, and what equipment is required to perform the maintenance properly. As part of project review, if a project applicant has included or is required to include, Structural or Treatment Control BMPs in project plans, the Permittee shall require that the applicant provide verification of maintenance provisions through such means as may be appropriate, including, but not limited to legal agreements, covenants, CEQA mitigation requirements and/or Conditional Use Permits.

For all properties, the verification will include the developer's signed statement, as part of the project application, accepting responsibility for all structural and treatment control BMP maintenance until the time the property is transferred and, where applicable, a signed agreement from the public entity assuming responsibility for Structural or Treatment Control BMP maintenance. The transfer of property to a private or public owner must have conditions requiring the recipient to assume responsibility for maintenance of any Structural or Treatment Control BMP to be included in the sales or lease agreement for that property, and will be the owner's responsibility. The condition of transfer shall include a provision that the property owners conduct maintenance inspection of all Structural or Treatment Control BMPs at least once a year and retain proof of inspection. For residential properties where the Structural or Treatment Control BMPs are located within a common area that will be maintained by a homeowner's association, language regarding the responsibility for maintenance must be included in the projects conditions, covenants and restrictions (CC&Rs). Printed educational materials will be required to accompany the first deed transfer to highlight the existence of the requirement and to provide information on what storm water management facilities are present, signs that maintenance is needed, how the necessary maintenance can be performed, and assistance that the Permittee can provide. The transfer of this information shall also be required with any subsequent sale of the property.

If Structural or Treatment Control BMPs are located within a public area proposed for transfer, they will be the responsibility of the developer until they are accepted for transfer by the County or other appropriate public agency. Structural or Treatment Control BMPs proposed for transfer must meet design standards adopted by the public entity for the BMP installed and should be approved by the County or other appropriate public agency prior to its installation.

9. DESIGN STANDARDS FOR STRUCTURAL OR TREATMENT CONTROL BMPs

Structural or Treatment control BMPs selected for use at any project covered by this SUSMP shall meet the design standards of this Section unless specifically exempted.

Post-construction Structural or Treatment Control BMPs shall be designed to:

A. mitigate (infiltrate or treat) storm water runoff from either:

1. the 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998)*, or
2. the volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in *California Stormwater Best Management Practices Handbook – Industrial/ Commercial*, (1993), or
3. the volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or
4. the volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event,

AND

B. control peak flow discharge to provide stream channel and over bank flood protection, based on flow design criteria selected by the local agency.

Limited Exclusion

Restaurants, where the land area for development or redevelopment is less than 5,000 square feet, and Retail Gasoline Outlets are excluded from the numerical Structural or Treatment Control BMP design standard requirement only.

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10. PROVISIONS APPLICABLE TO INDIVIDUAL PRIORITY PROJECT CATEGORIES

REQUIREMENTS

A. 100,000 SQUARE FOOT COMMERCIAL DEVELOPMENTS

1. PROPERLY DESIGN LOADING/UNLOADING DOCK AREAS

Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:

- Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.
- Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.

2. PROPERLY DESIGN REPAIR/MAINTENANCE BAYS

Oil and grease, solvents, car battery acid, coolant and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:

- Repair/maintenance bays must be indoors or designed in such a way that doesn't allow storm water run-on or contact with storm water runoff.
- Design a repair/maintenance bay drainage system to capture all wash water, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

3. PROPERLY DESIGN VEHICLE/EQUIPMENT WASH AREAS

The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for washing/steam cleaning of vehicles and equipment. The area in the site design must be:

- Self-contained and/ or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer.

B. RESTAURANTS

1. PROPERLY DESIGN EQUIPMENT/ACCESSORY WASH AREAS

The activity of outdoor equipment/accessory washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for the washing/steam cleaning of equipment and accessories. This area must be:

- Self-contained, equipped with a grease trap, and properly connected to a sanitary sewer.
- If the wash area is to be located outdoors, it must be covered, paved, have secondary containment, and be connected to the sanitary sewer.

C. RETAIL GASOLINE OUTLETS

1. PROPERLY DESIGN FUELING AREA

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the storm water conveyance system. The project plans must include the following BMPs:

- The fuel dispensing area must be covered with an overhanging roof structure or canopy. The canopy's minimum dimensions must be equal to or greater than the area within the grade break. The canopy must not drain onto the fuel dispensing area, and the canopy downspouts must be routed to prevent drainage across the fueling area.
- The fuel dispensing area must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.
- The fuel dispensing area must have a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water to the extent practicable.
- At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.

D. AUTOMOTIVE REPAIR SHOPS

1. PROPERLY DESIGN FUELING AREA

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the storm water conveyance system. Therefore, design plans, which include fueling areas, must contain the following:

- The fuel dispensing area should be covered with an overhanging roof structure or canopy. The cover's minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area and the downspouts must be routed to prevent drainage across the fueling area.
- The fuel dispensing areas must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.
- The fuel dispensing area must have a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water.
- At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.

2. PROPERLY DESIGN REPAIR/MAINTENANCE BAYS

Oil and grease, solvents, car battery acid, coolant and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:

- Repair/maintenance bays must be indoors or designed in such a way that doesn't allow storm water run-on or contact with storm water runoff.

- Design a repair/maintenance bay drainage system to capture all wash-water, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

3. PROPERLY DESIGN VEHICLE/EQUIPMENT WASH AREAS

The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for washing/steam cleaning of vehicles and equipment. This area must be:

- Self-contained and/or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer or to a permitted disposal facility.

4. PROPERLY DESIGN LOADING/UNLOADING DOCK AREAS

Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:

- Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.
- Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.

E. PARKING LOTS

1. PROPERLY DESIGN PARKING AREA

Parking lots contain pollutants such as heavy metals, oil and grease, and polycyclic aromatic hydrocarbons that are deposited on parking lot surfaces by motor vehicles. These pollutants are directly transported to surface waters. To minimize the offsite transport of pollutants, the following design criteria are required:

- Reduce impervious land coverage of parking areas
- Infiltrate runoff before it reaches storm drain system.
- Treat runoff before it reaches storm drain system

2. PROPERLY DESIGN TO LIMIT OIL CONTAMINATION AND PERFORM MAINTENANCE

Parking lots may accumulate oil, grease, and water insoluble hydrocarbons from vehicle drippings and engine system leaks.

- Treat to remove oil and petroleum hydrocarbons at parking lots that are heavily used (e.g. fast food outlets, lots with 25 or more parking spaces, sports event parking lots, shopping malls, grocery stores, discount warehouse stores)
- Ensure adequate operation and maintenance of treatment systems particularly sludge and oil removal, and system fouling and plugging prevention control

11. WAIVER

A Permittee may, through adoption of an ordinance or code incorporating the treatment requirements of the SUSMP, provide for a waiver from the requirement if impracticability for a specific property can be established. A waiver of impracticability shall be granted only when all other Structural or Treatment Control BMPs have been considered and rejected as infeasible. Recognized situations of impracticability include, (i) extreme limitations of space for treatment on a redevelopment project, (ii) unfavorable or unstable soil conditions at a site to attempt infiltration, and (iii) risk of ground water contamination because a known unconfined aquifer lies beneath the land surface or an existing or potential underground source of drinking water is less than 10 feet from the soil surface. Any other justification for impracticability must be separately petitioned by the Permittee and submitted to the Regional Board for consideration. The Regional Board may consider approval of the waiver justification or may delegate the authority to approve a class of waiver justifications to the Regional Board Executive Officer. The supplementary waiver justification becomes recognized and effective only after approval by the Regional Board or the Regional Board Executive Officer. A waiver granted by a Permittee to any development or redevelopment project may be revoked by the Regional Board Executive Officer for cause and with proper notice upon petition.

12. LIMITATION ON USE OF INFILTRATION BMPs

Three factors significantly influence the potential for storm water to contaminate ground water. They are (i) pollutant mobility, (ii) pollutant abundance in storm water, (iii) and soluble fraction of pollutant. The risk of contamination of groundwater may be reduced by pretreatment of storm water. A discussion of limitations and guidance for infiltration practices is contained in, *Potential Groundwater Contamination from Intentional and Non-Intentional Stormwater Infiltration, Report No. EPA/600/R-94/051, USEPA (1994).*

In addition, the distance of the groundwater table from the infiltration BMP may also be a factor determining the risk of contamination. A water table distance separation of ten feet depth in California presumptively poses negligible risk for storm water not associated with industrial activity or high vehicular traffic.

Infiltration BMPs are not recommended for areas of industrial activity or areas subject to high vehicular traffic (25,000 or greater average daily traffic (ADT) on main roadway or 15,000 or more ADT on any intersecting roadway) unless appropriate pretreatment is provided to ensure groundwater is protected and the infiltration BMP is not rendered ineffective by overload.

13. ALTERNATIVE CERTIFICATION FOR STORM WATER TREATMENT MITIGATION

In lieu of conducting detailed BMP review to verify Structural or Treatment Control BMPs adequacy, a Permittee may elect to accept a signed certification from a Civil Engineer or a Licensed Architect registered in the State of California, that the plan meets the criteria established herein. The Permittee is encouraged to verify that certifying person(s) have been trained on BMP design for water quality, not more than two years prior to the signature date. Training conducted by an organization with storm water BMP design expertise (e.g., a University, American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, or the California Water Environment Association) may be considered qualifying.

14. RESOURCES AND REFERENCES

TABLE 1. RESOURCES AND REFERENCES

SUGGESTED RESOURCES	HOW TO GET A COPY
Start at the Source (1999) by Bay Area Stormwater Management Agencies Association Detailed discussion of permeable pavements and alternative driveway designs presented.	Bay Area Stormwater Management Agencies Association 2101 Webster Street Suite 500 Oakland, CA 510-286-1255
Design of Stormwater Filtering Systems (1996) by Richard A. Claytor and Thomas R. Schuler Presents detailed engineering guidance on ten different storm water-filtering systems.	Center for Watershed Protection 8391 Main Street Ellicott City, MD 21043 410-461-8323
Better Site Design: A Handbook for Changing Development Rules in Your Community (1998) Presents guidance for different model development alternatives.	Center for Watershed Protection 8391 Main Street Ellicott City, MD 21043 410-461-8323
Design Manual for Use of Bioretention in Stormwater Management (1993) Presents guidance for designing bioretention facilities.	Prince George's County Watershed Protection Branch 9400 Peppercorn Place, Suite 600 Landover, MD 20785
Operation, Maintenance and Management of Stormwater Management (1997) Provides a thorough look at stormwater practices including, planning and design considerations, programmatic and regulatory aspects, maintenance considerations, and costs.	Watershed Management Institute, Inc. 410 White Oak Drive Crawfordville, FL 32327 850-926-5310
California Storm Water Best Management Practices Handbooks (1993) for Construction Activity, Municipal, and Industrial/Commercial Presents a description of a large variety of Structural BMPs, Treatment Control, BMPs and Source Control BMPs	Los Angeles County Department of Public Works Cashiers Office 900 S. Fremont Avenue Alhambra, CA 91803 626-458-6959
Second Nature: Adapting LA's Landscape for Sustainable Living (1999) by Tree People Detailed discussion of BMP designs presented to conserve water, improve water quality, and achieve flood protection.	Tree People 12601 Mullholland Drive Beverly Hills, CA 90210 818-753-4600 (?)

TABLE 1. RESOURCES AND REFERENCES (continued)

SUGGESTED RESOURCES	HOW TO GET A COPY
Florida Development Manual: A Guide to Sound Land and Water Management (1988) Presents detailed guidance for designing BMPs	Florida Department of the Environment 2600 Blairstone Road, Mail Station 3570 Tallahassee, FL 32399 850-921-9472
Stormwater Management in Washington State (1999) Vols. 1-5 Presents detailed guidance on BMP design for new development and construction.	Department of Printing State of Washington Department of Ecology P.O. Box 798 Olympia, WA 98507-0798 360-407-7529
Maryland Stormwater Design Manual (1999) Presents guidance for designing storm water BMPs	Maryland Department of the Environment 2500 Broening Highway Baltimore, MD 21224 410-631-3000
Texas Nonpoint Source Book – Online Module (1998)www.txnpsbook.org Presents BMP design and guidance information on-line	Texas Statewide Storm Water Quality Task Force North Central Texas Council of Governments 616 Six Flags Drive Arlington, TX 76005 817-695-9150
Urban Storm Drainage, Criteria Manual – Volume 3, Best Management Practices (1999) Presents guidance for designing BMPs	Urban Drainage and Flood Control District 2480 West 26th Avenue, Suite 156-B Denver, CO 80211 303-455-6277
Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (1993) Report No. EPA–840-B-92-002. Provides an overview of, planning and design considerations, programmatic and regulatory aspects, maintenance considerations, and costs.	National Technical Information Service U.S. Department of Commerce Springfield, VA 22161 800-553-6847
National Stormwater Best Management Practices (BMP) Database, Version 1.0 Provides data on performance and evaluation of storm water BMPs	American Society of Civil Engineers 1801 Alexander Bell Drive Reston, VA 20191 703-296-6000
Caltrans Storm Water Quality Handbook: Planning and Design Staff Guide (Best Management Practices Handbooks (1998) Presents guidance for design of storm water BMPs	California Department of Transportation P.O. Box 942874 Sacramento, CA 94274-0001 916-653-2975

TABLE 2
EXAMPLE BEST MANAGEMENT PRACTICES (BMPs)

The following are examples of BMPs that can be used for minimizing the introduction of pollutants of concern that may result in significant impacts, generated from site runoff to the storm water conveyance system. (See Table 1: Suggested Resources for additional sources of information):

- Provide reduced width sidewalks and incorporate landscaped buffer areas between sidewalks and streets. However, sidewalk widths must still comply with regulations for the Americans with Disabilities Act and other life safety requirements.
- Design residential streets for the minimum required pavement widths needed to comply with all zoning and applicable ordinances to support travel lanes; on-street parking; emergency, maintenance, and service vehicle access; sidewalks; and vegetated open channels.
- Comply with all zoning and applicable ordinances to minimize the number of residential street cul-de-sacs and incorporate landscaped areas to reduce their impervious cover. The radius of cul-de-sacs should be the minimum required to accommodate emergency and maintenance vehicles. Alternative turnarounds should be considered.
- Use permeable materials for private sidewalks, driveways, parking lots, or interior roadway surfaces (examples: hybrid lots, parking groves, permeable overflow parking, etc.).
- Use open space development that incorporates smaller lot sizes.
- Reduce building density.
- Comply with all zoning and applicable ordinances to reduce overall lot imperviousness by promoting alternative driveway surfaces and shared driveways that connect two or more homes together.
- Comply with all zoning and applicable ordinances to reduce the overall imperviousness associated with parking lots by providing compact car spaces, minimizing stall dimensions, incorporating efficient parking lanes, and using pervious materials in spillover parking areas.
- Direct rooftop runoff to pervious areas such as yards, open channels, or vegetated areas, and avoid routing rooftop runoff to the roadway or the storm water conveyance system.
- Vegetated swales and strips
- Extended/dry detention basins
- Infiltration basin
- Infiltration trenches
- Wet ponds
- Constructed wetlands
- Oil/Water separators
- Catch basin inserts
- Continuous flow deflection/ separation systems
- Storm drain inserts
- Media filtration
- Bioretention facility
- Dry-wells
- Cisterns
- Foundation planting
- Catch basin screens
- Normal flow storage/ separation systems
- Clarifiers
- Filtration systems
- Primary waste water treatment systems

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Appendix F
Guidelines for General Plan Modification

The State Planning and Zoning Law provides that requirements placed on land development projects must be compatible with a community's General Plan. Therefore, storm water pollution control objectives for land development should be reflected in the appropriate policies, goals, and objectives of each Permittee's General Plan. Whenever elements of a Permittee's General Plan are significantly rewritten, the Permittee will incorporate watershed and storm water management considerations into the General Plan elements being rewritten. General Plan elements that may be particularly appropriate to reflect watershed and storm water quality considerations are:

- growth management;
- land use;
- circulation (i.e., transportation);
- public facilities;
- open space; and
- conservation.

When updating a General Plan, special attention should be given to how the plan addresses water quality protection, development goals and policies, open space goals and policies, preservation of or integration with natural features, and water conservation policies. Typically, most General Plans have provisions that protect water quality and the environment.

Adapting a General Plan to incorporate storm water quality concerns may be as simple as modifying existing text so that it specifically includes storm water quality and protection. The General Plan should include goals and policies in its various elements that are affected by land development, and which require mitigation of storm water quality impacts from land development projects. The General Plan land use map should conform to revised storm water quality policies and eliminate conflicts among land use districts, permitted land uses, and storm water-specific goals and policies.

Storm water quality may be influenced by controlling the type, location, and density of development. Such controls may be established through policies commonly found in the land use and open space elements of the General Plan (e.g., development policies, development location guidelines, open space policies, policies on preservation of and integration with natural features). It is usually advisable to establish such policies through a storm water quality master plan, which evaluates proposed development patterns, their impact on the environment, and the pollution control effectiveness of these policies. Sections of the General Plan that address overall water quality, environmental protection, water resources conservation, and landscaping may be modified. A section could be added that requires compliance with existing NPDES

permits and the Clean Water Act. Changes or additions to General Plans should include objectives such as:

- minimizing, to the maximum extent practicable, the impacts from storm water runoff on the biological integrity of natural drainage systems and water bodies;
- putting emphasis on cumulative storm water impacts and the need to mitigate cumulative impacts to less than significant levels;
- maximizing, to the maximum extent practicable, the percentage of permeable surfaces to allow more percolation of storm water runoff into the ground;
- minimizing, to the maximum extent practicable, the amount of storm water directed to impermeable areas and to the municipal separate storm sewer system;
- linking groundwater and storm water flows so that storm water is considered in the hydrologic cycle;
- building storm water pollution prevention requirements into other existing requirements (e.g., landscaping) to ensure that requirements do not themselves indirectly encourage practices that can cause pollution;
- requiring proposed projects to be conditioned to comply with California's general storm water permits for construction and industrial activities and the Clean Water Act;
- requiring erosion and sediment controls for developments to minimize erosion damage and sediment transport off site;
- requiring proposed projects to be conditioned with reasonable limits on the clearing of vegetation from development sites, and limits on the length of time during which soil may be exposed; and
- requiring proposed projects to be conditioned with appropriate permanent controls to reduce storm water pollutant loads discharged from the development site (including parking lots) to the maximum extent practicable.

Additional policies, goals, or objectives may be beneficial in General Plans to stress the importance of storm water quality control or to implement certain types of storm water management programs. Changing a General Plan to incorporate storm water quality concerns may be a simple process of adding the word "quality" to items referencing storm water quantity or adding the word "storm water" to items referencing water quality.

Appendix G

Storm Water Quality Management Program

Developer Information For Project Planning, Design, And Construction

G.1 PROGRAM SUMMARY

All projects submitted to the City for review and approval are required to comply with the requirements of the City's storm water quality management program. At the time of submittal of an application for project review and approval, the project will be screened to determine if a project is Exempt or will be considered a Planning Priority Project and/or Construction Priority Project. Development Projects considered to be either Planning Priority Projects or Construction Priority Projects will be subject to special requirements as part of the City's storm water quality management program.

Federal regulations for controlling the discharge of pollutants from storm water drainage systems were issued by the U.S. Environmental Protection Agency (USEPA) in 1990. These regulations require that discharges from defined municipal separate storm sewer systems, industrial facilities, and construction activities must obtain and comply with National Pollutant Discharge Elimination System (NPDES) permit conditions intended to reduce or eliminate the discharge of pollutants from storm water drainage systems. In California, the USEPA has delegated its authority to issue NPDES permits to the State Water Resources Control Board and the nine Regional Water Quality Control Boards.

The City of _____ is a Permittee with Los Angeles County in the California Regional Water Quality Control Board, Los Angeles Region, Order No. 96-054, NPDES Permit No. CAS614001 ("Permit"). As a Permittee, the City has the responsibility for implementing the requirements of that Permit within the City.

A requirement of the Permit is the implementation of practices during the planning, design, and construction of a project which reduce or eliminate the potential for discharge of pollutants from the storm water drainage system, and maximize pervious areas and storm water infiltration to the extent possible. Every project submitted to the City for review and approval, which is determined to be either a Planning Priority Project or a Construction Priority Project will be required to incorporate such practices.

G.1.1 Project Planning and Design

For project planning and design, a Planning Priority Project is defined in the Permit as "development and redevelopment projects requiring discretionary approval which the Building Official (or equivalent municipal authority) determines may have a potential significant effect on storm water quality." The checklist that the City will use in determining if a development project is Exempt or is a Planning Priority Project is provided as Attachment G1.

G.1.2 Project Construction

Construction Priority Projects will be identified using the following criteria:

- The project is not exempt from the Development Construction component of the City's storm water quality management program and not subject to the General Construction Permit; and
- The project will result in soil disturbance of more than 2 acres of land; or
- The project is in or adjacent to an environmentally sensitive area[7]; or
- The project is located in a designated hillside area and soil disturbance will occur at the project site in the rainy season.

Determination of whether a project is a Construction Priority Project will be made by the project applicant and then evaluated and approved by the City according to these criteria listed above.

The City may exempt certain types of projects from the program that pose a minimum risk of storm water pollution. For example, the City considers the following construction projects to be exempt:

- routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility;
- emergency construction activities required to immediately protect public health and safety;
- interior remodeling with no outside exposure of construction materials or construction waste to storm water;
- mechanical permit work;
- electrical permit work, and
- sign permit work.

G.2 GOALS AND OBJECTIVES

Development of any site creates the potential for pollution of storm water runoff from the site. Storm water pollution can occur both during project construction and after construction is complete and the project site is in use. The City's storm water quality management program has

[7] Since the Permit does not define "designated environmentally sensitive area," Permittees will designate areas within their jurisdiction as "environmentally sensitive" utilizing criteria such as, but not limited to, the presence of the following: endangered, threatened, or rare species or their habitats; locally designated species (e.g., heritage trees); locally designated natural communities (e.g., oak forest, coastal habitat, etc.); and wildlife dispersal or migration corridors.

been developed to provide a process by which various measures can be implemented to control and minimize the potential for pollution from storm water drainage systems.

At the beginning of the planning phase for a site, the developer must consider storm water and urban runoff and the potential for the discharge of pollutants from the storm water drainage system of the project site. Activities that will occur during the construction phase and later when the site is being used for its planned function must be evaluated for this potential. Consideration of potential pollution via urban and storm water runoff at the early stages of a project will allow the developer to incorporate design measures that will reduce the potential for discharge of pollutants from the project via the storm water drainage system. These measures can become an integral part of the project design without creating a significant adverse impact to the project development program.

During construction of a project, the developer and/or contractor must implement measures to effectively prohibit non-storm water discharges to the storm water drainage system, and to reduce discharge of pollutants via the storm water drainage system to the maximum extent practicable.

G.3 BEST MANAGEMENT PRACTICES

Reduction of pollutants in discharges from storm water drainage systems can be accomplished through the incorporation of best management practices (BMPs) during the project planning, design, and construction phases. BMPs are those storm water management practices selected for implementation by meeting the Maximum Extent Practicable (MEP) criteria. MEP may be considered as:

> The extent of implementation of storm water management practices that are effective at reducing storm water pollution except when any of the following conditions are met: (1) other effective management practices would achieve greater or substantially the same pollution control benefits; (2) the management practice would not be technically feasible; (3) the cost of management practice implementation would greatly outweigh the probable pollution control benefits; or (4) implementation of the management practice would compromise other legal and institutional constraints, expectations, or obligations imposed by federal or state statute or case law.

The BMPs described in the Planning and Design Information and Construction Information must be considered during the planning, design, and construction phases of a project (as applicable) to effectively prohibit non-storm water discharges, and to reduce the discharge of pollutants to the storm water drainage system. The Standard Urban Storm Water Mitigation Plan (SUSMP) provides the minimum required post-construction BMPs for eight different categories of development and redevelopment projects.

These BMPs have been selected from the *California Storm Water Best Management Practices Handbook, Municipal, Industrial, and Construction Volumes* (May 1993). These handbooks contain a full description of each BMP and provide guidance for its implementation. Copies of the handbooks may be obtained from:

Los Angeles County Dept. of Public Works
Cashiers Office
900 S. Fremont Avenue
Alhambra, CA 91803
626-458-6959

OR

Blue Print Service
1700 Jefferson Street
Oakland, CA 94612
Telephone: (510) 444-6771
Telefax: (510) 444-1262

G.4 INFORMATION AVAILABLE

To assist the developer and contractor in meeting the goals and objectives of the City's storm water management program, informational materials specific to the planning and design phase or specific to the construction phase have been prepared. These materials and copies of the applicable City ordinances may be obtained from the public counter.

G.5 REFERENCE MATERIALS

In addition to the *California Storm Water Best Management Practices Handbook* previously noted in Section G.3, the table that follows provides a list of references which developers and contractors may find useful during project planning, design, and construction:

SUGGESTED RESOURCES	HOW TO GET A COPY
Start at the Source (1999) by Bay Area Stormwater Management Agencies Association Detailed discussion of permeable pavements and alternative driveway designs presented.	Bay Area Stormwater Management Agencies Association 2101 Webster Street Suite 500 Oakland, CA 510-286-1255
Design of Stormwater Filtering Systems (1996) by Richard A. Claytor and Thomas R. Schuler Presents detailed engineering guidance on ten different storm water-filtering systems.	Center for Watershed Protection 8391 Main Street Ellicott City, MD 21043 410-461-8323
Better Site Design: A Handbook for Changing Development Rules in Your Community (1998) Presents guidance for different model development alternatives.	Center for Watershed Protection 8391 Main Street Ellicott City, MD 21043 410-461-8323
Design Manual for Use of Bioretention in Stormwater Management (1993) Presents guidance for designing bioretention facilities.	Prince George's County Watershed Protection Branch 9400 Peppercorn Place, Suite 600 Landover, MD 20785
Operation, Maintenance and Management of Stormwater Management (1997) Provides a thorough look at stormwater practices including, planning and design considerations, programmatic and regulatory aspects, maintenance considerations, and costs.	Watershed Management Institute, Inc. 410 White Oak Drive Crawfordville, FL 32327 850-926-5310
California Storm Water Best Management Practices Handbooks (1993) for Construction Activity, Municipal, and Industrial/Commercial Presents a descnption of a large variety of Structural BMPs, Treatment Control, BMPs and Source Control BMPs	Los Angeles County Department of Public Works Cashiers Office 900 S. Fremont Avenue Alhambra, CA 91803 626-458-6959
Second Nature: Adapting LA's Landscape for Sustainable Living (1999) by Tree People Detailed discussion of BMP designs presented to conserve water, improve water quality, and achieve flood protection.	Tree People 12601 Mullholland Drive Beverly Hills, CA 90210 818-753-4600 (?)
Florida Development Manual: A Guide to Sound Land and Water Management (1988) Presents detailed guidance for designing BMPs	Florida Department of the Environment 2600 Blairstone Road, Mail Station 3570 Tallahassee, FL 32399 850-921-9472
Stormwater Management in Washington State (1999) Vols. 1-5 Presents detailed guidance on BMP design for new development and construction.	Department of Printing State of Washington Department of Ecology P.O. Box 798 Olympia, WA 98507-0798 360-407-7529

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SUGGESTED RESOURCES	HOW TO GET A COPY
Maryland Stormwater Design Manual (1999) Presents guidance for designing storm water BMPs	Maryland Department of the Environment 2500 Broening Highway Baltimore, MD 21224 410-631-3000
Texas Nonpoint Source Book – Online Module (1998)www.txnpsbook.org Presents BMP design and guidance information on-line	Texas Statewide Storm Water Quality Task Force North Central Texas Council of Governments 616 Six Flags Drive Arlington, TX 76005 817-695-9150
Urban Storm Drainage, Criteria Manual – Volume 3, Best Management Practices (1999) Presents guidance for designing BMPs	Urban Drainage and Flood Control District 2480 West 26th Avenue, Suite 156-B Denver, CO 80211 303-455-6277
Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (1993) Report No. EPA–840-B-92-002. Provides an overview of, planning and design considerations, programmatic and regulatory aspects, maintenance considerations, and costs.	National Technical Information Service U.S. Department of Commerce Springfield, VA 22161 800-553-6847
National Stormwater Best Management Practices (BMP) Database, Version 1.0 Provides data on performance and evaluation of storm water BMPs	American Society of Civil Engineers 1801 Alexander Bell Drive Reston, VA 20191 703-296-6000
Caltrans Storm Water Quality Handbook: Planning and Design Staff Guide (Best Management Practices Handbooks (1998) Presents guidance for design of storm water BMPs	California Department of Transportation P.O. Box 942874 Sacramento, CA 94274-0001 916-653-2975

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Attachment G1

Storm Water Quality Management Program
Developer Information For Project Planning, Design, And Construction

Attachment G1
Storm Water Quality Management Program
Developer Information For Project Planning, Design, And Construction

Checklist for Categorizing Discretionary Development Planning Projects as Priority or Exempt

Project Name: _____

Project Location: _____

Description of Project: _____

Part A. Proposed Discretionary Project Is:	Yes	No
1. A single-family hillside residence		
2. A 100,000+ square-foot commercial development		
3. An automotive repair shop (SIC codes 5013, 5014, 5541, 7532-7534, and 7536-7539)		
4. A retail gasoline outlet		
5. A restaurant (SIC code 5812)		
6. A home subdivision with 10 to 99 housing units		
7. A home subdivision with 100 or more housing units		
8. Parking lot 5,000 square feet or more or with 25 or more parking spaces, and potentially exposed to storm water runoff		

If all answers to Part A are No, continue to Part B.

Part B. Proposed Discretionary Project Characteristics[8]:	Yes	No
1. Vehicle or equipment fueling areas?		
2. Vehicle or equipment maintenance areas, including washing?		
3. Commercial or industrial waste handling or storage, excluding typical office or household waste?		
4. Outdoor handling or storage of hazardous materials or waste?		
5. Hillside location (as defined by the local jurisdiction)?		
6. Outdoor work areas for activities such as, but not limited to: welding; cutting; metal fabrication; assembly; application of paints, coatings, or finishes; pre-cast concrete fabrication; etc.?		
7. Location adjoining to, bisected by, or directly discharging to a designated environmentally sensitive area[9], riparian corridor, or wetland?		
8. A 100,000+ square-foot industrial development?		
9. Outdoor animal confinement (e.g., stables, kennels, etc.)?		

EXEMPT PROJECT: Every question in Part A and Part B is answered "NO."

PRIORITY PROJECT: Any question in Part A or Part B is answered "YES."

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[8] Activities or materials potentially exposed to storm water and not protected by storm-resistant sheltering. Activities include industrial and commercial facilities operations and construction work. Materials include material handling equipment, industrial machinery, raw materials, intermediate products, byproducts, and waste products however packaged.

[9] The Permit does not define "designated environmentally sensitive area." Examples of such areas may be wetlands, habitats of endangered, threatened, or rare species, wildlife dispersal or migration corridors, areas of locally-designated species such as heritage trees, or locally-designated natural communities such as oak forest or coastal habitat.

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Appendix H

Developer Information For Project Planning And Design

H.1 BMP SELECTION PROCESS FOR PROJECT PLANNING AND DESIGN

In planning a development project, the designer must answer three key questions with respect to storm water quality control: (1) what kind of storm water quality controls are needed?; (2) where should the controls be implemented?; and (3) how much control is enough? In order to answer these questions, the designer should document the process used to identify potential storm water quality problems, develop design objectives, formulate and evaluate alternatives, select the most appropriate alternatives, and design the plan.

A list of recommended BMPs for development planning and design has been compiled, and a process has been identified for selecting the appropriate BMPs for a specific project. This list of BMPs and the selection process are appropriate for use in addressing site planning issues and post-construction site uses for development projects. BMPs should be selected based upon criteria such as: type of development and its related potential for contributing to storm water pollution, environmental benefit to be gained, pollutant removal effectiveness, economic and technical feasibility, ease of maintenance for ongoing implementation of BMPs, and consistency with other environmental mandates.

The recommended BMP selection process is described in Sections H.2 through H.6. The recommended BMPs for consideration for planning and design projects are provided in Section H.7.

H.2 DEVELOP GOALS AND OBJECTIVES

Site-specific conditions of development planning projects determine which BMPs are most appropriate for a site. Prior to selecting BMPs, a good understanding of post-construction activities and potential sources of storm water pollutants is needed. The BMPs considered should address the potential pollutants reasonably expected at the site once the site is occupied or operational. The permanent BMPs planned for a site should fulfill the following goals and objectives:

- be appropriate for the given site constraints;
- ease of implementation and maintenance;
- ensure no adverse impacts to storm water quality;
- promote improved water quality;
- provide effective pollutant source control or removal capability;
- meet regulatory requirements; and

- be economically feasible.

H.3 BMP SELECTION CRITERIA

In order to fulfill the preceding goals and objectives, appropriate BMPs should be selected by using selection criteria that serve to identify the capabilities and limitations of each BMP. Common criteria used in screening and selecting BMPs during the planning stage are:

- project characteristics (e.g., potential sources of storm water pollutants after construction is completed);
- site factors (e.g., slope, high water table, soils, etc.);
- pollutant removal capability;
- short-term and long-term costs;
- responsibility for maintenance;
- contributing watershed; and
- environmental enhancement.

These criteria may be given equal weight during the BMP selection process, or they may be weighted differentially, depending on the relative importance of each factor for the particular project. These factors are described in more detail in Attachment H1.

H.4 SELECT BEST ALTERNATIVES

Using the list of recommended BMPs for Planning Priority Projects, the developer/designer should use the selection criteria described in Attachment 1 to select the best alternatives for the project conditions, characteristics, and concerns. This may be done numerically, by weighting the selection criteria, rating each BMP against each criteria, and summing up a weighted rating for each BMP, which then becomes a relative ranking. Or the selection process may be done in a more subjective, non-numerical way using experience and professional judgment to select the best alternative BMPs. Either way, the project designer should document the BMP selection process to provide justification for the system of BMPs incorporated into project plans and designs.

H.5 DESIGN AND INSTALLATION OF THE BMPS

After the appropriate BMPs are selected for a given project, the designer may complete the design of the BMPs and complete the project plans and specifications. Post-construction structural or treatment control BMPs for must be designed to:

A. mitigate (infiltrate or treat) storm water runoff from either:

1. the 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998)*, or
2. the volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in *California Stormwater Best Management Practices Handbook – Industrial/ Commercial*, (1993), or
3. the volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or
4. the volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event.

AND

B. control peak flow discharge to provide stream channel and over bank flood protection, based on flow design criteria selected by the local agency.

Further, it is important that the project plans and specifications include adequate information for the BMPs to be properly installed. Improper installation is one of the most common reasons for water quality controls to not function as designed. Therefore, the designer must provide sufficient information in the project plans for their proper installation.

H.6 MAINTENANCE OF THE BMPS

Typically, maintenance of the permanent BMPs will not be the responsibility of the City, but will be the responsibility of the owner, occupant, owner's association, etc. However, maintenance is crucial to the proper and continued functioning and effectiveness of the BMPs. The developer or contractor must consider the ongoing maintenance responsibility required for each BMP selected.

H.7 RECOMMENDED BMPS

Table H-1 lists recommended BMPs as related to site planning practices, post-construction measures, and redevelopment and infill practices. Where applicable, the numerical designation

for a BMP as used in the *California Storm Water Best Management Practices Handbook* is noted. Erosion control BMPs are included here because maintenance of soil stabilization measures is important on an ongoing basis (i.e., for the life of the site). A brief description of each BMP is provided in Attachment H2. BMP Fact Sheets for each of these BMPs are provided in Attachment H3.

Table H-1. Recommended BMPs

BMP Name	BMP Identification No. and Name[1]	Site Planning Practices	Post-Construction	Redevelopment & Infill Practices
Car Wash Facility	SC3, Vehicle and Equipment Washing and Steam Cleaning		x	x
Constructed Wetlands	TC3, Constructed Wetlands		x	
Control of Impervious Runoff	Not applicable.		x	x
Efficient Irrigation	Not applicable.		x	x
Energy Dissipaters	ESC40, Outlet Protection		x	x
Extended Detention Basins	TC5, Extended Detention Basin		x	
Infiltration Basins	TC1, Infiltration		x	x
Infiltration Trenches	TC1, Infiltration		x	x
Inlet Trash Racks	Not applicable.		x	x
Landscape Design	ESC2, Preservation of Existing Vegetation; ECS10, Seeding and Planting; ESC11, Mulching		x	x
Linings for Urban Runoff Conveyance Channel	Not applicable.		x	x
Materials Management	SC5, Outdoor Loading/Unloading of Materials; SC6, Outdoor Container Storage of Liquids; SC8, Outdoor Storage of Raw Materials, Products, and By-Products		x	x
Media Filtration	TC6, Media Filtration		x	x
Minimize Storm Water Runoff	Not applicable.	x		
Motor Fuel Concrete Dispensing Areas	SC2, Vehicle and Equipment Fueling		x	x
Motor Fuel Dispensing Area Canopy	SC2, Vehicle and Equipment Fueling		x	x
Oil/Water Separators and Water Quality Inlets	TC7, Oil/Water Separators and Water Quality Inlets		x	x
Outdoor Storage	SC6, Outdoor Container Storage of Liquids; SC8, Outdoor Storage of Raw Materials, Products, and By-Products		x	x
Pervious Drainage System	Not applicable.	x		
Porous Pavement and Alternative Surfaces	TC1, Infiltration		x	x

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Table H-1. Recommended BMPs (continued)

BMP Name	BMP Identification No. and Name[1]	Site Planning Practices	Post-Construction	Redevelopment & Infill Practices
Protect Slopes and Channels	ECS40, Outlet Protection; ESC42, Slope Roughening and Terracing		x	x
Reduce Area of Impervious Surface	Not applicable.	x		
Self Contained Areas for Vehicle or Equipment Washing, Steam Cleaning, Maintenance, Repair, or Material Processing	SC3, Vehicle and Equipment Washing and Steam Cleaning; SC4, Vehicle and Equipment Maintenance and Repair; SC7, Outdoor Process Equipment Operations and Maintenance		x	x
Site Layout	Not applicable.	x		
Storm Drain System Stenciling and Signage	SC30, Storm Drain System Signs		x	x
Trash Container Areas	SC9, Waste Handling and Disposal		x	x
Vegetated Swales and Strips	TC4, Bio-filters		x	x
Wet Pond	TC2,Wet Pond		x	

[1] Corresponds to the BMP number and name as in the *California Storm Water Best Management Practice Handbooks* (1993).

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H.8 STANDARD URBAN STORM WATER MITIGATION PLAN

Selection of permanent (post-construction) BMPs for a project is a function of the type, size, and location of the project. Projects developed on large sites provide the opportunity to incorporate a wide variety of BMPs, whereas smaller sites may present physical constraints on the implementation of BMPs requiring allocation of larger land areas. Similarly, for projects located in an existing urban environment (for example, redevelopment or infill projects), opportunities may not exist to implement BMPs that focus on the preservation of existing natural vegetation.

Al discretionary development and redevelopment projects that fall into one of the eight following categories are subject to the requirements of the SUSMP:

- Single-family hillside residences
- 100,000+ square foot commercial developments
- Automotive repair shops
- Retail gasoline outlets
- Restaurants
- Home subdivisions with 10 to 99 housing units
- Home subdivisions with 100 or more housing units
- Parking lots 5,000 square feet or more or with 25 or more parking spaces, and potentially exposed to storm water runoff

The SUSMP provides the minimum required BMPs that must be incorporated into project plans and designs before building or grading permits will be issued. The SUSMP or a project-specific Urban Storm Water Mitigation Plans are intended to assure that appropriate post-construction BMPs are included in project plans and designs to:

a. minimize, to the MEP, impacts from storm water runoff on the biological integrity of natural drainage systems and water bodies in accordance with requirements under CEQA, Section 404 of the Clean Water Act, local ordinances, and other legal authorities;

b. maximize, to the MEP, the percentage of permeable surfaces to allow more percolation of storm water into the ground;

c. minimize, to the MEP, the amount of storm water directed to impermeable areas and to the municipal separate storm sewer system;

d. minimize, to the MEP, parking lot pollution through the use of appropriate BMPs such as retention, infiltration, and good housekeeping;

e. establish reasonable limits on the clearing of vegetation from the project site including, but not limited to, regulation of the length of time during which soil may be exposed and, in certain sensitive cases, the prohibition of bare soil; and

f. provide for appropriate permanent measures to reduce storm water pollutant loads from the development site to the MEP.

A copy of the SUSMP is available at the City's public counter.

Attachment H1

Developer Information For Project Planning And Design

The following criteria should be considered during the process of assessing the appropriateness (benefits and limitations) of BMPs for a particular project:

- project characteristics;
- site factors;
- pollutant removal capability;
- short-term and long-term costs;
- responsibility for maintenance;
- contributing watershed area; and
- environmental enhancement.

H1.1 PROJECT CHARACTERISTICS

Selection of BMPs for a project is a function of project characteristics such as type or size of project. Post-construction activities and operations that may be potential sources of storm water pollution are often the same for a given type of project. Projects developed on large sites provide the opportunity to incorporate a wider variety of BMPs, whereas smaller sites often have physical constraints precluding implementation of BMPs requiring large land areas.

H1.2 SITE FACTORS

Site factors have common physical restrictions on BMPs and include:

Steep Slopes: Steep slopes restrict the use of several BMPs. Porous pavement must be situated in sites with slopes of 5 percent or less. Swales can only be used if their slope is less than 5 percent; however, swales often can be used perpendicular to the slope or with a drop structure. Also, because of slope stability concerns, infiltration trenches and filter strips are not practical when slopes exceed 20 percent.

High Water Table: The water table acts as an effective barrier to exfiltration and can sharply reduce the ability of an infiltration BMP to drain properly. If the height of the seasonally high water table extends to within 4 feet (1.2 meters) of the bottom of an infiltration BMP, the site is seldom considered suitable. Given the climate and geology of Southern California, this is typically not an issue, except for some areas adjacent to surface water bodies.

Soil Permeability: The type of soil is an important characteristic that can limit the applicability of a particular BMP at a particular site since the long term percolation rate is governed by soil type. This soil permeability factor is particularly relevant to infiltration BMPs, which should not be applied to sites with infiltration rates of less than 0.27 inch per hour (0.686 centimeters), as

defined by the least permeable layer in the shallow soil profile. This limiting rate excludes most "C" and "D" soils (Soil Classification System), which cannot exfiltrate enough runoff through the subsoil. In addition, extremely permeable sandy soils may not maintain adequate water levels in wet ponds

Proximity to Foundations and Wells: Since infiltration BMPs divert runoff back into the soil, some development sites may experience difficulty with local seepage, especially if located near a building foundation. Another risk due to diverted runoff through infiltration may be contamination of groundwater supplies. Limited research has been performed to evaluate this risk, however, it is advisable to maintain infiltration BMPs at least 100 feet (30 meters) from drinking water wells. The risk is greater when shallow soils with organic materials are bypassed.

Climatic Region: BMPs should include appropriate designs to address issues of rainfall volume and intensity during wet weather seasons so as to consider the economic feasibility of using such BMPs and/or designs. Typically, the evaluation of long term rainfall records must be considered together with site conditions to properly size structural treatment BMPs.

In addition, wet ponds require some continuous flow (dry weather water source) to keep them from stagnating or developing odor and mosquito problems.

Land Consumption: Some sites are too intensively developed or limited in area to allow for some BMPs, such as pond BMPs and porous pavement, which require a large surface area and buffer area.

Maximum Depth: To preserve storage capacity for subsequent rain events, keep water from stagnating, and provide optimal pollutant removal conditions, infiltration BMPs must be designed to completely drain within 2 to 3 days after a storm. If the infiltration rates of the underlying soils are slow, the available depth of the infiltration facility may be limited. These restrictions vary depending on whether the facility is a trench, basin, injection well, or porous pavement.

Restricted Land Uses: Certain BMPs can only be applied to particular land uses, and are not broadly applicable for all development sites. Porous pavement can only be used for sites with parking lots not expected to receive heavy car or truck traffic, or much sediment.

High Sediment Input: Most BMPs are unable to handle the large loads of sediment that may be generated during the construction phase of development. Infiltration BMPs are particularly susceptible to rapid clogging and subsequent failure if significant sediment loads are allowed to enter the structure. As a general rule, these BMPs should not be installed until all of the land to be disturbed by construction in the contributing watershed is effectively stabilized and will

remain stabilized. Contractors must often take unusual steps during the actual installation of the infiltration BMPs to prevent soil compaction or contamination by sediment. To prevent clogging of the infiltration BMPs after construction, many designs call for the use of a pre-treatment device to filter sediment and other coarse particles before they reach the infiltration BMP. In addition, in areas where large amounts of fine sediment may occur even in the absence of upstream construction, BMPs such as porous pavement are not recommended.

Landscape Enhancement: If properly designed, many BMP options have the potential to enhance the urban landscape. Wet ponds and wetlands are frequently used to create a waterfront effect in residential developments, and may actually increase the value of the adjacent property. Dry extended detention areas can serve as attractive parks, either manicured or natural in design, or sports fields. Given the typical rainfall patterns in Southern California, these open areas would be available for public use most of the year. Most infiltration BMPs or lined detention areas have a neutral or negative effect on landscape appearance. In general, BMPs may be visually attractive or aesthetically unappealing depending upon the creativity of the project designer.

H1.3 POLLUTANT REMOVAL CAPABILITY

The nature of the pollutant being removed and its concentration often sets an upper limit on the potential removal rate that can be achieved with a given BMP. The pollutant removal capability of a BMP is primarily governed by three interrelated factors: removal mechanisms as affected by the design of the BMP, fraction of the annual runoff volume that is effectively treated, and nature of the urban pollutant being treated.

Pollutants such as sediment and lead (which is typically bound to fine sediment) can be removed effectively by common BMP removal mechanisms, including settling and filtering. Soluble pollutants such as nitrate, phosphate, and some trace metals are more difficult to remove and require biological and/or chemical mechanisms, such as uptake by bacteria, algae, rooted aquatic plants, organic material, terrestrial vegetation, or soils.

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H1.4 SHORT-TERM AND LONG-TERM COSTS

The appropriateness of a BMP for a particular site can be affected by short-term and long-term cost considerations. Short-term costs include installation costs for both materials and labor. Long-term costs include maintenance. To sustain proper function, some BMPs require low level maintenance on a regular and frequent basis, whereas other BMPs require infrequent maintenance of a more extensive nature. Maintenance costs will include the proper disposal of

accumulated material. In selecting a control method, cost considerations—construction, installation, and maintenance—associated with the BMP should be considered.

H1.5 RESPONSIBILITY FOR MAINTENANCE

Improper maintenance is one of the most common reasons for water quality controls to not function as designed or to fail entirely. It is important to consider who will be responsible for maintenance of a permanent BMP, and what equipment is required to perform the maintenance properly.

H1.6 CONTRIBUTING WATERSHED AREA

The feasibility of a particular BMP depends on the contributing watershed area. A BMP cannot be practically suitable for all urban area sizes. For instance, wet pond BMPs generally require a significant contributing watershed area of greater than 10 acres (4 hectares), and in locales such as Southern California, a dry weather source of water. By contrast, infiltration and vegetative BMPs are applicable for catchments less than 10 acres (4 hectares), due to space, economic, or flow volume constraints.

It should be noted that the contributing watershed area does not have to be limited to the development project site. By using local topography and drainage, the contributing watershed area may be increased or decreased to better accommodate a particular BMP. For example, additional runoff generated away from the development project may be routed to the BMP, thereby increasing total catchment area and making pond options more feasible. Conversely, various portions of the total runoff from a development project site may be diverted to smaller, individual BMPs, thereby decreasing the contributing watershed area and making infiltration and vegetative BMPs more practical.

H1.7 ENVIRONMENTAL IMPACT AND ENHANCEMENT

Low Flow Maintenance: Downstream aquatic life may be jeopardized when the natural low flow levels experienced during the dry weather season decline even further because of reduced infiltration in urbanized watersheds. However, this is sometimes offset by irrigation return flows, which may cause unnatural dry weather flow. Infiltration BMPs can contribute significantly to groundwater recharge and may be able to help the watershed better mimic its past hydrologic behavior. Vegetative BMPs such as swales and filter strips appear to have modest potential in this regard, while pond BMPs have little effect in maintaining low flows.

Streambank Erosion Control: Streambank erosion not only contributes large sediment loads to receiving waters, but also has an adverse impact on the habitat quality for downstream aquatic life. Some BMPs, including extended detention ponds, and full exfiltration BMPs, can reduce erosive storm flows enough to keep downstream channels and banks relatively stable, whereas most other BMPs have only marginal capabilities in this regard.

Aquatic/Wildlife Habitat Creation: Some BMP options create wetland or open water areas utilized by waterfowl, marsh birds, and other wildlife. Shallow marshes and wet ponds are particularly well suited for this role, if relatively small investments are made in landscaping design and plant selection. Consideration would have to be given to a dry weather source of water, unless a seasonally wet area is desired. Terrestrial wildlife habitat may be created through the incorporation of BMPs such as wet ponds, extended detention ponds, infiltration basins, and filter strips. Relatively diverse biological communities may further be enhanced through judicious planting of trees, shrubs, and grasses that provide food and cover for the target wildlife.

Attachment H2

Developer Information For Project Planning And Design

H2.1 SOURCE CONTROL BMPS

Efficient Irrigation: The timing and application methods of irrigation water should be designed to minimize the runoff of excess irrigation water into the storm water drainage system. Rain shutoff devices should be employed to prevent irrigation after significant precipitation and to shut off before runoff occurs. Irrigation systems should be designed so areas that have different water use requirements are not mixed on the same station, to avoid over-watering problems. The use of drip irrigation should be considered for all planter areas that have a shrub density that will cause excessive spray interference of an overhead irrigation system. Flow reducers or shutoff valves triggered by a pressure drop should be used to mitigate broken heads or lines.

Energy Dissipaters: Energy dissipaters, such as riprap, shall be installed at the outlets of new storm drains that enter unlined channels in accordance with applicable agency specifications to minimize erosion. [*California Best Management Practice Handbook*: ESC40 - Outlet Protection]

Landscape Design: Choose plants with low irrigation requirements (for example, native or drought tolerant species) and group plants with similar water requirements in order to reduce excess irrigation runoff, where practical. Consider other design features, such as:

- Use mulches (such as wood chips or bark) in planter areas without ground cover to minimize sediment in runoff.
- Install appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant material where possible and/or as recommended by the landscape architect.
- Leave a vegetative barrier along the property boundary and interior water courses, to act as a pollutant filter, where appropriate and feasible.
- Choose plants that do not require fertilizer or pesticides to sustain growth.

[*California Best Management Practice Handbook*: ESC2 - Preservation of Existing Vegetation, ESC10 - Seeding and Planting, and ESC11 - Mulching]

Linings for Urban Runoff Conveyance Channels: Onsite conveyance channels should be lined, where appropriate, to reduce erosion caused by increased flow velocity due to increases in tributary impervious area. The first choice for linings should be grass or some other vegetative surface, since these materials not only reduce runoff velocities, but also provide water quality benefits from filtration and infiltration. If velocities in the channel are large enough to erode grass or other vegetative linings, riprap, concrete soil cement or geo-grid stabilization may be substituted or used in combination with grass or other vegetation stabilization.

Materials Management: Project designs should be developed so as to minimize the potential of pollutants to contact rainfall or storm water runoff. Materials should be stored inside or under cover on paved surfaces. Secondary containment should be provided. The outdoor storage of hazardous materials should be minimized or eliminated. [*California Best Management Practice Handbook*: SC5 - Outdoor Loading/Unloading of Materials, SC6 - Outdoor Container Storage of Liquids, SC8 - Outdoor Storage of Raw Materials, Products, and By-Products]

Minimize Storm Water Runoff: Minimize the volume of post-development storm water runoff to an amount approximately equal to an undeveloped vegetated site by utilizing measures that increase infiltration. A reduction in the storm water runoff from a development project should yield a corresponding reduction in the amount of pollutants transported from the property. The undeveloped runoff volume should be determined by considering the project site to be in a natural condition with surface vegetation in place. The storm water runoff volume can be reduced by a variety of measures, including:

- increased use of landscape areas;
- increased use of vegetated drainage swales in lieu of underground piping or imperviously lined swales; and
- construction of onsite ponding areas or retention facilities to increase opportunities for infiltration.

Motor Fuel Concrete Dispensing Areas: Areas used for fuel dispensing shall be paved with portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited. The fuel dispensing area shall have a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water to the extent practicable. At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less. [*California Best Management Practice Handbook*: SC2 - Vehicle and Equipment Fueling]

Motor Fuel Dispensing Area Canopy: All motor fuel concrete dispensing areas must have a canopy structure. The canopy's minimum dimensions must be equal to or greater than the area within the grade break. The canopy must not drain onto the fuel dispensing area, and the canopy downspouts must be routed to prevent drainage across the concrete fueling area. [*California Best Management Practice Handbook*: SC2 - Vehicle and Equipment Fueling]

Outdoor Storage: Where proposed project building plans include outdoor areas for storage or use of containers of oils, fuels, solvents, coolants, wastes, or other chemicals, the areas where these materials are to be used or stored must be protected by secondary containment structures

such as berms, dikes, or curbs, as well as a roof or awning to minimize collection of storm water within the secondary containment area. In cases where storage areas are will be contained but not covered with roof or awning, provisions must be made for proper disposal of storm water that collects in secondary containment due to potential contamination. [*California Best Management Practice Handbook*: SC6 - Outdoor Container Storage of Liquids, SC8 - Outdoor Storage of Raw Materials, Products, an By-Products]

Pervious Drainage System: Provide pervious drainage systems, where possible, to reduce the volume of runoff through the opportunity for storm water infiltration. The primary objective of pervious drainage systems is to allow the storm water to flow over a natural surface or other constructed pervious materials as much as practical, thereby increasing opportunities for infiltration and pollutant removal. Methods of providing such drainage include:

- discharge roof drains onto lawn or vegetated areas, and not directly into a storm drain system;
- provide vegetated drainage swales on the developed site;
- use natural water courses or unlined channels to convey storm water runoff;
- use open jointed paving materials in walkway or parking areas; and
- where soils conditions are suitable, use perforated pipe or gravel filtration pits for low flow infiltration.

Protect Slopes and Channels: Apart from approved grading plan areas, avoid disturbing steep or unstable slopes. Safely convey runoff from the tops of slopes, and stabilize disturbed slopes as quickly as possible. Avoid disturbing natural channels. Stabilize temporary and permanent channel crossings as quickly as possible, and ensure that increases in runoff velocity and frequency caused by the project do not erode the channel. [*California Best Management Practice Handbook*: ESC40 - Outlet Protection and ESC42 - Slope Roughening and Terracing]

Reduce Area of Impervious Surface: Reduce the area of impervious surfaces to minimize the storm water runoff volume and flow generated by the development project. The area of impervious surfaces in a development can be reduced by either reducing the physical size of the surface or by using a porous material for the paved surface. Some specific options to reduce impervious surfaces include:

- Provide reduced width sidewalks and incorporate landscaped buffer areas between sidewalks and streets. However, sidewalk widths must still comply with regulations for the Americans with Disabilities Act and other life safety requirements.
- Use permeable materials for sidewalk, driveway parking lot or roadway surfacing, where practicable.

- Reduce widths of street where off-street parking is available. However, street widths must still comply with life safety requirements for fire and emergency vehicle access.

Self-Contained Areas for Vehicle or Equipment Washing, Steam Cleaning, Maintenance, Repair, or Material Processing: For retail, commercial, or industrial development projects, self-contained areas shall be required for washing/steam cleaning, wet material processing, and maintenance activities. Specifically, where:

- washing of vehicles without steam cleaning occurs, provide wash racks constructed in accordance with local sewering agency guidelines or other acceptable standard, and obtain the prior approval of the sewering agency;
- steam cleaning occurs, provide wash racks or structurally contain (with a cover to restrict the entry of storm water during rain events) runoff from such areas on site for commercial waste removal;
- wet material processing occurs, secondary containment structures shall be provided to hold spills resulting from accidents, leaking tanks or equipment, or any other unplanned releases; and
- vehicle repair/maintenance occurs, impermeable berms, drop inlets, trench catch basins, or overflow containment structures shall be provided around repair/maintenance areas to prevent spilled materials and wash-down waters from entering the storm drain system.

[*California Best Management Practice Handbook*: SC3 - Vehicle and Equipment Washing and Steam Cleaning, SC4 - Vehicle and Equipment Maintenance and Repair, and SC7 - Outdoor Process Equipment Operations and Maintenance]

Site Layout: Preserve natural drainage features, natural depression storage areas, and avoid development on steep hillside areas to the extent practicable. Consideration should be given to concentrating or clustering development on one part of a site while leaving the remaining land in a natural undisturbed condition. Clustering of development for a project entails decreasing the allowable lot size and set-back requirements while maintaining the number of allowable units on the site. Such an approach can provide the flexibility to locate buildings and development on areas of the property more suitable for the project while leaving areas of environmental value in an undeveloped or natural state. Clustering may reduce lengths of roads, walkways, driveways and other impervious surfaces, thereby reducing the amount of runoff from the project. More concentrated development may also provide opportunities to intercept and manage pollutants generated by the development.

Storm Drain System Stenciling and Signage: Storm drain inlets and catch basins shall be stenciled with prohibitive language and/or graphical icons to discourage illegal dumping. Signs with prohibitive language and/or graphical icons discouraging illegal dumping may also be

posted along channels and creeks. All storm drain facilities constructed or modified will require the addition of standard stenciling or signage. [*California Best Management Practice Handbook*: SC30 - Storm Drain System Signs]

Trash Container Areas: Trash container areas, such as those for multi-family housing and commercial and industrial facilities, shall have drainage from adjoining roofs and pavements diverted around the area(s). Trash container areas shall be screened or walled to prevent off-site transport of trash, and shall have a solid roof or awning, where practicable. [*California Best Management Practice Handbook*: SC9 - Waste Handling and Disposal]

H2-2 TREATMENT CONTROL BMPS

Car Wash Facility: If a proposed project includes a designated car wash area, the area shall not discharge directly to the storm drain system. All wash water shall be directed to the sanitary sewer (with prior approval of the sewering agency), engineered infiltration device, or equally effective alternative. [*California Best Management Practice Handbook*: SC3, Vehicle and Equipment Washing and Steam Cleaning]

Constructed Wetlands: Create a wetland that is designed specifically for treating storm water runoff. A simple constructed wetland shall include a rectangular basin with a forebay and wetland vegetation area. The constructed wetland shall be shallower than a wet pond, allowing for greater contact between water, soil, and vegetation, and consequently, more phosphorus and metals removal potential. In Southern California, constructed wetlands would require a dry weather source of water. [*California Best Management Practice Handbook*: TC3 - Constructed Wetlands]

Control of Impervious Area Runoff: Direct drainage from impervious areas, including roofs, to the street or a storm drain shall be avoided. Impervious areas should be graded and constructed to drain to a filtration BMP, such as a landscaped area, infiltration area, detention basin or equally effective alternative, wherever practicable, and as recommended by the engineer of record. Roof runoff should also be directed to a filtration BMP, wherever practicable, and as recommended by the engineer of record. Some examples to control impervious runoff are:

- parking lot catch basins could be placed in landscaped areas, and roof downspouts could discharge onto landscaped areas which are designed to allow minor ponding
- site drainage systems could be designed to provide a low flow bypass into a filtration basin or similar BMP.

Extended Detention Basins: Provide an extended detention basin that fills with storm water runoff and then releases the storm water slowly through a bottom outlet to provide time for

sediments to settle. Extended detention basins are dry between storm events. Extended detention basins are appropriate where dry weather base flow cannot be used to maintain water levels, as required in treatment BMPs such as wet ponds or constructed wetlands. These systems are suitable for any size tributary area. Extended detention ponds have lower removal efficiency than wet ponds and constructed wetlands with respect to particulate pollutants, and have less capability for dissolved contaminant removal. [*California Best Management Practice Handbook*: TC5 - Extended Detention Basin]

Infiltration Basins: Provide infiltration basins as effective means of removing both soluble and fine particulate pollutants borne in urban runoff. Coarse-grained pollutants should generally be removed before they enter the basin. Unlike other infiltration systems, basins can be easily adapted to provide a reduction of peak discharges for large design storms by storing flow. Depending on the degree of storage/exfiltration achieved in the basin, significant groundwater recharge, low flow augmentation and reduced streambank erosion can be achieved. Basins are a feasible option where soils are permeable and the water table and bedrock are situated well below the soil surface. Infiltration basins can serve relatively large drainage areas. However, infiltration basins that serve larger watersheds can be problematic because it becomes more difficult to control the sediment input. Both the construction costs and maintenance requirements for basins are similar to those for conventional dry ponds. Infiltration basins do need to be inspected regularly to check for standing water. [*California Best Management Practice Handbook*: TC1 - Infiltration]

Infiltration Trenches: Install infiltration trenches as adaptable BMPs that effectively remove both soluble and particulate pollutants from surface flows. As with other infiltration systems, trenches are not intended to trap coarse sediments. Grass buffers or special inlets must be installed to capture coarse sediment before it enters the trench. Depending on the degree of storage/exfiltration achieved, trenches can provide groundwater recharge, low flow augmentation and reduced streambank erosion. Individual trenches are primarily an on-site control, and are seldom practical or economical on sites with contributing areas larger than 5 to 10 acres (2 to 4 hectares). Infiltration trenches are only feasible when soils are permeable and the water table and bedrock are situated well below the bottom of the trench. Aside from regular inspection and effective upstream sediment and erosion control, trenches have limited routine maintenance requirements. However, trenches will prematurely clog if sediment is not kept out before, during, and after construction activities in the contributing drainage area. An infiltration trench will eventually clog and require periodic excavation and reconstruction. This BMP will typically not work in areas with predominantly fine-grained soils. [*California Best Management Practice Handbook*: TC1 - Infiltration]

Inlet Trash Racks: Install trash racks, gratings, screens or other devices in catch basins and inlet structures where appropriate to reduce the amount of debris, litter, and other trash entering a storm water system. The design and use of trash racks, screens or grates must consider hydraulic capacity requirements to prevent flooding. Because of the potential for flooding if a blockage occurs, prior to project approval or the issuance of permits, the development project should have a maintenance plan for the inlet trash racks, screens, and other devices for the portions of the storm drain system that do not revert to municipal ownership and operation.

Media Filtration: Use media filtration in watersheds where soils do not permit infiltration or where concerns over groundwater quality prevent the use of infiltration. Media filtration is a relatively new technique for treating storm water, whereby some portion of runoff is diverted onto a self-contained bed of sand or other media, often preceded by a small sediment basin. The runoff is then strained through the sand, collected in underground pipes and returned back to the stream or channel. This BMP has the following advantages: moderate to high pollutant removal capability; very few environmental limitations; small land requirement; and broad application to most development sites, large or small. Media filtration can be used on areas with thin soils, high evaporation rates, low soil infiltration rates, and limited space. Many media filtration devices have been used on small parking lots, and numerous media filtration devices have been used for municipal runoff. The required surface area of the filter is usually a direct function of the impervious area treated, and varies regionally due to rainfall patterns and local criteria for the volume needed for water quality treatment. A disadvantage of media filtration is that it does not provide storm water quantity control, unless coupled with detention. Media filtration systems are moderately expensive, and require the sand to be replaced every 1 to 3 years. [*California Best Management Practice Handbook*: TC6 - Media Filtration]

Oil/Water Separators and Water Quality Inlets: Provide oil/water separators or water quality inlets for situations where concentrations of oil, grease, and related compounds are high and not controlled effectively by source control methods. This type of treatment control is designed to remove petroleum compounds and grease, and is also capable of removing floatable debris and settleable solids. Businesses with a high likelihood of oil and grease concentrations include truck, car, and equipment maintenance and washing businesses, as well as facilities such as marinas, marine ports, airfields, and mass transit park-and-ride lots. Oil/water separators and water quality inlets are only effective with a prescribed and diligent maintenance program, and only if they are designed as off-line systems. [*California Best Management Practice Handbook*: TC7 - Oil/Water Separators and Water Quality Inlets]

Porous Pavement and Alternative Surfaces: Install porous pavement or an alternative surface which has a high capability to remove both soluble and fine particulate pollutants in urban runoff, and can also provide groundwater recharge, low flow augmentation, and reduction in

streambank erosion. Installation of infiltration devices in conjunction with porous pavement allows capture of the runoff and percolation through the soil column. As the storm water percolates through the soil column, many pollutants are removed by filtration and soil bacteria. The use of porous pavement is generally restricted to low vehicle traffic volume and parking areas; it can accept runoff from rooftops or adjacent conventionally paved areas. As a BMP, porous pavement is only feasible on sites with gentle slopes, permeable soils, minimal (ideally no) sediment input, and relatively deep water table and bedrock levels. The disadvantages of porous pavement include the inability to bear heavy weight vehicles, the tendency to clog (which is costly to remedy), and the necessity of ongoing special maintenance to sustain function. Construction and installation of porous pavement also requires high levels of workmanship. [*California Best Management Practice Handbook*: TC1 - Infiltration]

Vegetated Swales and Strips: Install vegetated swales and strips to convey and treat storm water prior to discharge to a storm drain or surface water body. Treatment is achieved by sedimentation, filtration through the vegetation, adsorption to soil particles, and by bacteria present in the soil and on the plant stems. Vegetated swales are channels lined with grass that treat storm water flows. Swales are wider than typical storm water conveyance channels to maintain lower velocities and keep the depth of the water below the height of the vegetation (up to a particular runoff design flow rate). Implementation of vegetated swales is most appropriate for small drainage areas. Vegetated strips treat sheet flow and are placed parallel to the contributing surface, such as a parking lot. The strips should be greater than 10 feet (3 meters) long to establish sheet flow and should be sized to treat drainage areas of less than 5 acres (2 hectares). [*California Best Management Practice Handbook*: TC4 - Bio-filters]

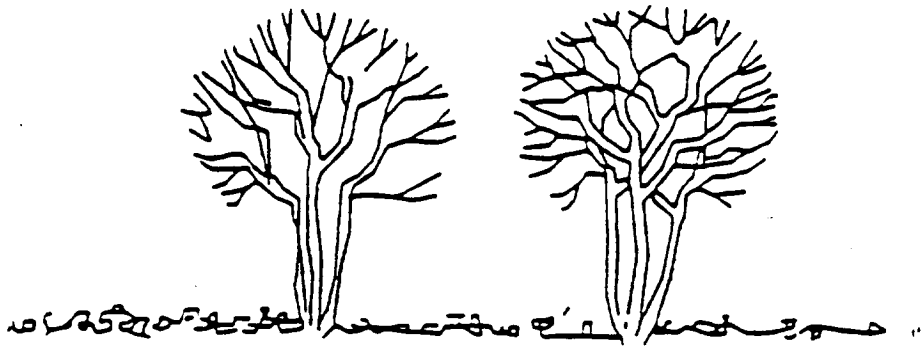
Wet Pond: Install a wet pond where removal of dissolved constituents such as metals and nutrients are of concern. A wet pond is a small water body with rooted wetland vegetation along the perimeter that has a permanent water pool to treat incoming storm water. Wet ponds can be combined with extended detention basins. In Southern California, wet ponds require a dry weather source of water. [*California Best Management Practice Handbook*: TC2 - Wet Pond]

Attachment H3

Developer Information For Project Planning And Design

BMP Fact Sheets - California Best Management Practice Handbooks (1993)

BMP: PRESERVATION OF EXISTING VEGETATION



GENERAL DESCRIPTION

Carefully planned preservation of existing vegetation minimizes the potential of removing or injuring existing trees, vines, shrubs and/or grasses that serve as erosion controls.

SUITABLE APPLICATIONS

- Areas within site where no construction activity occurs, or occurs at a later date.
- Sensitive areas where natural vegetation exist and should be preserved, such as: steep slopes, watercourses, and building sites in wooded areas.
- Areas where local, state and federal government requires preservation, such as: vernal pools, wetlands, marshes, certain oak trees, etc.

INSTALLATION/APPLICATION CRITERIA

- Clearly mark, flag or fence vegetation or areas where vegetation should be preserved.
- Prepare landscaping plans which include as much existing vegetation as possible and state proper care of this vegetation both during and after construction.
- Define and protect with berms, fencing, signs, etc., a setback area from vegetation to be preserved. Setback area size should be based on the location, species, size, age and potential impact of adjacent construction activities or permanent improvements.
- Proposed landscaping plans which do not include plant species that compete with the existing vegetation.
- Do not locate construction traffic routes, spoil piles, etc., where significant adverse impact on existing vegetation may occur.

REQUIREMENTS

- Maintenance
  - Inspection and maintenance requirements for protection of vegetation are low.
  - During construction the limits of grading or disturbance should be clearly marked at all times.
  - Irrigation or maintenance of native trees or vegetation should conform to specifications on the Landscape Plan.
- Cost
  - There is little cost associated with preserving existing vegetation if properly planned during the project design, and may yield aesthetic benefits which enhance property values.

LIMITATIONS

- Requires forward planning by the owner/developer, contractor and design staff.
- For sites with diverse topography, it is often difficult and expensive to save existing trees while grading the site satisfactorily for the planned development.

Objectives

- Housekeeping Practices
- Contain Waste
- **Minimize Disturbed Areas**
- **Stabilize Disturbed Areas**
- **Protect Slopes/Channels**
- **Control Site Perimeter**
- Control Internal Erosion

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

● High ○ Low

ESC2

Best Management Practices

Additional Information — Preservation of Existing Vegetation

Methods for protecting existing vegetation and trees:

- Stake off root system limits (drip line of tree). Some counties limit construction within 5 feet of the tree drip line.
- Fence off the area to be preserved or along the tree drip line.
- Flag or mark trees to remain in place.
- Tree wells and retaining walls (permanent) help preserve existing vegetation, but must be large enough to protect the root system (see below).
- For the California Oak tree, no trenching or irrigation should be allowed within the driplines of the tree, since both these activities are detrimental to the preservation of the tree.
- Where grading under trees is necessary, excavation and fill should be limited to 1 foot within the driplines.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites. Flood Control District of Maricopa County, Arizona, September 1992.

County of Sacramento Tree Preservation Ordinance - September 1981.

Stormwater Management Water for the Puget Sound Basin. Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

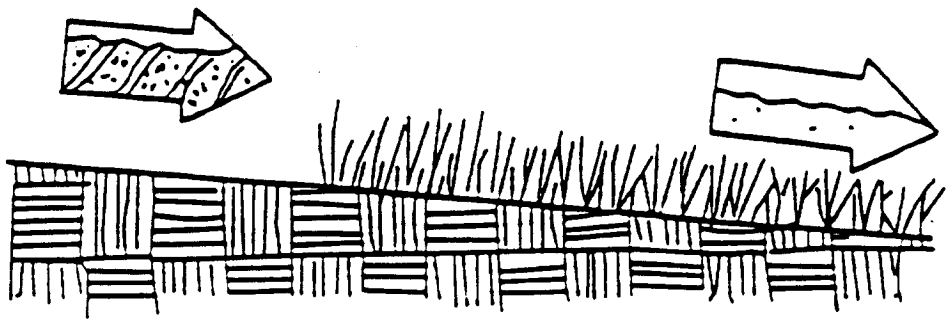
Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

SUPPLEMENTAL INFORMATION, JUNE 1998

Limit and phase clearing. By clearing only those areas immediately essential for completing site construction, buffer zones are preserved and soil remains undisturbed until construction begins in a particular area. Additionally, the proposed limits of land disturbance should be physically marked off to ensure that no more than the required land area is cleared.

ESC2

BMP: SEEDING AND PLANTING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- **Stabilize Disturbed Areas**
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

Seeding of grasses and plantings of trees, shrubs, vines and ground covers provide long-term stabilization of soil. In some areas, with suitable climates, grasses can be planted for temporary stabilization.

SUITABLE APPLICATIONS

- Appropriate for site stabilization both during construction and post-construction.
- Any graded/cleared areas where construction activities have ceased.
- Open space cut and fill areas.
- Steep slopes.
- Spoil piles.
- Vegetated swales.
- Landscape corridors.
- Stream banks.

INSTALLATION/APPLICATION CRITERIA

Type of vegetation, site and seedbed preparation, planting time, fertilization and water requirements should be considered for each application.

Grasses:

- Ground preparation: fertilize and mechanically stabilize the soil.
- Tolerant of short-term temperature extremes and waterlogged soil conditions.
- Appropriate soil conditions: shallow soil base, good drainage, slope 2:1 or flatter.
- Develop well and quickly from seeds.
- Mowing, irrigating, and fertilizing are vital for promoting vigorous grass growth.

Trees and Shrubs:

- Selection Criteria: vigor, species, size, shape & wildlife food source.
- Soil conditions: select species appropriate for soil,drainage & acidity.
- Other Factors: wind/exposure, temperature extremes, and irrigation needs.

Vines and Ground Covers:

- Ground preparation: lime and fertilizer preparation.
- Use proper seeding rates.
- Appropriate soil conditions: drainage, acidity, slopes.
- Generally avoid species requiring irrigation.

Targeted Pollutants

- ● Sediment
- ◒ Nutrients
- ◒ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ◒ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

ESC10

Best Management Practices

Additional Information — Seeding and Planting

Permanent seeding of grasses, sodding, and planting of trees, shrubs, vines and ground covers can provide long-term stabilization of soil. Permanent seeding and planting contributes to long-term site aesthetics and helps reduce erosion by reducing the velocity of runoff, allowing infiltration to occur, filtering sediments, and by holding soil particles in place.

Seeding and planting should be applied as soon as final grading is done to all graded and cleared areas of the construction site where plant cover is ultimately desired. For example, vegetation may be established along landscaped corridors and buffer zones where they may act as filter strips (see TC6 in Chapter 5 of the Municipal Handbook). Additionally, vegetated swales, steep and/or rocky slopes and stream banks can also serve as appropriate areas for seeding and plantings.

Installation/Application Criteria

Application of appropriate vegetation must consider: the seedbed or plantbed, proper seasonal planting times, water requirements fertilizer requirements and availability of the selected vegetation within the project's region. Permanent plantings during the construction stage of projects require careful coordination between the local agency inspectors, project managers, construction managers, and landscape contractor. Protocols for coordination and implementation procedures regarding site access, construction staging, and short- and long-term planting areas should be developed prior to the construction bid process. Where possible, these protocols should be established by and remain the responsibility of the site owner.

Because of the many available types of plants and ground covers and because site conditions and land use vary so widely within California, a set of general guidelines is included for installation/application of grasses, trees and shrubs, vines and ground covers. However, your local municipality, Soil Conservation Service, agricultural extention, or other resources should be consulted on appropriate species, planting requirements, and maintenance needs for your climate and soils.

Grasses

Grasses, depending on the type, provide short-term soil stabilization during construction or can serve as long- term/ permanent soil stabilization for disturbed areas. In general, grasses provide low maintenance to areas that have been cleared, graded and mechanically stabilized.

Selection:

The selection of the grass type is determined by the climate, irrigation, mowing frequency, maintenance effort and soil-bed conditions. Although grasses provide quick germination and rapid growth, they also have a shallow root system and are not as effective in stabilizing deep soils, where trees, shrubs and deep rooted ground covers may be more appropriate. Several grasses are adaptable to the various California climates. The figure at the end of these fact sheets shows appropriate grasses for regions within California. Blue grass is well adapted throughout California except for in the valley regions. The blue grass is found on dry, sandy soils that have good drainage. Bermuda grass, on the other hand is well adapted in the valley region where soils are dry, coarse and heavier. Specific seed mix and/or varieties for each site should be provided by an approved/qualified plant materials specialist.

ESC10

Additional Information — Seeding and Planting

Caution should be exercised in the non-native vegetation because of impacts to native vegetation on adjacent lands. For example, species that may be planted at the construction site can quickly spread and compete with originally undisturbed vegetation such as the California Poppy and California buckwheat, both of which complete poorly with introduced grasses (e.g., planting wild oats is illegal in California). In addition to stabilizing disturbed soil, vines and ground covers can perform the following functions:

1. Provide attractive cover that does not need mowing.
2. Help to define traffic areas and control pedestrian movement.

Site Preparation:
Ground covers are plants that naturally grow very close together, causing severe competition for space nutrients and water. Soil for ground covers should be well prepared. The entire area should be spaded, disced, or rototilled to a depth of six to eight inches. Two to three inches of organic material, such as good topsoil or peat, should be spread over the entire area.

Planting:
The following steps will help ensure good plant growth.

1. Make the plantings following the contours of the land.
2. Dig the holes 1/3 larger than the plant root ball.
3. Know what depth to place the plants.
4. Use good topsoil or soil mixture with a lot of organic matter.
5. Fill hole 1/3 to 1/2 full, shake plants to settle soil among roots, then water.
6. Leave saucer-shaped depression around the plant to hold water.
7. Water thoroughly and regularly.
8. Space plants according to the type of plant and the extent of covering desired.

Materials:
There are many different species of vines and ground covers from which to choose, but care must be taken in their selection. It is essential to select planting materials suited to both the intended use and specific site characteristics. The plants discussed in this handbook are those which are known to be adapted to California, and commonly available from commercial nurseries. Additional information can be obtained from local nurserymen, landscape architects, and extension agents. An approved low water use plant list may be obtained from the State Department of Water Resources or the Soils Conservation Service.

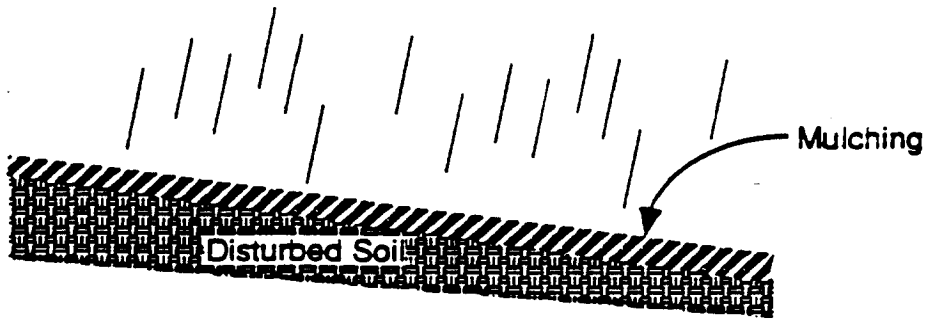
Requirements
Maintenance

General requirements include:

- Grass maintenance should be minimal to none. Irrigation and regular fertilizing may be required for some types of grasses. Mowing is only required in areas where aesthetics or fire hazards are a concern.
- Young trees should receive an inch of water each week for the first two years after planting. The tree should be watered deeply, but not more often than once per week.
- Transplanted trees should be fertilized on an annual basis.
- Proper pruning, watering, and application of fertilizer is necessary to maintain healthy and vigorous shrubs. A heavy layer of mulch applied around the shrubs reduces weeds and retains moisture.
- Trim old growth as needed to improve the appearance of ground covers. Most covers need once-a-year trimming to promote growth.

ESC10

BMP: MULCHING



Objectives

- *Housekeeping Practices*
- *Contain Waste*
- *Minimize Disturbed Areas*
- *Stabilize Disturbed Areas* ●
- *Protect Slopes/Channels* ●
- *Control Site Perimeter*
- *Control Internal Erosion*

GENERAL DESCRIPTION

Mulching is used to temporarily and permanently stabilize cleared or freshly seeded areas. Types of mulches include organic materials, straw, wood chips, bark or other wood fibers, decomposed granite, and gravel.

SUITABLE APPLICATIONS

- Temporary stabilization of freshly seeded and planted areas.
- Temporary stabilization during periods unsuitable for growing vegetation.
- Temporary stabilization of areas that cannot be seeded or planted (e.g., insufficient rain, steep slope).
- Mulches such as gravel and decomposed soils may be used as post-construction BMPs, particularly in arid regions.

INSTALLATION/APPLICATION CRITERIA

Mulch prevents erosion by protecting the soil surface and fostering growth of new seedings that do not stabilize by themselves.

- May be used with netting to supplement soil stabilization.
- Apply to planting areas where slopes are 2:1 or greater.
- Binders may be required for steep areas, or if wind and runoff is a problem.
- Type of mulch, binders, and application rates should be recommended by manufacturer/contractor.

REQUIREMENTS

- Maintenance
  - Must be inspected weekly and after rain for damage or deterioration.
- Cost: Average annual cost for installation and maintenance (3-4 month useful life, source: EPA, 1992)
  - Straw Mulch: $7,500 per acre.
  - Wood Fiber Mulch: $3,500 per acre.
  - Jute Netting: $12,500 per acre.

LIMITATIONS

- Wood fiber mulches should be used only in areas with over 20 inches annual precipitation.
- Organic mulches are not permanent erosion control measures.
- Mulches tend to lower the soil surface temperature, and may delay germination of some seeds.
- Permanent mulches for arid regions should include gravel and decomposed soils.

Targeted Pollutants

- ● *Sediment*
- ◒ *Nutrients*
- ○ *Toxic Materials*
- ○ *Oil & Grease*
- ○ *Floatable Materials*
- ○ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ◒ *Capital Costs*
- ◒ *O&M Costs*
- ◒ *Maintenance*
- ○ *Training*
- ● *Suitability for Slopes >5%*

● *High* ○ *Low*

ESC11

Best Management Practices

Additional Information — Mulching

Preparations/Methods and Equipment

Straw Mulch: Should be applied in an even, uniform manner, either by hand or by mulch blowing equipment. Straw mulches must be anchored to prevent the mulch from being blown or washed off the site. Anchoring is achieved in two ways:

- Crimping: The mulch is anchored by running a heavy disc with flat, dull, serrated, closely-spaced blades over the mulched soil. Effective crimping embeds the mulch about 2 inches into the soil without completely covering it. The disc should be run once or twice across the soil. About 2 1/2 tons of straw mulch per acre should be applied if the mulch is anchored by crimping.
- Tacking: Achieved using a emulsified asphalt or binder either independently or followed by crimping. If tacked, straw mulch may be applied at a rate of 1 3/4 ton per acre, and tacked with emulsified asphalt at a rate of 500 gallons per acre.

Wood Fiber Mulch: Typically applied with a hydroseeder at a rate of about 1000 to 1500 pounds per acre, or as a slurry consisting of at least 150 pounds of binder, 400 pounds of wood fiber mulch, and 200 gallons of water per acre.

Requirements

Maintenance: Mulched areas require frequent inspection for damage and deterioration. Requirements will vary greatly based on the type of mulch used and the type of vegetation to be established. Vegetative mulches are usually not intended to be permanent but are extended only as a base for re-seeding or re-vegetation. Where a permanent anchor for vegetation is required, along steep slopes or areas of higher velocity flows, then a geotextile mat or net is recommended (see ESC20).

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, September 1992.

Controlling Erosion of Construction Sites, U.S. Department of Agriculture, Soil Conservation Service, Agriculture Information # 347.

"Draft - Sedimentation and Erosion Control, An Inventory of Current Practices", U.S.E.P.A., April, 1990.

"Environmental Criteria Manual", City of Austin, Texas.

Guides for Erosion & Sediment Control in California, USDA Soils Conservation Service - January 1991.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, June 1981.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April, 1992.

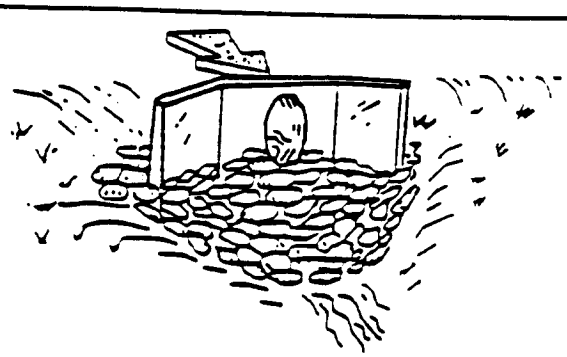
Soil Erosion by Water, U.S. Department of Agriculture, Soil Conservation District, Agriculture Information Bulletin #513.

Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC11

BMP: OUTLET PROTECTION



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

Rock outlet protection is a physical device composed of rock, grouted riprap, or concrete rubble which is placed at the outlet of a pipe to prevent scour of the soil caused by high pipe flow velocities, and to absorb flow energy to produce non-erosive velocities.

SUITABLE APPLICATIONS

- Wherever discharge velocities and energies at the outlets of culverts, conduits or channels are sufficient to erode the next downstream reach.
- Rock outlet protection is best suited for temporary use during construction because it is usually less expensive and easier to install than concrete aprons or energy dissipators.
- A sediment trap below the pipe outlet is recommended if runoff is sediment laden.
- Permanent rock riprap protection should be designed and sized by the engineer as part of the culvert, conduit or channel design.
- Grouted riprap should be avoided in areas of freeze and thaw because the grout will break up.

INSTALLATION/APPLICATION CRITERIA

Rock outlet protection is effective when the rock is sized and placed properly. When this is accomplished, rock outlets do much to limit erosion at pipe outlets. Rock size should be increased for high velocity flows. General recommendations for rock size and length of outlet protection mat are presented in the additional information sheet. Best results are obtained when sound, durable, angular rock is used. CalTrans Standard Specifications or the local municipality can provide additional specifications for constructing outlet protection devices.

REQUIREMENTS

- Maintenance
  - Inspect after each significant rain for erosion and/or disruption of the rock, and repair immediately.
  - Grouted or wire-tied rock riprap can minimize maintenance requirements.
- Cost
  - CalTrans Cost Schedule gives regional cost ranges.

LIMITATIONS

- Large storms often wash away the rock outlet protection and leave the area susceptible to erosion.
- Sediment captured by the rock outlet protection may be difficult to remove without removing the rock.
- Outlet protection may negatively impact the channel habitat.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

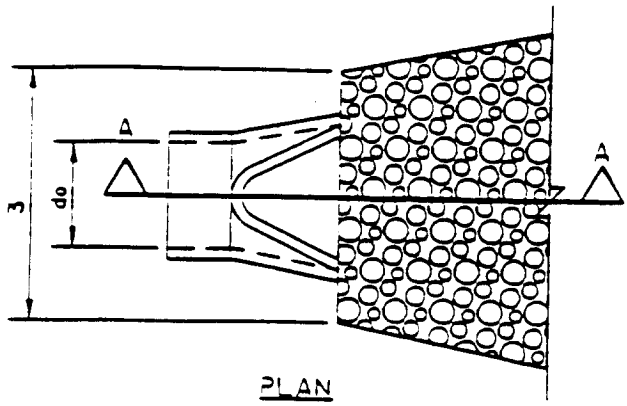
- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

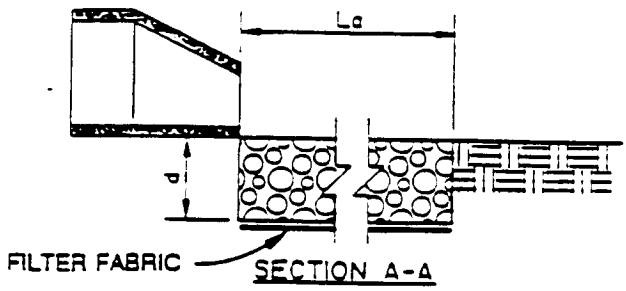
ESC40

Best Management Practices

Additional Information — Outlet Protection



PLAN



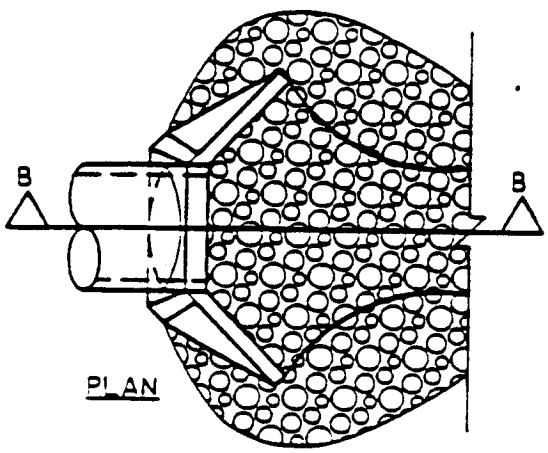
SECTION A-A

PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL

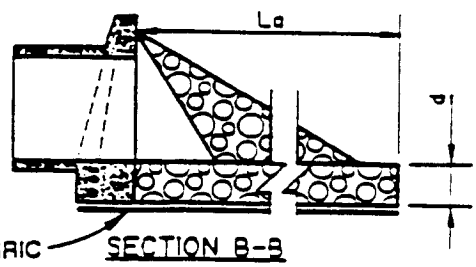
La = LENGTH OF APRON
do = INSIDE PIPE DIAMETER
w = APRON WIDTH
d = APRON THICKNESS

NOTES

1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, OR CONCRETE
2. PIPE DIAMETER, APRON DIMENSIONS, AND AVERAGE ROCK SIZE FOR RIPRAP ARE BASED ON THE DESIGN FLOW RATE AND VELOCITY. La AND ROCK SIZE MUST BE SET TO SLOW THE FLOW TO NON-EROSIVE VELOCITIES (e.g., LESS THAN 10 fps). SEE CALTRANS AND LOCAL AGENCY DESIGN CRITERIA FOR APPROPRIATE SIZING CRITERIA.
3. d = 1.5 TIMES THE MAXIMUM ROCK SIZE DIAMETER BUT NOT LESS THAN 6 INCHES.



PLAN



SECTION B-B

PIPE OUTLET TO WELL-DEFINED CHANNEL

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PIPE OUTLET CONDITIONS

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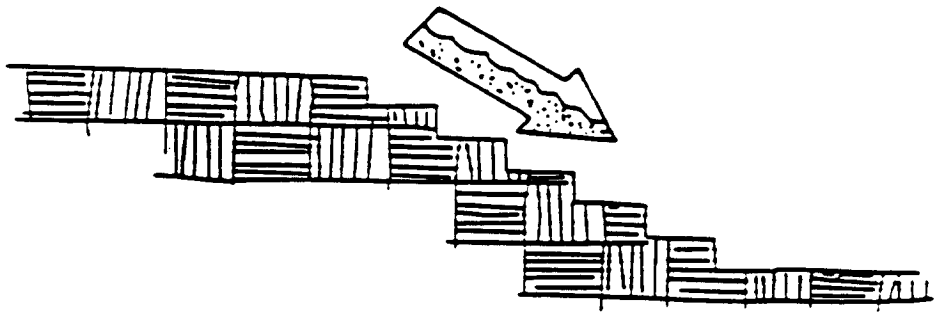
BMP: SLOPE ROUGHENING/TERRACING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- **Stabilize Disturbed Areas**
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

GENERAL DEFINITION

Slope roughening/terracing creates microclimates for establishing vegetation, reduces runoff velocity, increases infiltration, and provides small depressions for trapping sediment.

SUITABLE APPLICATIONS

- Any cleared area prior to seeding and planting.
- Required for cleared, erodible slopes steeper than 3:1 and higher than 5 feet prior to seeding and planting.

INSTALLATION/APPLICATION CRITERIA

Slope roughening/terracing is performed in several ways:

- Stair-step grading.
- Grooving.
- Furrowing.
- Tracking.
- Rough grading.
- No grading.

REQUIREMENTS

- Maintenance
  - Inspect roughened slopes weekly and after rainfall for excessive erosion.
  - Revegetate as quickly as possible.
- Cost (source: EPA, 1992)
  - Surface Roughening: Performed at no (e.g., rough grading) to low (e.g., tracking) cost.
  - Terracing: Average annual cost is $4 per linear foot (2 year useful life).

LIMITATIONS

- Roughening is of limited effectiveness on its own, but is used to speed revegetation.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

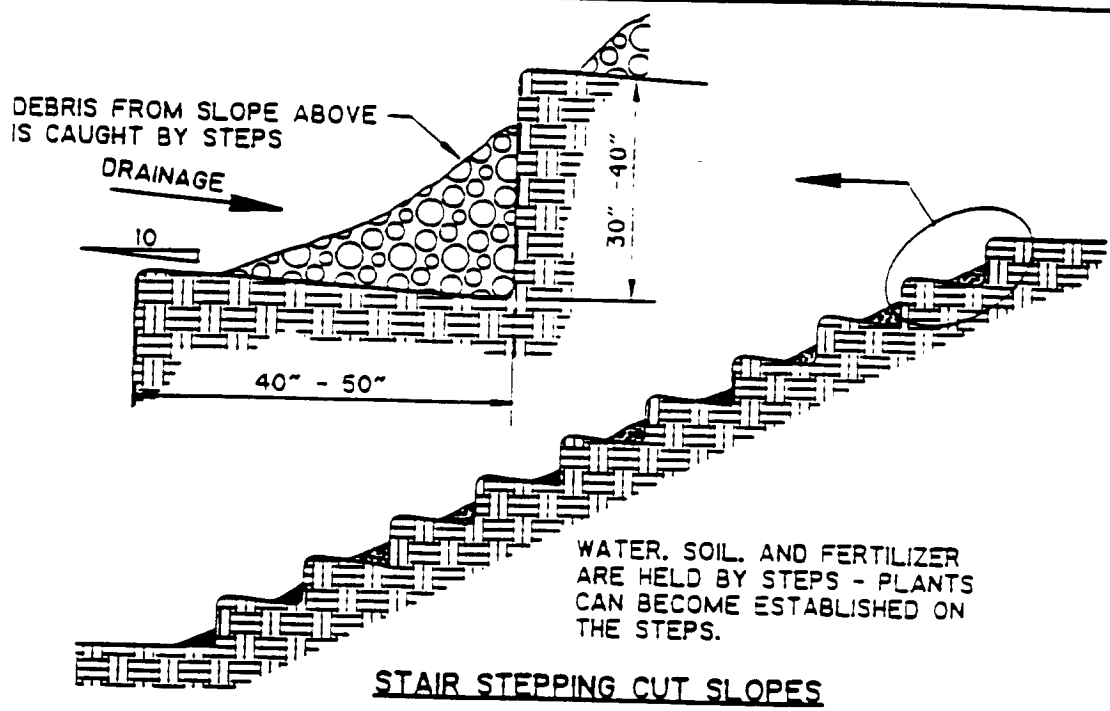
- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

● High ○ Low

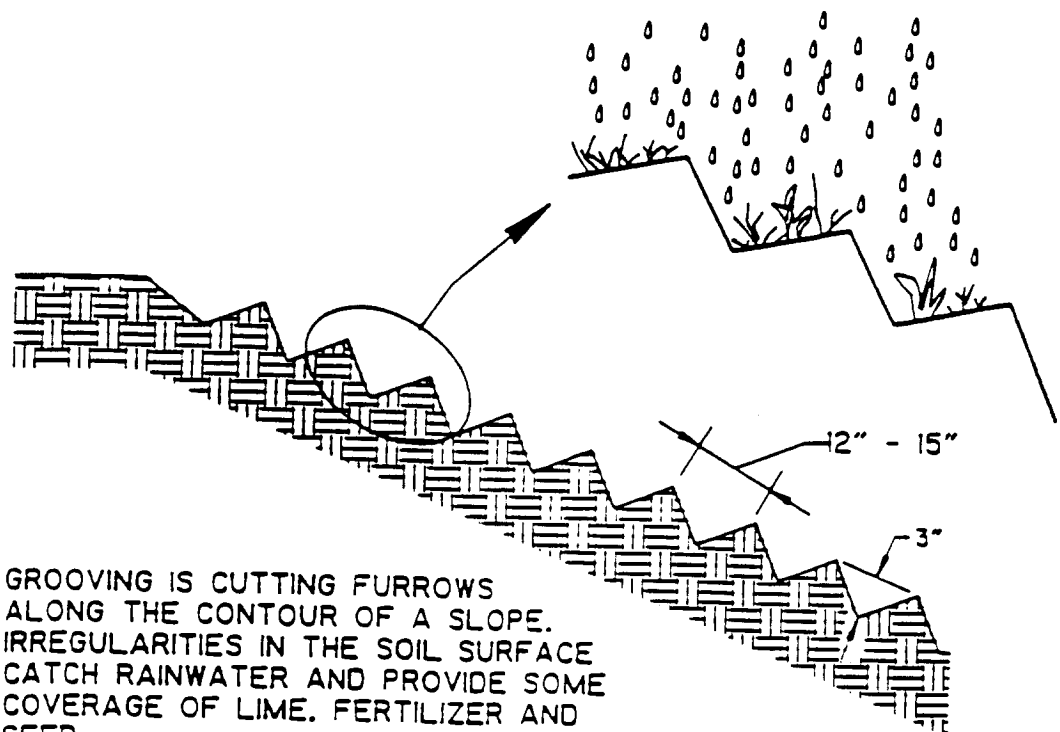
ESC42

Best Management Practices

Additional Information — Slope Roughening/Terracing



STAIR STEPPING CUT SLOPES



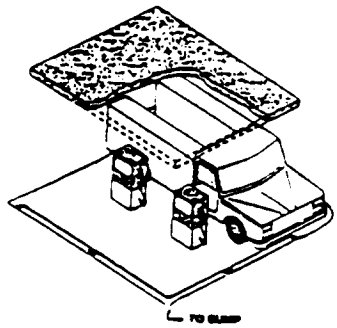
GROOVING IS CUTTING FURROWS ALONG THE CONTOUR OF A SLOPE. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND PROVIDE SOME COVERAGE OF LIME, FERTILIZER AND SEED.

GROOVING SLOPES

ESC42

STAIR-STEPPING CUT SLOPES AND GROOVING SLOPES

ACTIVITY: VEHICLE AND EQUIPMENT FUELING



DESCRIPTION

Prevent fuel spills and leaks, and reduce their impacts to storm water.

APPROACH

- Design the fueling area to prevent the runon of storm water and the runoff of spills:
  - Cover fueling area if possible.
  - Use a perimeter drain or slope pavement inward with drainage to sump.
  - Pave fueling area with concrete rather than asphalt.
- Where covering is infeasible and the fuel island is surrounded by pavement, apply a suitable sealant that protects the asphalt from spilled fuels.
- If dead-end sump is not used to collect spills, install an oil/water separator.
- Install vapor recovery nozzles to help control drips as well as air pollution.
- Discourage "topping-off" of fuel tanks.
- Use secondary containment when transferring fuel from the tank truck to the fuel tank.
- Use adsorbent materials on small spills and general cleaning rather than hosing down the area. Remove the adsorbent materials promptly.
- Carry out all Federal and State requirements regarding underground storage tanks, or install above ground tanks.
- Do not use mobile fueling of mobile industrial equipment around the facility; rather, transport the equipment to designated fueling areas.
- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Train employees in proper fueling and cleanup procedures.
- For a quick reference on disposal alternatives for specific wastes see Table 4.1, SC1.

REQUIREMENTS

- Costs (Capital, O&M)
  - The retrofitting of existing fueling areas to minimize storm water exposure or spill runoff can be expensive. Good design must occur during the initial installation. Extruded curb along the "upstream" side of the fueling area to prevent storm water runon is of modest cost.
- Maintenance
  - Clean oil/water separators at the appropriate intervals.
  - Keep ample supplies of spill cleanup materials on-site.
  - Inspect fueling areas and storage tanks on a regular schedule.

LIMITATIONS

- Oil/water separators are only as effective as their maintenance program.

Applications

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

Targeted Constituents

- ○ Sediment
- ○ Nutrients
- ● Heavy Metals
- ● Toxic Materials
- ○ Floatable Materials
- ○ Oxygen Demanding Substances
- ● Oil & Grease
- ○ Bacteria & Viruses

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

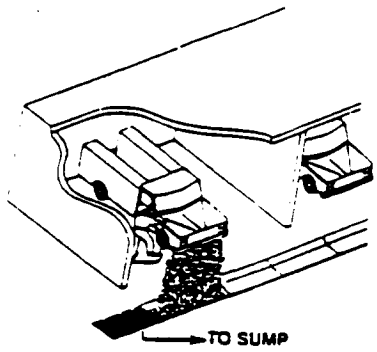
- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ◒ Training

● High ○ Low

SC2

Best Management Practices

ACTIVITY: VEHICLE AND EQUIPMENT WASHING & STEAM CLEANING



Applications

- *Manufacturing*
- *Material Handling*
- *Vehicle Maintenance*
- *Construction*
- *Commercial Activities*
- *Roadways*
- *Waste Containment*
- *Housekeeping Practices*

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment washing and steam cleaning.

APPROACH

- Consider off-site commercial washing and steam cleaning businesses.
- Use designated wash areas, preferably covered to prevent contact with storm water and bermed to contain wash water.
- Discharge wash water to sanitary sewer, after contacting local sewer authority to find out if pretreatment is required.
- Educate employees on pollution prevention measures.
- Consider filtering and recycling wash water.
- Do not permit steam cleaning wash water to enter the storm drain.
- For a quick reference on disposal alternatives for specific wastes see Table 4.1, SC1.

REQUIREMENTS

- Capital costs vary depending on measures implemented.
  - Low cost ($500-1,000) for berm construction.
  - Medium cost ($5,000-20,000) for plumbing modifications (including re-routing discharge to sanitary sewer and installing simple sump).
  - High cost ($30,000-150,000) for on-site treatment and recycling.
- O&M costs increase with increasing capital investment.
- Maintenance
  - Berm repair and patching.
  - Inspection and maintenance of sumps, oil/water separators, and on-site treatment/ recycling units.

LIMITATIONS

- Some municipalities may require pretreatment and monitoring of wash water discharges to the sanitary sewer.
- Steam cleaning can generate significant pollutant concentrations requiring permitting, monitoring, pretreatment, and inspections. The measures outlined in this fact sheet are insufficient to address all the environmental impacts and compliance issues related to steam cleaning.

Targeted Constituents

- ● *Sediment*
- ● *Nutrients*
- ● *Heavy Metals*
- ● *Toxic Materials*
- ○ *Floatable Materials*
- ● *Oxygen Demanding Substances*
- ● *Oil & Grease*
- ○ *Bacteria & Viruses*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

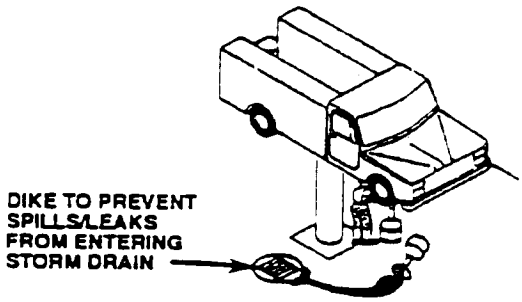
- ◒ *Capital Costs*
- ○ *O&M Costs*
- ○ *Maintenance*
- ◒ *Training*

● *High* ○ *Low*

SC3

Best Management Practices

ACTIVITY: VEHICLE AND EQUIPMENT MAINTENANCE AND REPAIR



Applications

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment maintenance and repair by running a dry shop.

APPROACH

- Keep equipment clean, don't allow excessive build-up of oil and grease.
- Keep drip pans or containers under the areas that might drip.
- Do not change motor oil or perform equipment maintenance in non-appropriate areas. Use a vehicle maintenance area designed to prevent storm water pollution.
- Inspect equipment for leaks on a regular basis.
- Segregate wastes.
- Make sure oil filters are completely drained and crushed before recycling or disposal..
- Make sure incoming vehicles are checked for leaking oil and fluids.
- Clean yard storm drain inlets(s) regularly and especially after large storms.
- Do not pour materials down drains or hose down work areas: use dry sweeping.
- Store idle equipment under cover.
- Drain all fluids from wrecked vehicles.
- Recycle greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic, and transmission fluids.
- Switch to non-toxic chemicals for maintenance when possible.
- Clean small spills with rags, general clean-up with damp mops and larger spills with absorbent material.
- Paint signs on storm drain inlets to indicate that they are not to receive liquid or solid wastes.
- Train employees.
- Minimize use of solvents.
- For a quick reference on disposal alternatives for specific wastes see Table 4.1, SC1.

REQUIREMENTS

- Costs (Capital, O&M) - Should be low, but will vary depending on the size of the facility.
- Maintenance - Should be low if procedures for the approach are followed.

LIMITATIONS

- Space and time limitations may preclude all work being conducted indoors.
- It may not be possible to contain and clean up spills from vehicles/equipment brought on-site after working hours.
- Drain pans (usually 1 ft. x 1 ft.) are generally too small to contain antifreeze, which may gush from some vehicles, so drip pans (3 ft. x 3 ft.) may have to be purchased or fabricated.
- Dry floor cleaning methods may not be sufficient for some spills. Use three-step method instead.
- Identification of engine leaks may require some use of solvents.

Targeted Constituents

- ○ Sediment
- ○ Nutrients
- ● Heavy Metals
- ● Toxic Materials
- ○ Floatable Materials
- ○ Oxygen Demanding Substances
- ● Oil & Grease
- ○ Bacteria & Viruses

● Likely to Have Significant Impact
○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ◒ Training

● High ○ Low

SC4

Best Management Practices

Additional Information — Vehicle and Equipment Maintenance and Repair

Good Housekeeping

Also consider the following measures:

- Avoid hosing down your work areas. If work areas are washed, direct wash water to sanitary sewer.
- Collect leaking or dripping fluids in drip pans or containers. Fluids are easier to recycle if kept separate.
- Keep a drip pan under the vehicle while you unclip hoses, unscrew filters, or remove other parts. Use a drip pan under any vehicle that might leak while you work on it to keep splatters or drips off the shop floor.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.

Do not pour liquid waste to floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections. Used or leftover cleaning solutions, solvents, and automotive fluids and oil are toxic and should not be put in the sanitary sewer. Post signs at sinks to remind employees, and paint stencils at outdoor drains to tell customer and others not to pour wastes down drains.

Oil filters disposed of in trash cans or dumpsters can leak oil and contaminate storm water. Most municipalities prohibit or discourage disposal of these items in solid waste facilities. Place the oil filter in a funnel over the waste oil recycling or disposal collection tank to drain excess oil before disposal. Oil filters can be crushed and recycled. Ask your oil supplier or recycler about recycling oil filters.

Put pans under leaks to collect fluids for proper recycling or disposal. Keeping leaks off the ground reduces the potential for storm water contamination and reduces cleanup time and costs. If the vehicle or equipment is to be stored outdoors, oil and other fluids should be drained first.

Designate a special area to drain and replace motor oil, coolant, and other fluids, where there are no connections to the storm drain or the sanitary sewer and drips and spills can be easily cleaned up.

Be especially careful with wrecked vehicles, whether you keep them indoors or out, as well as vehicles kept on-site for scrap or salvage. Wrecked or damaged vehicles often drip oil and other fluids for several days.

- As the vehicles arrive, place drip pans under them immediately, even if you believe that the fluids have leaked out before the car reaches your shop.
- Build a shed or temporary roof over areas where you park cars awaiting repair or salvage, especially if you handle wrecked vehicles. Build a roof over vehicles you keep for parts.
- Drain all fluids, including air conditioner coolant, from wrecked vehicles and "part" cars. Also drain engines, transmission, and other used parts.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Examples of Effective Programs

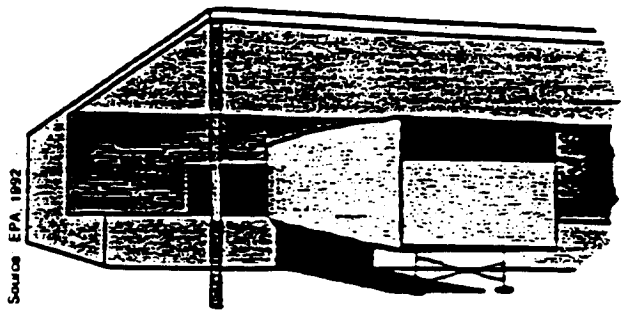
The City of Palo Alto has an effective program for commercial vehicle service facilities. Many of the program's elements, including specific BMP guidance and lists of equipment suppliers, are also applicable to industrial vehicle service facilities.

Pick N Pull Auto Dismantlers in Rancho Cordova drains all fluids from automobiles before they enter the yard.

Ecology Auto Wrecking in Rialto is surrounded by a steel plate/concrete fence and has a completely paved lot that is graded to a central low point. Collected storm water is channeled through an underground drainage system of clarifiers

SC4

ACTIVITY: OUTDOOR LOADING/UNLOADING OF MATERIALS



DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from outdoor loading/unloading of materials.

APPROACH

- Park tank trucks or delivery vehicles so that spills or leaks can be contained.
- Cover the loading/unloading docks to reduce exposure of materials to rain.
- Seal or door skirt between trailer and building can also prevent exposure to rain.
- Design loading/unloading area to prevent storm water runon:
  - grading or berming, and
  - position roof downspouts to direct storm water away from loading/unloading areas.
- Contain leaks during transfer.
- Use drip pans under hoses.
- Make sure fork lift operators are properly trained.
- Employee training for spill containment and cleanup.

REQUIREMENTS

- Costs (Capital, O&M) - Should be low except when covering a large loading/unloading area.
- Maintenance
  - Conduct regular inspections and make repairs as necessary. The frequency of repairs will depend on the age of the facility.
  - Check loading and unloading equipment regularly for leaks:
    - valves,
    - pumps,
    - flanges, and
    - connections.

LIMITATIONS

- Space and time limitations may preclude all transfers from being performed indoors or under cover.
- It may not be possible to conduct transfers only during dry weather.

Applications

- Manufacturing
- **Material Handling**
- Vehicle Maintenance
- **Construction**
- **Commercial Activities**
- Roadways
- Waste Containment
- **Housekeeping Practices**

Targeted Constituents

- ○ Sediment
- ● Nutrients
- ● Heavy Metals
- ● Toxic Materials
- ● Floatable Materials
- ● Oxygen Demanding Substances
- ● Oil & Grease
- ○ Bacteria & Viruses

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

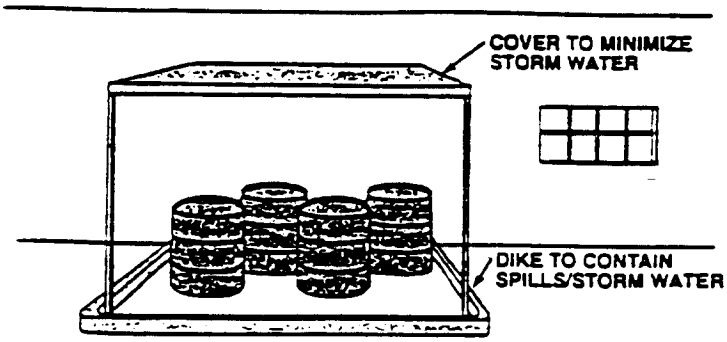
- ◒ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ◒ Training

● High ○ Low

SC5

Best Management Practices

ACTIVITY: OUTDOOR CONTAINER STORAGE OF LIQUIDS



Applications

- Manufacturing
- **Material Handling**
- Vehicle Maintenance
- **Construction**
- **Commercial Activities**
- Roadways
- Waste Containment
- **Housekeeping Practices**

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from outdoor container storage areas by installing safeguards against accidental releases, installing secondary containment, conducting regular inspections, and training employees in standard operating procedures and spill cleanup techniques.

APPROACH

- Protect materials from rainfall, runon, runoff, and wind dispersal:
  - Store materials indoors.
  - Cover the storage area with a roof.
  - Minize storm water runon by enclosing the area or buiding a berm around it.
  - Use "doghouse" for storage of liquid containers.
  - Use covered dumpsters for waste product containers.
- Storage of oil and hazardous materials must meet specific Federal and State standards including:
  - Spill Prevention Control and Countermeasure Plan (SPCC) Plan,
  - secondary containment,
  - integrity and leak detection monitoring, and
  - emergency preparedness plans.
- Train operator on proper storage.
- Safeguards against accidental releases:
  - overflow protecuon devices to warn operator or automauc shut down transfer pumps,
  - protecuon guards (bollards) around tanks and piping to prevent vehicle or forklift damage, and
  - clear tagging or labeling, and restricting access to valves to reduce human error.
- Berm or surround tank or container with secondary containment system:
  - dikes, liners, vaults, or double walled tanks.
- Some municipalities require that secondary containment areas be connected to the sanitary sewer, prohibiting any hard connecuons to the storm drain.
- Facilities with "spill ponds" designed to intercept, treat, and/or divert spills should contact the appropriate regulatory agency regarding envirnmental compliance.

REQUIREMENTS

- Cost (Capital, O&M)
  - Will vary depending on the size of the facility and the necessary controls.
- Maintenance: Conduct routine weekly inspecuons.

LIMITATIONS

- Storage sheds often must meet building and fire code requirements.

Targeted Constituents

- ○ Sediment
- ○ Nutrients
- ● Heavy Metals
- ● Toxic Materials
- ○ Floatable Materials
- ● Oxygen Demanding Substances
- ○ Oil & Grease
- ○ Bacteria & Viruses

● Likely to Have Significant Impact
○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ◒ Training

● High ○ Low

SC6

Best Management Practices

immediately begin cleaning up a spill if one should occur. Operator errors can be prevented by using engineering safe guards and thus reducing accidental releases of pollutant. Safeguards include:

- Overflow protection devices on tank systems to warn the operator to automatically shutdown transfer pumps when the tank reaches full capacity,
- Protecive guards (bollards) around tanks and piping to prevent vehicle or forklift damage, and
- Clearly tagging or labeling all valves to reduce human error.

Tank systems should be inspected and tank integrity tested regularly. Problem areas can often be detected by visually inspecting the tanks frequently. Problems or potential problems should be corrected as soon as possible. Registered and specifically trained professional engineers can identify and correct potential problems such as loose fittings, poor welding, and improper or poorly fitted gaskets for newly installed tank systems. The tank foundations, connections, coatings, and tank walls and piping systems also should be inspected. Inspection for corrosion, leaks, cracks, scratches in protective coatings, or other physical damage that may weaken the tank system should be a part of regular integrity testing.

Secondary Containment

Tanks should be bermed or surrounded by a secondary containment system. Leaks can be detected more easily and spills can be contained when a secondary containment systems are installed. Berms, dikes, liners, vaults, and double-wall tanks are examples of secondary containment systems.

One of the best protective measures against contamination of storm water is diking. Containment dikes are berms or retaining walls that are designed to hold spills. Diking is an effective pollution prevention measure for above ground storage tanks and railcar or tank truck loading and unloading areas. The dike surrounds the area of concern and holds the spill, keeping spill materials separated from the storm water side of the dike area. Diking can be used in any industrial facility, but it is most commonly used for controlling large spills or releases from liquid storage areas and liquid transfer areas.

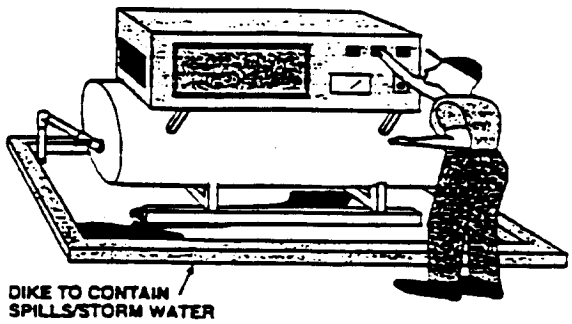
For single-wall tanks, containment dikes should be large enough to hold the contents of the storage tank for the facility plus rain water. For trucks, diked areas should be capable of holding an amount equal to the volume of the tank truck compartment. Diked construction material should be strong enough to safely hold spilled materials. Dike materials can consist of earth, concrete, synthetic materials, metal, or other impervious materials. Strong acids or bases may react with metal containers, concrete, and some plastics. Where strong acids or bases or stored, alternative dike materials should be considered. More acuve organic chemicals may need certain special liners for dikes. Dikes may also be designed with impermeable materials to increase containment capabilities. Dikes should be inspected during or after significant storms or spills to check for washouts or overflows. Regular checks of containment dikes to insure the dikes are capable of holding spills should be conducted. Inability of a structure to retain storm water, dike erosion, soggy areas, or changes in vegetation indicate problems with dike structures. Damaged areas should be patched and stabilized immediately. Earthen dikes may require special maintenance of vegetation such as mulching and irrigation.

Curbing is a barrier that surrounds an area of concern. Curbing is similar to containment diking in the way that it prevents spills and leaks from being released into the environment. The curbing is usually small scaled and does not contain large spills like diking. Curbing is common at many facilities in small areas where handling and transfer liquid materials occur. Curbing can redirect contaminated storm water away from the storage area. It is useful in areas where liquid materials are transferred from one container to another. Asphalt is a common material used for curbing; however, curbing materials include earth, concrete, synthetic materials, metal, or other impenetrable materials. Spilled materials should be removed immediately from curbed areas to allow space for future spills. Curbs should have manually-controlled pump systems rather than common drainage systems for collection of spilled materials. The curbed area should be inspected regularly to clear clogging debris. Maintenance should also be conducted frequently to prevent overflow of any spilled materials as curbed areas are designed only for smaller spills. Curbing has the following advantages:

- Excellent runon control,
- Inexpensive,
- Ease of installment,
- Provides option to recycle materials spilled in curb areas, and
- Common industry practice.

SC6

ACTIVITY: OUTDOOR PROCESS EQUIPMENT OPERATIONS AND MAINTENANCE



Applications

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from outdoor process equipment operations and maintenance by reducing the amount of waste created, enclosing or covering all or some of the equipment, installing secondary containment, and training employees.

APPROACH

- Alter the activity to prevent exposure of pollutants to storm water.
- Move activity indoors.
- Cover the area with a permanent roof.
- Minimize contact of storm water with outside manufacturing operations through berming and drainage routing (run on prevention).
- Connect process equipment area to pubic sewer or facility wastewater treatment system.
- Clean regularly the storm drainage system.
- Use catch basin filtration inserts (Chapter 5, TC6, Media Filtration) as a means to capture particulate pollutants.
- Some municipalities require that secondary containment areas (regardless of size) be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.

REQUIREMENTS

- Costs (Capital, O&M)
  - Variable depending on the complexity of the operation and the amount of control necessary for storm water pollution control..
- Maintenance
  - Routine preventive maintenance, including checking process equipment for leaks.

LIMITATIONS

- Providing cover may be expensive.
- Space limitations may preclude enclosing some equipment.
- Storage sheds often must meet building and fire code requirements.

Targeted Constituents

- ● Sediment
- ○ Nutrients
- ● Heavy Metals
- ● Toxic Materials
- ○ Floatable Materials
- ○ Oxygen Demanding Substances
- ● Oil & Grease
- ○ Bacteria & Viruses

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ● Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ◒ Training

● High ○ Low

SC7

Best Management Practices

Additional Information — Outdoor Process Equipment Operations and Maintenance

REFERENCES

Best Management Practices for Industrial Storm Water Pollution Control. Santa Clara Valley Nonpoint Source Pollution Control Program. 1992.

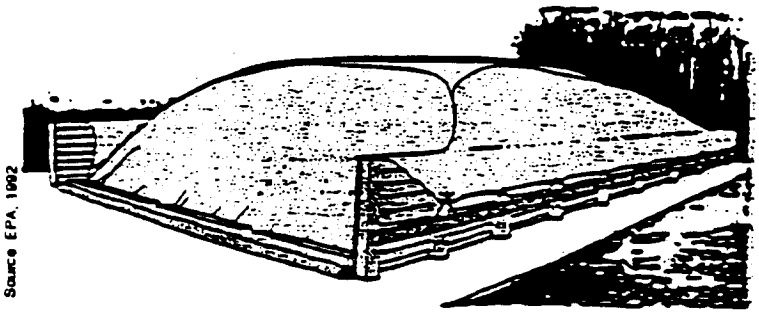
Publications That Can Work For You!: California Department of Toxic Substances Control. Sacramento, CA. 1991 (A list and order form for waste minimization publications from the State).

Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices. EPA 832-R-92-006. USEPA. 1992.

Water Quality Best Management Practices Manual. City of Seattle. 1989.

SC7

ACTIVITY: OUTDOOR STORAGE OF RAW MATERIALS, PRODUCTS, AND BY- PRODUCTS



Applications

- *Manufacturing*
- *Material Handling*
- *Vehicle Maintenance*
- *Construction*
- *Commercial Activities*
- *Roadways*
- *Waste Containment*
- *Housekeeping Practices*

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from outdoor material and product storage areas by enclosing or covering materials, installing secondary containment, and preventing storm water runon.

APPROACH

- Protect materials from rainfall, runon, runoff and wind dispersal:
  - Store material indoors.
  - Cover the storage area with a roof.
  - Cover the material with a temporary covering made of polyethylene, polypropylene, or hypalon.
  - Minimize storm water runon by enclosing the area or building a berm around the area.
  - Use "doghouse" for storage of liquid containers.
- Parking lots or other surfaces near bulk materials storage areas should be swept periodically to remove debris blown or washed from storage area.
- Install pellet traps at storm water discharge points where plastic pellets are loaded and unloaded.
- Keep liquids in a designated area on a paved impervious surface within a secondary containment.
- Keep outdoor storage containers in good condition.
- Use berms and curbing.
- Use catch basin filtration inserts (Chapter 5, TC6, Media Filtration)

REQUIREMENTS

- Costs (Capital, O&M)
  - Costs should be low except where large areas may have to be covered.
- Maintenance
  - Berm and curbing repair and patching.

LIMITATIONS

- Space limitations may preclude storing some materials indoors.
- Some municipalities require that secondary containment areas (regardless of size) be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.
- Storage sheds often must meet building and fire code requirements.

Targeted Constituents

- ● *Sediment*
- ○ *Nutrients*
- ● *Heavy Metals*
- ● *Toxic Materials*
- ● *Floatable Materials*
- ○ *Oxygen Demanding Substances*
- ● *Oil & Grease*
- ○ *Bacteria & Viruses*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ◒ *Capital Costs*
- ○ *O&M Costs*
- ○ *Maintenance*
- ◒ *Training*

● *High* ○ *Low*

SC8

Best Management Practices

ACTIVITY: WASTE HANDLING AND DISPOSAL

Applications

- *Manufacturing*
- *Material Handling*
- *Vehicle Maintenance*
- *Construction*
- *Commercial Activities*
- *Roadways*
- *Waste Containment*
- *Housekeeping Practices*

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from waste handling and disposal by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, re-use, and recycling; and preventing runon and runoff from waste management areas.

APPROACH

- Maintain usage inventory to limit waste generation.
- Raw material substitution or elimination.
- Process or equipment modification.
- Production planning and sequencing.
- SARA Title III, Section 313 requires reporting for over 300 listed chemicals and chemical compounds. This requirement should be used to track these chemicals although this is not as accurate a means of tracking as other approaches.
- Track waste generated.
  - Characterize waste stream.
  - Evaluate the process generating the waste.
  - Prioritize waste streams using: manifests, biennial reports, permits, environmental audits, SARA Title III reports, emission reports, NPDES monitoring reports.
  - Inventory reports.
  - Data on chemical spills.
  - Emissions.
  - Shelf life expiration.
- Use design data and review: process flow diagram, materials and applications diagram, piping and instructions, equipment list, plot plan.
- Use raw material and production data and review: composition sheets, materials safety data sheets (MSDS), batch sheets, product or raw material inventory records, production schedule, operator data log.
- Use economic data and review:
  - Waste treatment and disposal cost.
  - Product utility and economic cost.
  - Operation and maintenance labor cost.
- Recycle materials whenever possible.
- Maintain list of and the amounts of materials disposed.
- Waste segregation and separation.
- Check industrial waste management areas for spills and leaks.
- Cover, enclose, or berm industrial wastewater management areas whenever possible to prevent contact with runon or runoff.
- Equip waste transport vehicles with anti-spill equipment.

Targeted Constituents

- ○ *Sediment*
- ○ *Nutrients*
- ● *Heavy Metals*
- ● *Toxic Materials*
- ○ *Floatable Materials*
- ○ *Oxygen Demanding Substances*
- ● *Oil & Grease*
- ○ *Bacteria & Viruses*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ○ *Capital Costs*
- ◒ *O&M Costs*
- ○ *Maintenance*
- ◒ *Training*

● *High* ○ *Low*

SC9

Best Management Practices

Additional Information — Waste Handling and Disposal

Industrial waste management activities occur in areas that can contaminate storm water and include landfills, waste piles, wastewater and solid waste treatment and disposal, and land application. Typical operations which affect storm water pollution may include waste pumping, treatment chemicals storage, mixing, aeration, clarification, and solids dewatering.

Waste Reduction

Waste spilled, leaked, or lost from waste management areas or outside manufacturing activities may build up in soils or in other surfaces and be carried away by storm water runoff. There is also a potential for liquid waste from lagoons or surface impoundments to overflow to surface waters or soak the soil where pollutants may be picked up by storm water runoff.

Waste reduction for manufacturing activities is the best way to reduce the potential of storm water contamination from waste management areas. Reduction in the amount of industrial waste generated can be accomplished using many different types of source controls such as:

- Production planning and sequencing.
- Process or equipment modification.
- Raw material substitution or elimination.
- Loss prevention and housekeeping.
- Waste segregation and separation.
- Close loop recycling.

An approach to reduce storm water pollution from waste handling and disposal is to assess process activities at the facility and reduce waste generation. The assessment is designed to find situations where waste can be eliminated or reduced and emissions and environmental damage can be minimized. The assessment involves collecting process specific information, setting pollution prevention targets, and developing, screening and selecting waste reduction options for further study. Starting a waste reduction program is economically beneficial because of reduced raw material purchases and lower waste disposal fees. In addition, material tracking systems to increase awareness about material usage can reduce spills and minimize contamination, thus reducing the amount of waste produced.

Spill/Leak Control

Waste can be prevented from contaminating storm water by checking waste management areas for leaking containers or spills. Corroded or damaged containers can begin to leak at any time. Transfer waste from these damaged containers into safe containers. Dumpsters should be covered to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster. Leaking equipment including valves, lines, seals, or pumps should be repaired promptly.

Vehicles transporting waste should have spill prevention equipment that can prevent spills during transport. The spill prevention equipment includes:

- Vehicles equipped with baffles for liquid waste.
- Trucks with sealed gates and spill guards for solid waste.

Loading or unloading wastes can contaminate storm water when the wastes are lost from the transfer. Loading systems can also be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.

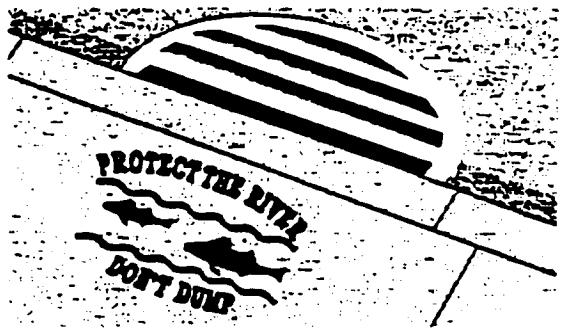
Runon/Runoff Prevention

Storm water runon should be prevented from entering the waste management area. Storm water pollution from runon can be prevented by enclosing the area or building a berm around the area. Other alternatives for reducing storm water pollution include:

- Preventing the waste materials from directly contacting rain.

SC9

BMP: STORM DRAIN SYSTEM SIGNS



Program Elements

- New Development
- Residential
- Commercial Activities
- Industrial Activities
- Municipal Facilities
- Illegal Discharges

DESCRIPTION

Stenciling of the storm drain system (inlets, catch basins, channels, and creeks) with prohibitive language/graphic icons discourages the illegal dumping of unwanted materials.

APPROACH

- Create a volunteer work force to stencil storm drain inlets, and use municipal staff to erect signs near drainage channels and creeks.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.1, SC50, Illegal Dumping Control.

REQUIREMENTS

- Cost Considerations
  - Volunteer work force serves to lower program cost.
  - Stenciling kits require procurement of durable/disposable items.
  - Need for storage/maintenance of stenciling kits requires planning.
  - Program can aid in the cataloging of the storm drain system.
- Regulations
  - Develop and enforce an ordinance that requires inlets, catch basins, channels, and creeks to be fitted with anti-dumping, pollution prevention signs.
- Administrative/Staffing
  - Primary staff demand is for program setup to provide marketing and training.
  - Ongoing/follow-up staff time is minimal because of volunteer services.
  - Minimum 2 persons are required for high traffic areas, commercial and industrial zones.
  - Staff requirement at program headquarters for emergencies, questions, etc.
- Equipment
  - Storm drain stenciling kits.
- Training
  - Training sessions of approximately 10-15 minutes will cover stenciling procedures, including how to stencil, record keeping, problem drain notation, etc.
  - Proper health and safety protocol (buddy system, traffic, health concerns, etc.).

PUBLIC EDUCATION/PARTICIPATION

- Promote volunteer services (individual and business) through radio/television and mail-out campaigns.
- Public reporting of improper waste disposal by a HOTLINE number stenciled onto the storm drain inlet.

Targeted Constituents

- ● Sediment
- ● Nutrients
- ○ Heavy Metals
- ● Toxic Materials
- ● Floatable Materials
- ● Oxygen Demanding Substances
- ● Oil & Grease
- ○ Bacteria & Viruses

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ◒ O&M Costs
- ○ Regulatory
- ○ Staffing
- ◒ Training
- ○ Administrative

● High ○ Low

SC30

Best Management Practices

Additional Information — Storm Drain System Signs

Storm drain system signs act as highly visible source controls that are typically stenciled directly adjacent to storm drain inlets. The signs contain brief statements that discourage the dumping of improper materials into the storm drain system. Graphical icons, either illustrating anti-dumping symbols or images of receiving water fauna, are effective supplements to the anti-dumping message. The intent of such a storm drain system stenciling program is to enhance public awareness of the pollutant effect on local receiving waters from storm water runoff and also to discourage individual's habitual waste disposal actions (e.g. automotive fluids and landscaping wastes).

Approach

An effectively implemented stenciling program encourages change in personal behavior and helps minimize non-point source pollutants from entering the storm drain system. An additional benefit is that waste and catch basin maintenance is minimized through the reduction of disposed materials into storm drain inlets. Finally, some stenciling programs include posting of community hotline numbers for effective reporting and monitoring of improper disposal practices, plus the encouragement of use of household hazardous waste collection and used oil recycling programs.

An important aspect of a stenciling program is the distribution of informational flyers that educate the neighborhood (business or residential) about storm water pollution, the storm drain system, and the watershed, and that provides information on alternatives such as recycling, household hazardous waste disposal, and safer products.

Storm drain inlet stenciling programs are generally handled through community volunteer efforts. Municipal staff must first organize, market, and provide training for program initialization. However, through an aggressive public education program, the majority of the labor should be generated through volunteer services. Successful programs have involved substantial input from business, civic, school, neighborhood, and environmental organizations. Encourage schools, churches, girl/boy scout troops, and environmental groups to add storm drain stenciling as a lesson/field trip to existing activities. This provides a ready-made labor force to use the stenciling materials developed by the municipality.

The stenciling project can be part of a larger volunteer "watershed awareness" public education program. Stenciling should be the easiest volunteer activity, or the first step in "watershed awareness" education, ultimately leading to an all volunteer water quality monitoring program. Municipal staff must initially provide an inventory of curb inlets and develop the stencil. The stenciled language is most effective if it represents a consistent message adopted from the city's public education department. Communities in California have used messages such as: "No Dumping, Flows to Bay", "Protect the Bay, Don't Dump", and "Dump No Waste, Flows to Bay." Program logos and generalized drawings of a fish or a bird may be added to provide a visual aid as well. Once the storm inlet language is determined, stencil painting kits must be ordered and training programs/instruction sheets may be developed.

The storm drain stenciling kits include stencil, paint, paint brush, plastic gloves, catch basin map, clipboard, instructions, liability release form, identification form, rags, whisk broom or brush, paper towels, trash bags, safety vests, and a 5-gallon bucket to hold materials.

Readability of stencils is critical to their effectiveness. Wherever possible stencils should be painted on a smooth surface such as cement, as opposed to asphalt. As with any painting, surface preparation is key to paint adhesion and thus readability and durability. Extra effort expended to clean the surface during the initial painting helps reduce the need for re-painting. Some programs have gone so far as to paint a background color first followed by the stencil in a contrasting color to increase readability.

Many communities use water-based latex exterior paint from their traffic control departments. Brands include: Fuller O'Brien, Arvoe Stripping Paint, Sherman-Williams Metalex, and All-Kids Traffic Paint. Spray paints should have a VOC rating of less than 250 (required by EPA). If there is concern over spray paints, a refillable paint brush called

SC30

Additional Information — Storm Drain System Signs

Municipal Storm Water Discharge Management Program. City of Stockton, California. Camp Dresser & McKee, Walnut Creek. 1992.

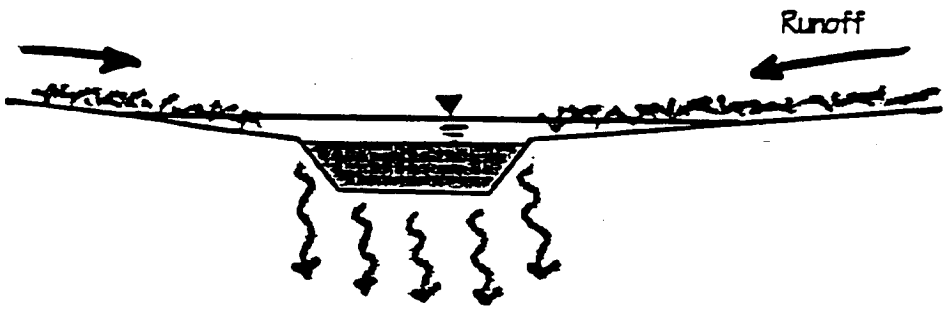
Regional Water Quality Control Plants' News. City of Palo Alto, California. 1991.

Storm Water Program Guidance Manual for the Puget Sound Basin. (Draft). City of Seattle, Washington. Drainage and Wastewater Utility. 1992.

Urban Runoff: A Pollution Abatement Program. Heal the Bay, Santa Monica, California. 1992.

SC30

BMP: INFILTRATION



DESCRIPTION

A family of systems in which the majority of the runoff from small storms is infiltrated into the ground rather than discharged to a surface water body. Infiltration systems include: ponds, vaults, trenches, dry wells, porous pavement, and concrete grids.

EXPERIENCE IN CALIFORNIA

Infiltration ponds have been used by many local jurisdictions and CalTrans in the Central Valley for about three decades.

SELECTION CRITERIA

- Need to achieve high level of particulate and dissolved pollutant removal.
- Suitable site soils and geologic conditions: low potential for long-term erosion in the watershed.
- Multiple management objectives (e.g., ground water recharge or runoff volume control).

LIMITATIONS

- Loss of infiltrative capacity and high maintenance cost in fine soils.
- Low removal of dissolved pollutants in very coarse soils.
- Not suitable on fill sites or steep slopes.
- Risk of ground water contamination in very coarse soils, may require ground water monitoring.
- Should not use until upstream drainage area is stabilized.
- Infiltration facilities could fall under Chapter 15, Title 23, of California Code of Regulations regarding waste disposal to land.

DESIGN AND SIZING CONSIDERATIONS

- Volume sized to capture a particular fraction of annual runoff.
- Pretreatment in fine soils.
- Emergency overflow or bypass for larger storms.
- Observation well in trenches.

CONSTRUCTION/INSPECTION CONSIDERATIONS

- Protect infiltration surface during construction.
- Vegetation of pond sides to prevent erosion.
- Frequent inspection for clogging during construction.

Considerations

- Soils
- Area Required
- Slope
- Water Availability
- Aesthetics
- Hydraulic Head
- Environmental Side Effects

Targeted Constituents

- ● Sediment
- ◒ Nutrients
- ● Heavy Metals
- ● Toxic Materials
- ● Floatable Materials
- ● Oxygen Demanding Substances
- ● Oil & Grease
- ● Bacteria & Viruses

● Likely to Have Significant Impact
○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training

● High ○ Low

TC1

Best Management Practices

Additional Information — Infiltration

General Information

Where conditions are suitable infiltration systems may be the preferred choice because storm water is placed into the ground thereby reducing excess runoff and providing groundwater recharge.

Infiltration systems include:

- Infiltration basin which is an open surface pond or underground vault (Figure 1A)
- Infiltration trench which is an underground chamber filled with rock, also called a rock well (Figure 1B).
- Dry well or "vertical" infiltration trench (Figure 1C)
- Porous pavement both asphalt and concrete (Figure 1D).
- Concrete grid and modular pavement which are lattice grid structures with grassed, pervious material placed in the openings (Figure 1E).

Infiltration basins are generally used for areas less than five acres but can handle tributary areas up to 50 acres if the soil is very permeable. The other systems are suitable only for small sites of a few acres. Porous pavement and concrete grids should only be used in low traffic areas like parking areas. Studies have shown that porous pavement is strong and will last as long as conventional pavement (Field, et al. 1982; Gburek and Urban, 1980). Experience in Florida and Maryland indicates that concrete porous pavement performs better than porous asphalt. Porous pavements and underground facilities may be favored at industrial sites where land is already needed for business activities.

Infiltration systems should be considered where dissolved pollutants are of concern. However, satisfactory removal efficiencies require soils that contain loam. Coarse soils are not effective at removing dissolved pollutants and fine particulates before the storm water reaches the ground water aquifer.

Local jurisdictions may not feel that infiltration systems are appropriate on industrial sites where spills of hazardous chemicals can occur. However, spill control procedures may provide satisfactory control (Chapter 4). Care should be taken when considering the multiple objectives of using infiltration systems for water quality treatment, ground water recharge, and flood control. Infiltration basins, trenches, and porous pavement can meet storm water detention requirements.

Three concerns with infiltration systems are clogging, accumulation of metals, and ground water contamination. Infiltration systems have been used successfully on sandy soils in the Central Valley of California and Long Island, New York for many years without operational problems. In both instances the primary objectives are ground water recharge and flood control, not water quality treatment.

Problems can be expected with infiltration systems placed in finer soils. The State of Maryland has emphasized these systems for about 10 years where they have been installed in soils with infiltration rates as low as 0.27 inches per hour. A recent survey (Lindsey, et al., 1991) found that a third of the facilities examined (177) were clogged and another 18% were experiencing slow infiltration. Dry wells that treat roof runoff had the fewest failures (4%) and porous pavement the most (77%). Dry wells may have the lowest failure rate because they only handle roof runoff. The primary causes of failure appear to be inadequate pretreatment and lack of soil stabilization in the tributary watershed, as well as poor construction practices (Shaver, pers. comm.). Erosion of the slopes of infiltration ponds was a significant problem in almost half the facilities surveyed. Problems have occurred in the Central Valley with facilities placed on finer soils, as in the case of Modesto. (Tulloch, pers. comm.).

Based on a review of several studies of infiltration facilities in sandy and loamy soils concluded that "monitoring ... has not demonstrated significant contamination ... although highly soluble pollutants such as nitrate and chloride have been shown to migrate to ground water" (USEPA, 1991). However, pollution has been found in ground water where infiltration devices are in coarse gravels (Adophson, 1989; Miller, 1987).

TC1

Additional Information — Infiltration

Suggested references on the design of porous pavement include Maryland (1984) and Florida (1988).

Additional design considerations

- For basins and trenches, pretreat the storm water to remove the floatables and settleable solids, particularly when placing these systems in finer soils. Pretreatment can be accomplished with any of the other treatment control BMPs in this handbook.

Communities and CalTrans have used infiltration systems in the Central Valley for more than two decades without pretreatment. Clogging has not been a problem with well maintained systems discharging to sands and courser soils, suggesting that pretreatment is of limited value. Pretreatment when infiltrating to finer soils is suggested by the experience of Maryland described previously. An infiltration facility sized only for treatment is much smaller than one sized for flood control and therefore may be more susceptible to clogging. Communities in the Central Valley (Fresno, Modesto) require a retention volume that captures the 100 year event or about 20,000 ft^3 per impervious tributary acre. In comparison, above Equation (1) will provide a volume in the range of 2,000 ft^3 per impervious acre.

For small systems treating less than a few acres of pavement, pretreatment can be accomplished with a Type 2 catch basin and a submerged outlet. The diameter and depth of the sump should be at least four times the diameter of the outlet pipe to the infiltration system (Lager, et al., 1977). See Figure 1C. The catch basin cover should be stenciled "dump no waste". Vegetated biofilters can also be used although they will not likely be feasible in industrial sites which tend to be fully utilized.

Additional design considerations for basins include:

- Do not locate on fill sites, or on or near steep slopes
- Energy dissipation at inlet to minimize erosion
- Vegetate the slopes for the same reason
- Vegetate the bottom to reduce tendency to clog with fines
- Freeboard of 1 foot
- Side slopes of at least 3:1 for safety, and for ease of mowing (4:1 slopes are prefered)
- Incorporate bypass or overflow for large events
- Provide dedicated access to the basin bottom (minimum 4:1) for maintenance vehicles

Vegetating the slopes and bottom will be difficult unless the facility can be [illegible]ted during the summer. Drought tolerant ground cover species may be more suitable. See TC4 Biofilters for recommended species.

Additional design considerations for trenches include:

- Do not locate on fill sites, or on or near steep slopes
- A 4 inch or 6 inch diameter observation well with locking cap, to check for loss of infiltrative capacity
- 6 inch sand layer or geofabric at the bottom
- Geofabric around trench walls to prevent soils from migrating into the trench rock matrix
- Geofabric 12 inches below ground surface with 3/4 rock placed on top, which serves as filter for coarse solids
- Backfill and filter rock should be clean washed aggregate 1 inch to 3 inches diameter
- Incorporate bypass or overflow for large events
- Provide dedicated access for maintenance vehicles

For porous pavement, experience in Maryland suggest that asphalt pavement has continuous plugging problems and a limited life. Frequent maintenance is required. For drywells where access for maintenance is difficult if not impossible pretreatment of the storm water is highly recommended. Such pretreatment may include biofilters, sumps, etc. Consultation with the local jurisdiction regarding the design of drywells is required.

TC1

Additional Information — Infiltration

Lindsey, G., L. Roberts, and W. Page, 1991, "Stormwater Management Infiltration Practices in Maryland: A Second Survey", Maryland Department of the Environment.

Maryland (State of), 1984, "Standards and Specifications for Infiltration Practices", Department of Natural Resources.

Metropolitan Washington Council of Governments (MWCOG), March, 1992. "A Current Assessment of Urban Best Management Practices: Techniques for Reducing Nonpoint Source Pollution in the Coastal Zone".

Miller, S., 1987, "Urban Runoff Quality and Management in Spokane" in Proceedings of the Northwest Nonpoint Source Pollution Conference, March 24-25, Seattle.

Portland Cement Pervious Pavement Manual. Florida Concrete Products Association, Inc., 649 Vassar Street, Orlando, Florida, 32804 (no date).

Schueler, T.R., 1987, "Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPs", Metropolitan Washington Council of Governments.

Shaver, E., pers. comm., State of Delaware Department of Natural Resources.

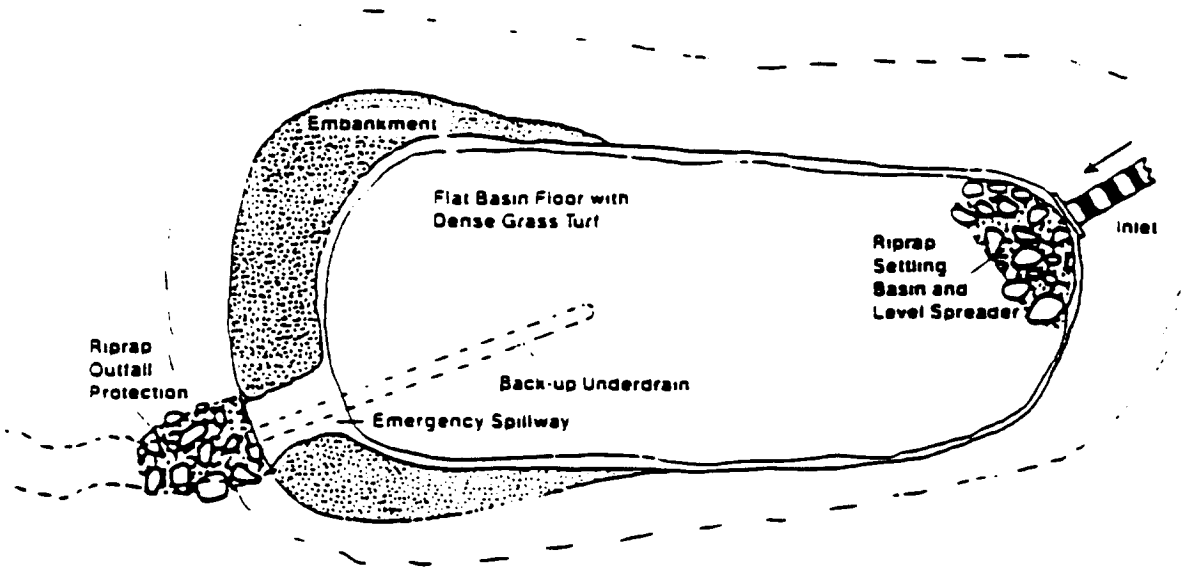
Stahre, P. and Urbonas, B., 1989, "Swedish Approach to Infiltration and Percolation Design", in Design of Urban Runoff Quality Control, Americans Society of Civil Engineers.

Tulloch, Alice, pers. comm., City of Modesto Public Works.

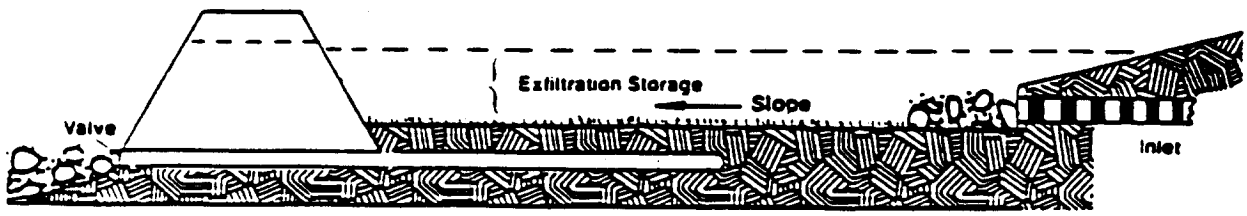
United States Environmental Protection Agency (USEPA), 1991, "Detention and Retention Effects on Groundwater", Region V.

TC1

Top View



Side View



Back-up Underdrain Pipe in Case of Standing Water Problems

Source: Schueler (1987)

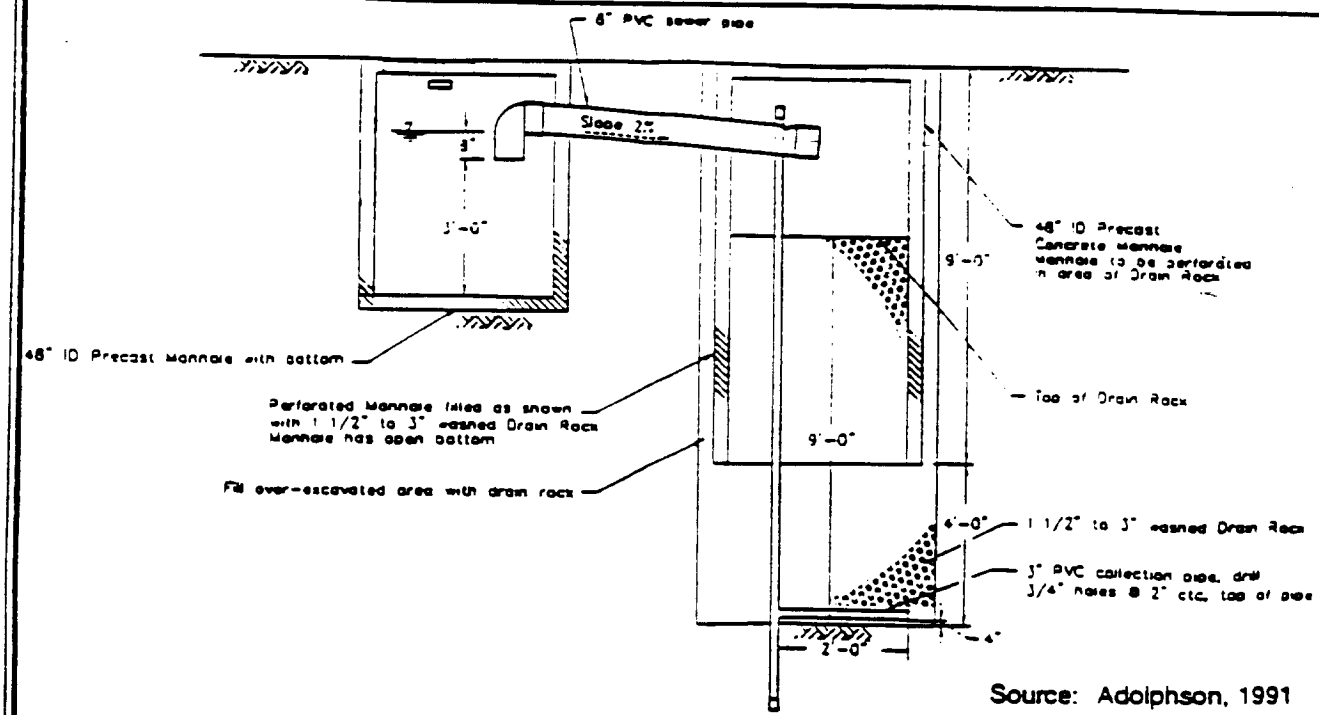
NOTE:

1. Backup underdrain is not used in most applications because plugging occurs in soil above the drain.

2. An infiltration basin can also be excavated (typically 2 to 6 feet deep) as long as the bottom of the basin is 3 feet above high seasonal water table.

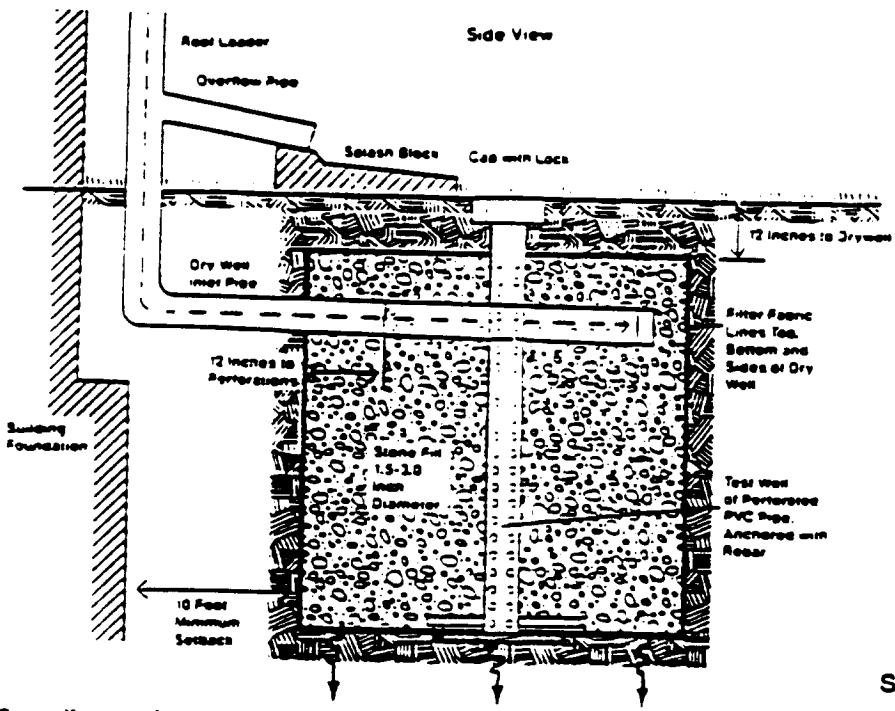
FIGURE 1A. INFILTRATION BASIN

TC1



Source: Adolphson, 1991

WITH PRETREATMENT



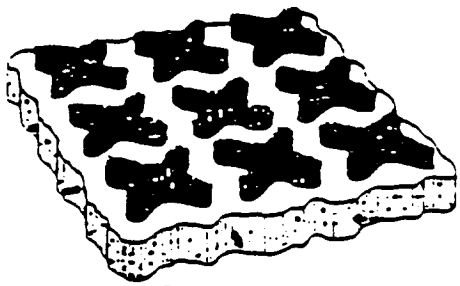
Source: Schueler, 1987

Note: See discussion on page 5-6 regarding design considerations.

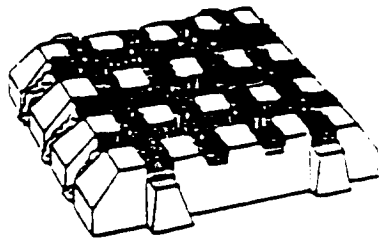
WITHOUT PRETREATMENT

TC1

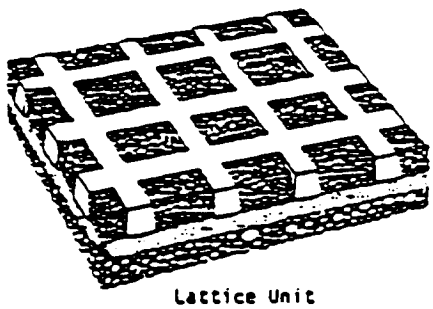
FIGURE 1C. DRYWELL CONFIGURATIONS



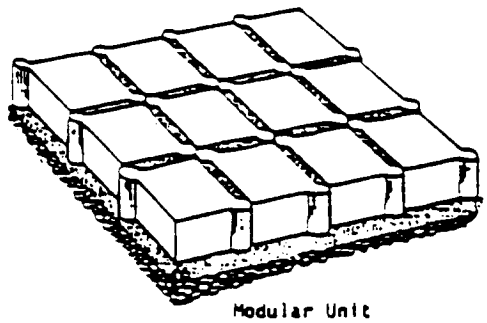
Poured-in-Place Slab



Castellated Unit



Lattice Unit



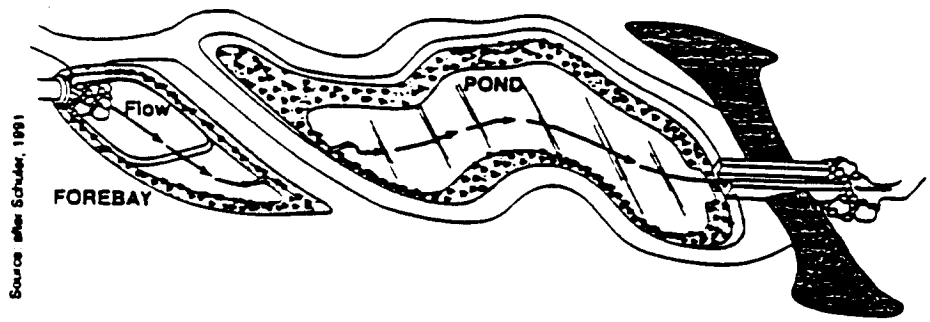
Modular Unit

Source: State of Florida

FIGURE 1E. TYPES OF GRID AND MODULAR PAVEMENTS

TC1

BMP: WET PONDS



Source after Schueler, 1991

DESCRIPTION

A wet pond has a permanent water pool to treat incoming storm water. An enhanced wet pond includes a pretreatment sediment forebay

CALIFORNIA EXPERIENCE

There are regional flood control basins in California that function like wet ponds or constructed wetlands (TC3).

SELECTION CRITERIA

- Need to achieve high level of particulate and some dissolved contaminant removal.
- Ideal for large, regional tributary areas.
- Multiple benefits of passive recreation (e.g., bird watching, wildlife habitat).

LIMITATIONS

- Concern for mosquitoes and maintaining oxygen in ponds.
- Cannot be placed on steep unstable slopes.
- Need base flow or supplemental water if water level is to be maintained.
- Infeasible in very dense urban areas.
- In California the wet season is coincident with minimal plant growth.
- Could be regulated as a wetlands or under Chapter 15, Title 23, California Code of Regulations regarding waste disposal to lands.
- Pending volume and depth, pond designs may require approval from State Division of Safety of Dams.

DESIGN AND SIZING CONSIDERATIONS

- Wet pool volume determined by Figures 2B and C.
- Water depth of 3 to 9 feet.
- Wetland vegetation, occupying 25-50% of water surface area.
- Design to minimize short-circuiting.
- Bypass storms greater than two year storm.

CONSTRUCTION/INSPECTION CONSIDERATIONS

- Be careful when installing wetland vegetation.

MAINTENANCE REQUIREMENTS

- Remove floatables and sediment build-up.
- Correct erosion spots in banks.
- Control mosquitoes.
- May require permits from various regulatory agencies, e.g. Corps of Engineers.

COST CONSIDERATIONS

- Costs for providing supplemental water may be prohibitive.

Considerations

- Soils
- Area Required
- Slope
- Water Availability
- Aesthetics
- Hydraulic Head
- Environmental Side Effects

Targeted Constituents

- ● Sediment
- ◒ Nutrients
- ◒ Heavy Metals
- ◒ Toxic Materials
- ● Floatable Materials
- ◒ Oxygen Demanding Substances
- ◒ Oil & Grease
- ◒ Bacteria & Viruses

● Likely to Have Significant Impact
○ Probable Low or Unknown Impact

Implementation Requirements

- ● Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training

● High ○ Low

TC2

Best Management Practices

Additional Information — Wet Ponds

Sizing the Permanent Pool

Figure 2B shows the relationship between performance and the long-term removal efficiency for average conditions in California (USEPA (1986) as adapted in FHWA (1989)). V_b/V_r is the ratio of the volume of the wet pond to the volume of the runoff of the mean storm event from the tributary watershed. The depth of the mean storm for various areas of California is shown in Figure 2C. The recommended performance goal is 80%. The volume of the pond is therefore calculated as follows:

$$V_b = 3S_d A_i 43560/12 = 10890 S_d A_i \quad (1)$$

where: V_b = pond volume (ft^3)
S_d = mean storm depth (inches)
A_i = impervious acres in the tributary watershed

For A_i the engineer may use directly connected impervious acres because it more correctly represents the area being treated and would allow a smaller facility. Although impervious area and directly connected impervious area are not the same, they are reasonable given the uncertainty of the methodology and expected pond performance.

This volume should be compared with the 14 days detention time criterion and the more conservative volume (i.e., larger volume) should be used for sizing.

Adding Detention Storage to the Permanent Pool

Some investigators believe that detention volume added above the permanent pool enhances pool performance. The State of Florida, for example, requires one basin inch of detention storage be added to the permanent pool and be bled down over a 60 hour period. This requirement, however, adds considerably to the size of the basin, and the literature does not indicate that water quality performance is improved. Therefore detention storage should be added only if the pond is to be used for drainage control in addition to water quality control. As with extended detention, consideration should be given to bypassing the facility for flows greater than the two year storm so that bed load is not trapped in the pond.

A perforated riser outlet recommended by the Denver Urban Drainage and Flood Control Districts is illustrated in Figures 2D and 2E. Other outlet concepts are illustrated in TC5, Extended Detention Basins, Figure 5B.

Additional Considerations

- Place wetland vegetation around the pond perimeter and near the outlet.

Rooted vegetation around the pond perimeter serves several functions (Figure 2A). It enhances the removal of dissolved pollutants (see T3, Constructed Wetlands); it may reduce the formation of floating algal mats; it reduces the risk of people falling into the deeper areas of the pond; and, it provides some habitat for insects, aquatic life, and wetland wildlife. The "shelf" for the vegetation should be about 10 feet wide with a water depth of 1 to 2 feet. The total area of the "shelf" should be 25-50% of the water surface area. Vegetation near the exit will assist settling of solids. An alternative is a rock filter which is used in many wastewater oxidation ponds where loss of algae in the effluent is a common problem during the growth season (Rich, L., 1988).

If mesquites are of particular concern, it would be advisable to inhibit the growth of emergent wetland vegetation around the perimeter by using steep slopes, say, 2:1, and by minimizing the amount of pond area that has a depth less than 18". Gambusia (mosquito fish) can also be planted in larger ponds but the water level must be maintained to insure their survival during the dry season.

TC2

Additional Information — Wet Ponds

The sides of an earthen wall should be vegetated to avoid erosion. Drought tolerant groundcover species should be used if irrigation can not occur during the summer. See TC4, Biofilters regarding recommended plant species.

Maintenance
Check at least annually and after each extreme storm event. The facility should be cleaned of accumulated debris. The banks of surface ponds should be checked and areas of erosion repaired. Remove nuisance wetland species and take appropriate measures to control mosquitoes. Solids should be removed when 10 to 15% of the storage capacity has been lost.

Limited studies (Dewberry and Davis, 1990; Meiorin, 1991; Florida, 1991; Livingstone, pers. comm.) of the bottom sediments indicate that toxicity limits specified by final disposal regulations are not exceeded. Concentrations observed by Dewberry and Davis (1990) were less than 1/1000 of toxicity limits. If this problem is occurring it suggests that source control BMPs need to be improved.

If algal blooms are excessive consider alum treatment or the use of devices that retain non-rooted vegetation as discussed above.

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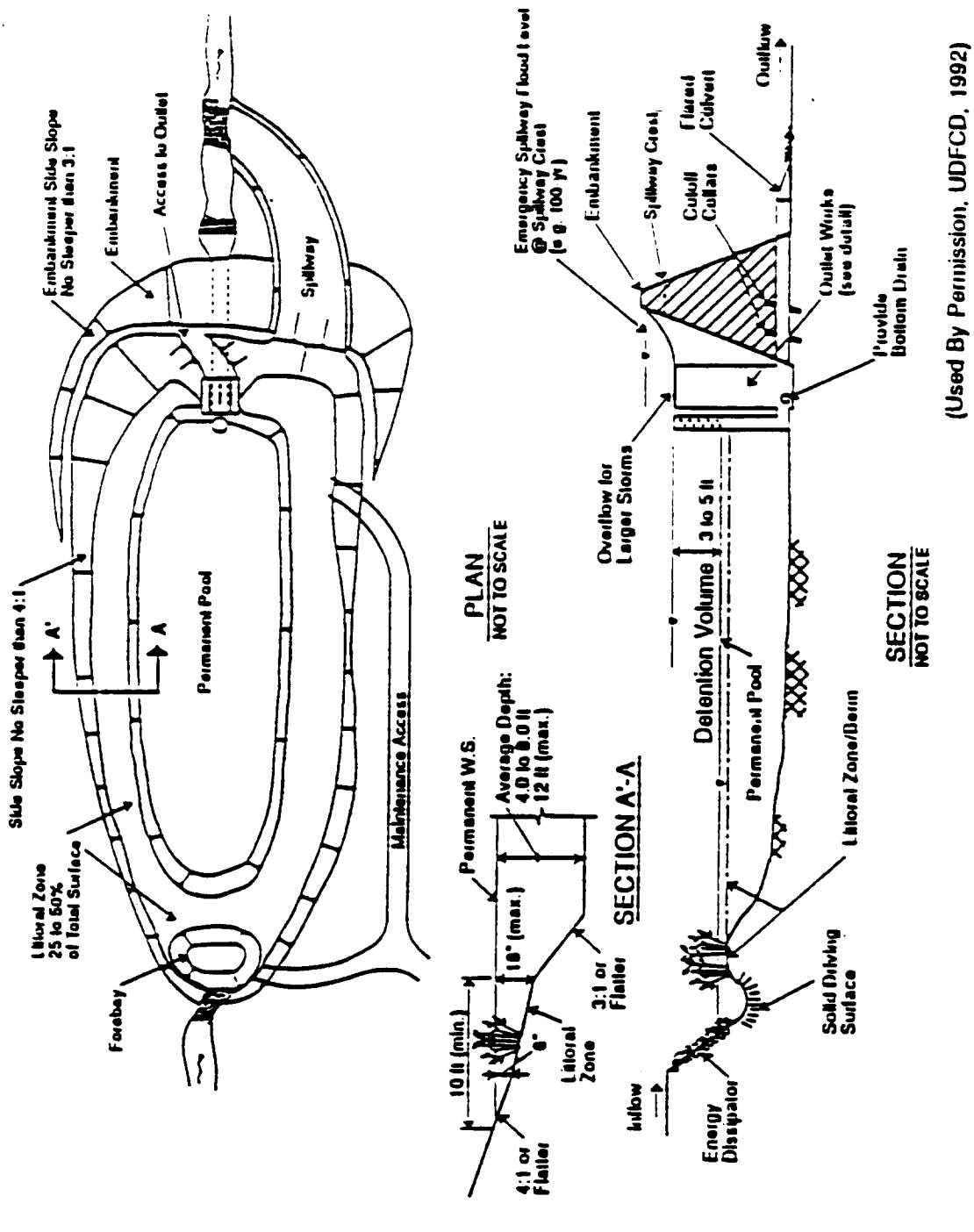
TC2



(Used By Permission, UDFCD, 1992)

FIGURE 2A. PLAN AND SECTION OF A WET POND

TC2

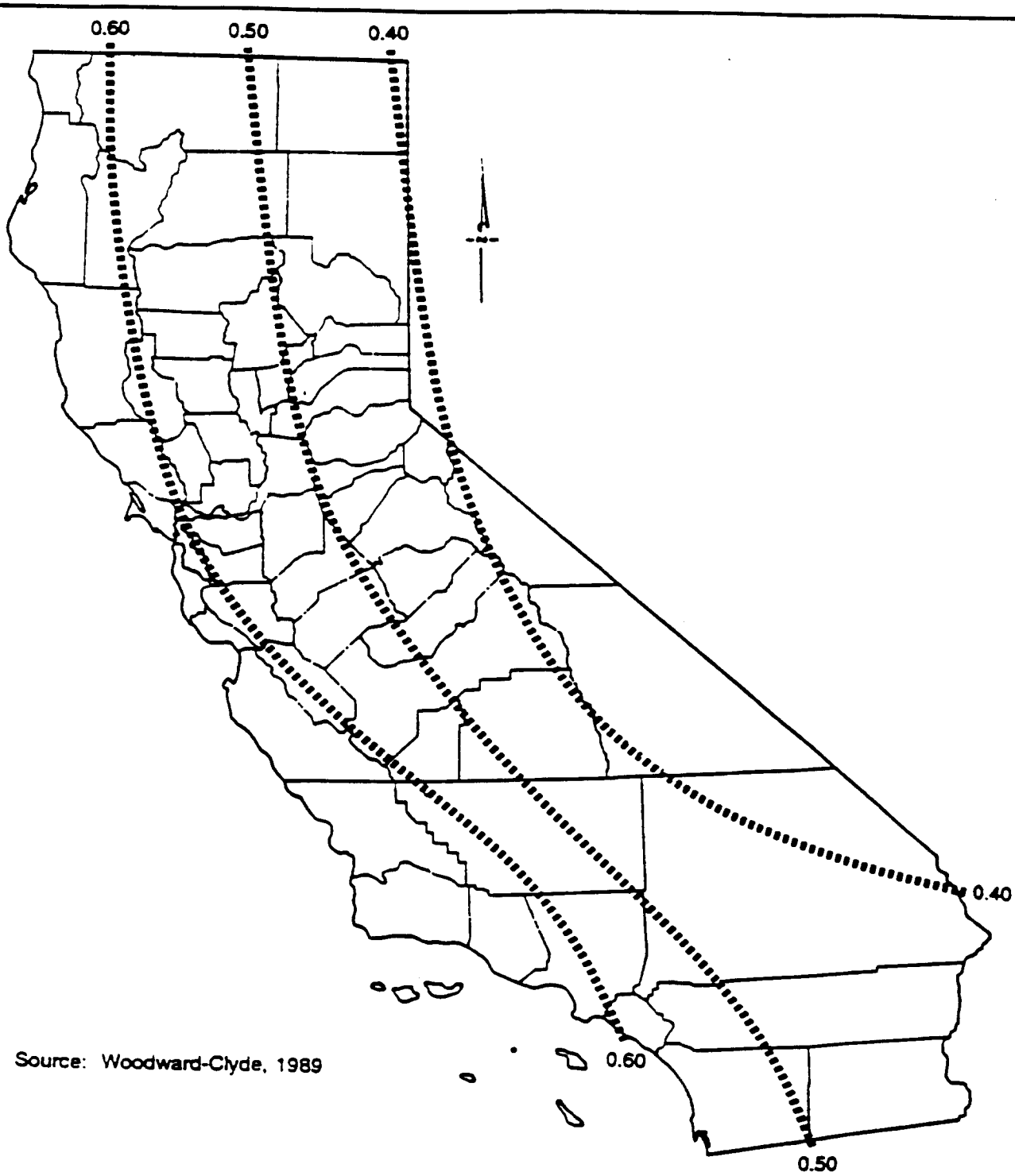
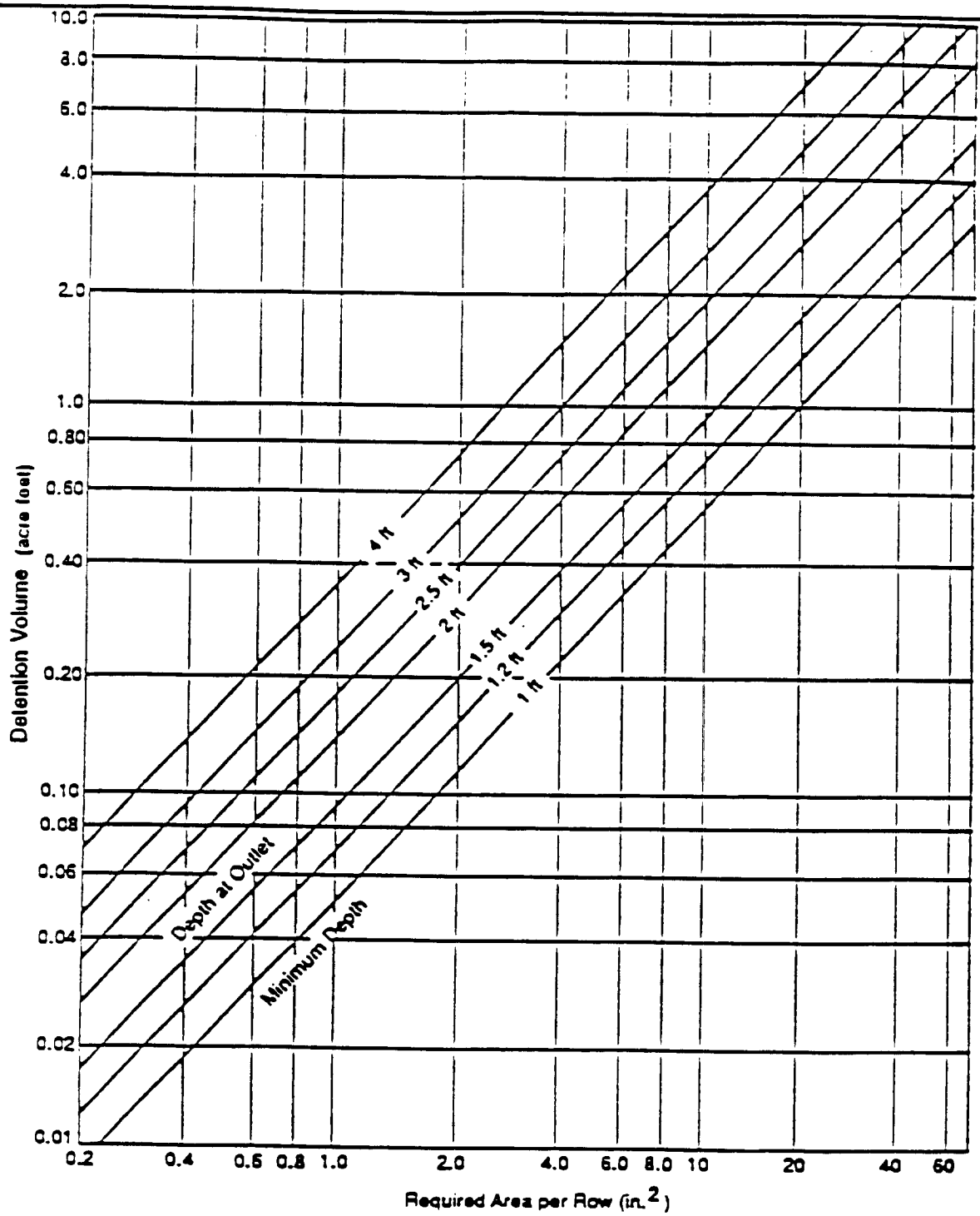


FIGURE 2C. AVERAGE STORM EVENT DEPTH (INCHES)

TC2

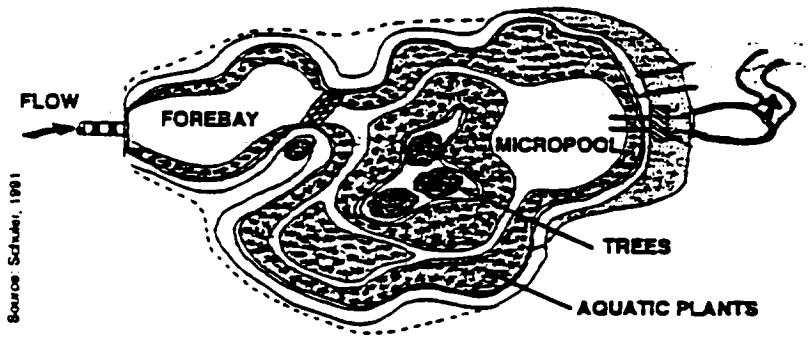


Source: *Douglas County Storm Drainage and Technical Criteria*, 1986. (Used By Permission, UDFCD, 1992)

FIGURE 2E. WATER QUALITY OUTLET SIZING: WET POND WITH A 12-HOUR DRAIN TIME OF THE CAPTURE VOLUME

TC2

BMP: CONSTRUCTED WETLANDS



DESCRIPTION

Constructed wetlands have a significant percentage of the facility covered by wetland vegetation.

EXPERIENCE IN CALIFORNIA

Research facility constructed in Fremont in 1983 by the Association of Bay Area Governments. Several communities (Davis, Orange County) have regional detention ponds that are essentially constructed wetlands.

SELECTION CRITERIA

- Need to achieve high level of particulate and some dissolved contaminant removal.
- Ideal for large, regional tributary areas.
- Multiple benefits of passive recreation and wildlife.

LIMITATIONS

- Concern for mosquitoes.
- Cannot be placed on steep unstable slopes.
- Need base flow to maintain water level.
- Not feasible in densely developed areas.
- Wet season coincident with minimal plant growth.
- Nutrient release may occur during winter.
- Overgrowth can lead to reduced hydraulic capacity.
- Regulatory agencies may limit water quality to constructed wetlands.
- May be regulated under Chapter 15, Title 23, California Code of Regulations regarding waste disposal to lands.

DESIGN AND SIZING CONSIDERATIONS

- Suitable soils for wetland vegetation.
- Surface area equal to at least 1% and preferably 2% of the tributary watershed.
- Forebay.

CONSTRUCTION/INSPECTION CONSIDERATIONS

- Involve qualified wetland ecologist to design and install wetland vegetation.
- Establishing wetland vegetation may be difficult.

MAINTENANCE REQUIREMENTS

- Remove foreign debris and sediment build-up.
- Areas of bank erosion should be repaired.
- Remove nuisance species.
- Control mosquitoes.

Considerations

- Soils
- Area Required
- Slope
- Water Availability
- Aesthetics
- Hydraulic Head
- Environmental Side Effects

Targeted Constituents

- ● Sediment
- ● Nutrients
- ● Heavy Metals
- ● Toxic Materials
- ● Floatable Materials
- ● Oxygen Demanding Substances
- ● Oil & Grease
- ◒ Bacteria & Viruses

● Likely to Have Significant Impact
○ Probable Low or Unknown Impact

Implementation Requirements

- ● Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training

● High ○ Low

TC3

Best Management Practices

Additional Information — Constructed Wetlands

General Information

Although natural wetlands are being used to treat storm water, regulatory agencies do not favor this use, except as a final "polishing" step after treatment by one or more of the treatment control BMPs presented in this chapter. Constructed wetlands, in contrast, are built specifically for treating storm water runoff. They are not wetlands created as mitigation for the loss of natural wetlands. Consequently, there is no intention to replicate the complete array of ecological functions of a wetland (e.g., the presence of wildlife), although it can be done. A constructed wetland is generally one of the more aesthetic than the treatment systems. It is likely that constructed wetlands will be used only in very large industrial sites, but small facilities with concrete retaining walls to conserve space will also likely be effective.

The simplest form of a constructed wetland includes a rectangular basin with a forebay and wetland vegetation area. The deeper forebay (3 to 6 feet) traps floatables and the larger settleable solids, facilitating maintenance as well as protecting the wetland vegetation. Alternatively, a detention pond may be placed before the wetland, to remove settleable solids and to protect the wetland from extreme increases in water elevation. The wetland vegetation is placed in a shallow pool that extends laterally across the basin. Construction of low flow channels through emergent vegetation can cause storm water to short circuit through channels rather than through the wetland vegetation.

Placing rooted wetland species through the majority of the facility adds to the cost, in comparison to a wet pond. However, it is believed by many practitioners that the vegetation improves performance. Placing the vegetation across the facility as illustrated in Figure 3A improves settling of particulates and uptake of dissolved contaminants. As the constructed wetland is shallower than a wet pond, there may be better contact between the water and soil which may be the primary remover of dissolved phosphorus and metals.

The vegetation reduces the effect of wind which can cause significant short-circuiting in a wet pond. Water loss in a wetland may not be greater and possibly less than a wet pond. Evapotranspiration from the plants will be greater in a wetland but evaporation from the water surface may be less because the dense vegetation eliminates the effect of the wind. The net result may be a slower rate of water loss. Conceivably a constructed wetland could be made smaller than a wet pond, given the benefits of the vegetation. But experience is too limited to identify how the size might be altered from what is calculated for a wet pond.

Relying on volunteer plants to cover the vegetated area will delay complete coverage for several years and may allow the invasion of undesirable species or dominance by one or two species such as cattails which tend to flourish in disturbed conditions. Complexity is promoted by varying water depth through the vegetated area rather than keeping the depth uniform. Preferred species to maximize the removal of dissolved metals are Salicornia pacifica (cadmium, copper and lead), Justicia americana (copper), Potamogeton crispus (cadmium), Phragmites communis (zinc), Carex stricta (zinc), and Scirpus lacustris (zinc) (Silverman, 1982).

There is some question as to the incremental benefit of wetland vegetation in California, inasmuch as most of the wet season occurs when the vegetation is dormant. The minimum desirable temperature for cattails, sedges, and bulrushes is 10°C, 14°C, and 16°C, respectively (USEPA, 1988). For most of California, mean temperatures during the winter months are 5 to 10°C; along the south coast they range from 10°C to 15°C. The primary removal mechanisms for dissolved phosphorus and metals are adsorption by the soil and use by non-rooted vegetation. Rooted vegetation obtains nutrients from the soils, not from the water, unless the vegetation is placed in gravel. In contrast non-rooted vegetation removes nutrients and metals from the water (Guntenspergen, et al., 1991). It can be expected that soil adsorption will continue during the winter to some extent. Removal of metals and nutrients by non-rooted vegetation may not occur, or will at least be significantly reduced because of the lack of growth. In contrast, loss will occur from vegetation die-off or dormancy. The net effect over a 12 month period may be that a constructed wetland is no more effective than a wet pond, particularly with regard to the removal of dissolved phosphorus and metals.

TC3

- Freeboard of at least 1 foot.
- With earthen contained facilities, install an antiseep collar on the outlet pipe.
- The soils must be suitable for wetland vegetation. If necessary organic soils (18 to 24 in.) must be imported to the site.
- The soil must have an affinity for phosphorus. Soils with aluminum and iron are best. Soils saturated with phosphorus or a metal specie may cause the concentrations of these contaminants to increase in the overlying water.
- Minimize short-circuiting by placing energy dissipators at the inlet, and by having a high length to width ratio.

Short circuiting must be minimized by using a generally rectangular configuration with a length to width ratio of a least 3:1 and by placing the inlet and outlet at opposite ends. The inlet and outlet can be placed at the same end if baffling (islands) is installed to direct the water to the opposite end before returning to the outlet. If topography or aesthetics requires the wetland to have an irregular shape, the pond area and volume should be increased to compensate for the dead spaces. Energy dissipators and entrance baffles will spread the water laterally across the facility.

- Minimize water loss by infiltration through the wetland bottom.
- Supplemental water may be needed to avoid loss of rooted vegetation during the dry period.

To maintain the wet pool to the maximum extent possible excessive losses by infiltration through the bottom must be avoided. Depending on the soils, this can be accomplished by compaction, incorporating clay into the soil, or an artificial liner. Wetland vegetation species have evolved to handle the stress of seasonal variations in water availability. However, during the dry season there must be sufficient water to avoid complete desiccation of plant roots. Consequently, constructed wetlands are infeasible in areas where there is a lack of either a baseflow or near-surface ground water during the dry season. Supplemental water such as pumped ground water and treated process wastewater may have to be used.

- A wetland ecologist should prepare the planting design and specifications, and oversee the planting.

Constructed wetlands may not need antivortex and trash rack devices on their outlets like a wet pond because of the rooted vegetation. See TC2, Wet Ponds regarding inlet design. Design concepts for outlet devices are discussed in TC5 Extended Detention Ponds. See Josselyn (1982) regarding wetland plant considerations. Establishing wetland vegetation initially may be difficult and require multiple plantings.

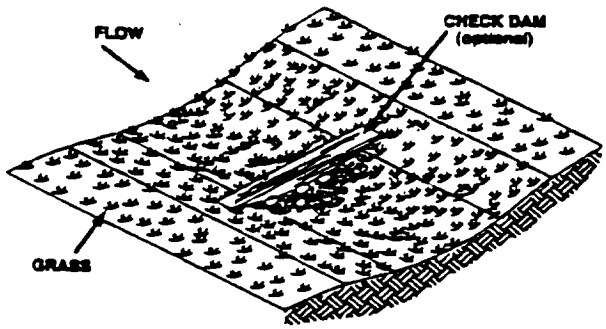
Maintenance

- Check at least annually and after each extreme storm event.
- Remove accumulated foreign debris.
- Repair areas of slope erosion.
- Employ mosquito countermeasures as required by local authorities.
- Clean deposits from the forebay when a loss of capacity is significant, probably every 3 to 5 years depending on the land use (see TC2, Wet Ponds), or when the concentrations of toxicants in the sediments are reaching a level of concern.

There is some question as to whether annual harvesting of rooted vegetation is either practical or effective at reducing seasonal losses of nutrients and prolonging the life of the facility (USEPA, 1988). The benefits of harvesting may depend upon the wetland specie (Suzuki, T. et al., 1991). Placing rooted vegetation in gravel beds rather than soil may make harvesting practical. If harvesting is to be done, it should occur twice per season, in the early summer when nutrient content in the plant material is at its peak, and in the fall before plant dormancy. Given the significant role of the bottom soil in removing metals and phosphorus its replacement may be required, although, probably not more frequently than once every few decades. Cleaning the forebay more frequently is important as noted above.

TC3

BMP: BIOFILTERS



DESCRIPTION

Biofilters are of two types: swale and strip. A swale is a vegetated channel that treats concentrated flow. A strip treats sheet flow and is placed parallel to the contributing surface.

EXPERIENCE IN CALIFORNIA

No biofilters specifically designed to treat storm water have been located. However, instances of "biofilter by happenstance" exist in northern communities (Davis, Sacramento, Turlock, Fresno) where storm water is discharged to a grassed area prior to an inlet or an infiltration area.

SELECTION CRITERIA

- Comparable performance to wet ponds and constructed wetlands.
- Limited to treating a few acres.
- Availability of water during dry season.

LIMITATIONS

- Poor performance has occurred but this appears to be due to poor design.
- May be limited to areas where summer irrigation is feasible.
- Can be difficult to maintain sheet flow in strips.
- Can be difficult to avoid channelization in swales.
- Cannot be placed on steep slope.
- Area required may make infeasible on industrial sites.
- Proper maintenance required to maintain health and density of vegetation.

DESIGN AND SIZING CONSIDERATIONS

- The surface area is defined by Figure 4A.
- The minimum width for a swale is determined by Mannings Equation.
- Minimum length of a strip is 10 feet.
- The longitudinal slope must not exceed 5%.
- Use a flow spreader and energy dissipator at the entrance of a swale.
- Good soils are important to achieve good vegetation cover.

CONSTRUCTION/INSPECTION CONSIDERATIONS

- Make sure soils are suitable for healthy vegetation.
- Level cross-section and even longitudinal slope for swales.
- Achieve sheet flow with strips.

Considerations

Soils
Area Required
Slope
Water Availability
Aesthetics
Hydraulic Head
Environmental Side Effects

Targeted Constituents

- ● Sediment
- ◒ Nutrients
- ◒ Heavy Metals
- ◒ Toxic Materials
- ◒ Floatable Materials
- ◒ Oxygen Demanding Substances
- ◒ Oil & Grease
- ○ Bacteria & Viruses

● Likely to Have Significant Impact
○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training

● High ○ Low

TC4

Best Management Practices

Additional Information — Biofilters

Figure 4A is meant for guidance only and should be used with caution in areas where precipitation varies greatly because of terrain.

The design engineer must determine the width of a swale using Manning's Equation and the 2-year rainfall intensity (California, 1976) appropriate to the site. An "n" of 0.20 is recommended (Metro, 1992). The design engineer must also calculate the peak flow of the 100-year event to determine the depth of a swale. Since a width using an "n" of 0.20 is generally wider than what is required of a grass lined channel, channel stability should not be of concern. It is generally not necessary to have a bypass for the extreme events because the minimum width specification combined with the relatively gentle slope avoids excessive velocities. If erosion at extreme events is of concern, consider the above concepts to minimize erosion.

The design engineer can make the swale wider than determined in the above step, with a corresponding shortening of the swale length to obtain the same surface area. However, there is a practical limitation on how wide the swale can be and still be able to spread the flow across the swale width. Splitting the flow into multiple inlets and/or placing a flow spreader near the storm inlet should be incorporated into the design. A concept that may work is to place a level 2"x 12" timber across the width of the swale perhaps 10 feet from the pipe outlet. Place gravel between the outlet and the timber, to within 2 inches or so of the top of the timber. Place large rock immediately near the outlet to dissipate the flow energy; the rock also may help distribute the flow. The timber will function like a weir. Flow spreaders have seen limited application and their effect on performance has not been evaluated.

The problem of spreading the flow across the width of the swale may limit its use to tributary catchments of only a few acres. The minimum width based on using Manning's Equation results in widths of 3 to 12 feet per acre of impervious tributary surface, depending on the location and longitudinal slope.

A minimum length of 10 feet is recommended for biofilter strips. Length here is defined as the measurement in the direction of flow from the adjoining pavement. Lengths of 20 to 50 feet have been recommended by most practitioners perhaps because of the concern that sheet flow cannot be maintained. Wherever room permits a length greater than 10 feet should be used. The short length is recommended in this handbook because space is at a premium at most existing industrial sites: 10 feet should work satisfactory if good sheet flow is maintained and no obstructions such as curbs are placed along the pavement edge.

The type of strip discussed here is not to be confused with the natural vegetated buffer strip used in residential developments to separate the housing from a stream or wetland. As the later type follows the natural contour flow channelization is more likely and lengths of 75 to 150 feet are recommended.

The length of pavement prior to the strip should not exceed a few hundred feet to avoid channelization of large aggregates of runoff along the pavement before it reaches the pavement edge. To avoid channelization, care must be taken during construction to make sure that the cross-section of the biofilter is level and that its longitudinal slope is even. Channelization will reduce the effective area of the biofilter used for treatment and may erode the grass because of excessive velocities.

Maintenance

The facility should be checked annually for signs of erosion, vegetation loss, and channelization of the flow. The grass should be mowed when it reaches a height of 6 inches. Allowing the grass to grow taller may cause it to thin and become less effective. The clippings should be removed.

TC4

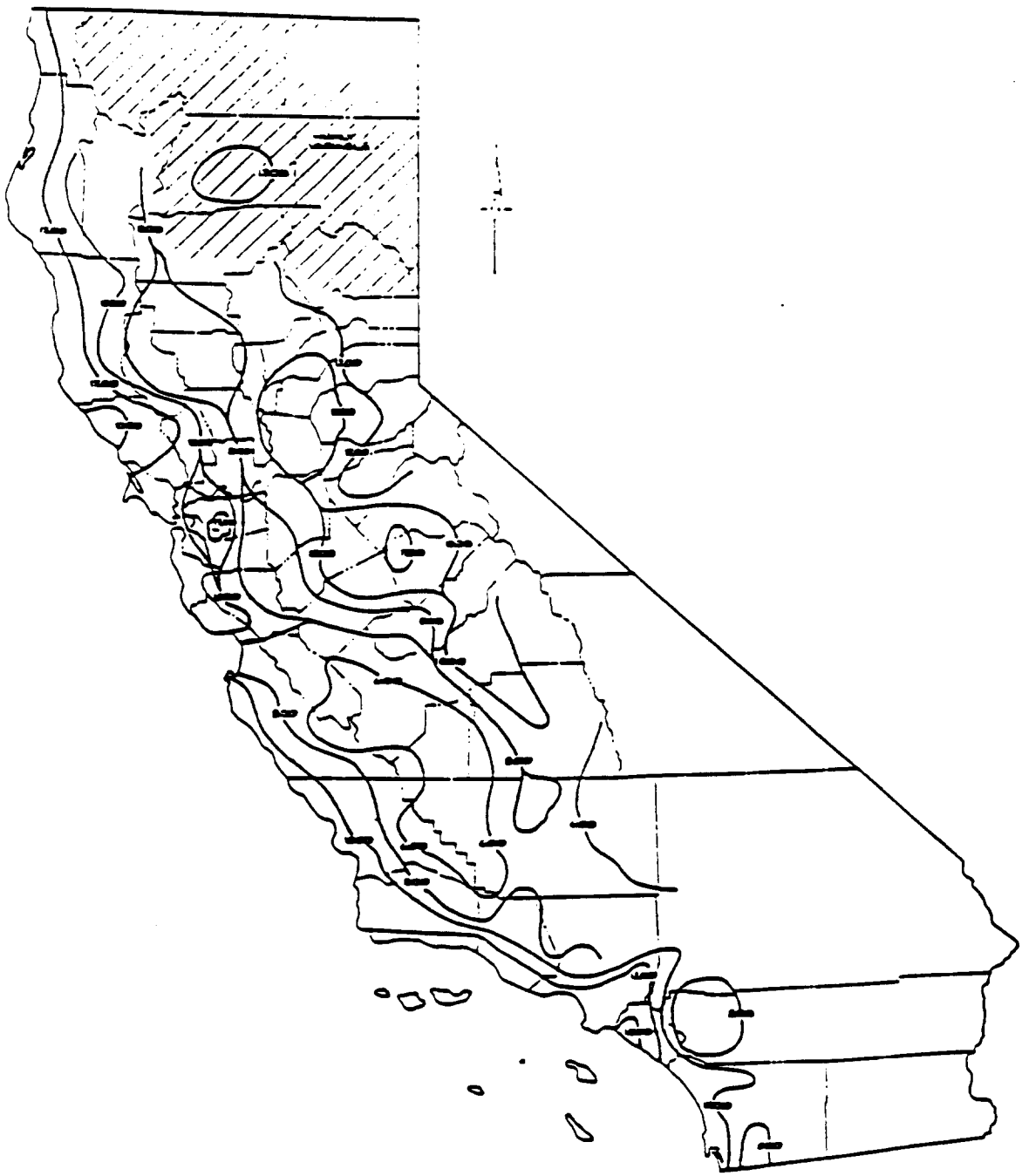


FIGURE 4A. SIZING GUIDELINE FOR BIOFILTERS (SQ. FT./IMPERVIOUS ACRE)

TC4

COLD TOLERANCE (winter color persistance)

High
- Creeping bentgrass
- Kentucky bluegrass
- Red fescue
- Colonial bentgrass
- Highland bentgrass
- Perennial ryegrass
- Tall fescue
- Weeping alkaligrass
- Dichondra
- Zoysiagrass
- Common bermudagrass
- Hybrid bermudagrass
- Kikuyugrass
- Seashore paspalum
- St. Augustinegrass

Low

HEAT TOLERANCE

High
- Zoysiagrass
- Hybrid bermudagrass
- Common bermudagrass
- Seashore paspalum
- St. Augustinegrass
- Kikuyugrass
- Tall fescue
- Dichondra
- Creeping bentgrass
- Kentucky bluegrass
- Highland bentgrass
- Perennial ryegrass
- Colonial bentgrass
- Weeping alkaligrass
- Red fescue

Low

MOWING HEIGHT ADAPTATION

High cut
- Tall fescue
- Red fescue
- Kentucky bluegrass
- Perennial ryegrass
- Weeping alkaligrass
- St. Augustinegrass
- Common bermudagrass
- Dichondra
- Kikuyugrass
- Colonial bentgrass
- Highland bentgrass
- Zoysiagrass
- Seashore paspalum
- Hybrid bermudagrass
- Creeping bentgrass

Low Cut

DROUGHT TOLERANCE

High
- Hybrid bermudagrass
- Zoysiagrass
- Common bermudagrass
- Seashore paspalum
- St. Augustinegrass
- Kikuyugrass
- Tall fescue
- Red fescue
- Kentucky bluegrass
- Perennial ryegrass
- Highland bentgrass
- Creeping bentgrass
- Colonial bentgrass
- Weeping alkaligrass
- Dichondra

Low

MAINTENANCE COST AND EFFORT

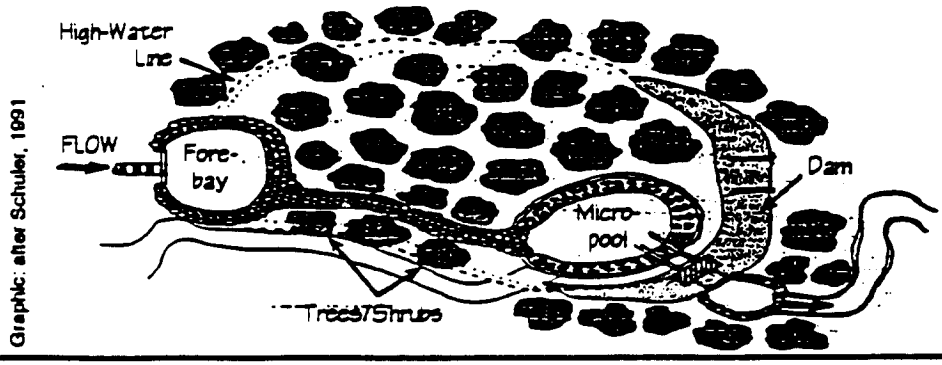
High
- Creeping bentgrass
- Dichondra
- Hybrid bermudagrass
- Kentucky bluegrass
- Colonial bentgrass
- Seashore paspalum
- Perennial ryegrass
- St. Augustinegrass
- Highland bentgrass
- Zoysiagrass
- Tall fescue
- Common bermudagrass
- Kikuyugrass

Low

TC4

FIGURE 4C. ADDITIONAL INFORMATION ON THE SUITABILITY OF TURF GRASS SPECIES

BMP: EXTENDED DETENTION BASINS



Graphic: after Schuler, 1991

DESCRIPTION

Extended detention basins are dry between storms. During a storm the basin fills. A bottom outlet releases the storm water slowly to provide time for sediments to settle.

EXPERIENCE IN CALIFORNIA

There are no known basins in California. Hydraulic detention basins may function like extended detention basins if the former has been sized to control the pre-development 2-year event. More liberal standards do not provide sufficient detention time.

SELECTION CRITERIA

- Objective is to remove only particulate pollutants.
- Use where lack of water prevents the use of wet ponds, wetlands or biofilters.
- Use where wet ponds or wetlands would cause unacceptable mosquito conditions.

LIMITATIONS

- May be less reliable than other treatment control BMPs.
- Inability to vegetate banks and bottom may result in erosion and resuspension.
- Limitation of the orifice diameter may preclude use in small watersheds.
- Requires differential elevation between inlet and outlet.
- Pending their volume and depth basin designs may require approval from State Division of Safety of Dams.

DESIGN AND SIZING CONSIDERATIONS

- Basin volume is sized to capture a particular fraction of the runoff.
- Drawdown time of 24 to 40 hours.
- Shallow basin with large surface area performs better than deep basin with same volume.
- Place energy dissipators at the entrance to minimize bottom erosion and resuspension.
- Vegetate side slopes and bottom to the maximum extent practical.
- If side erosion is particularly severe, consider paving or soil stabilization.
- If floatables are a problem, protect outlet with trash rack or other device.
- Provide bypass or pass through capabilities for 100 year storm.

CONSTRUCTION/INSPECTION CONSIDERATIONS

- Make sure the outlet is installed as designed.

Considerations

- Soils
- **Area Required**
- Slope
- Water Availability
- Aesthetics
- **Hydraulic Head**
- Environmental Side Effects

Targeted Constituents

- ● Sediment
- ◒ Nutrients
- ◒ Heavy Metals
- ◒ Toxic Materials
- ◒ Floatable Materials
- ◒ Oxygen Demanding Substances
- ◒ Oil & Grease
- ○ Bacteria & Viruses

● Likely to Have Significant Impact
○ Probable Low or Unknown Impact

Implementation Requirements

- ● Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training

● High ○ Low

TC5

Best Management Practices

Additional Information — Extended Detention Basins

General

Extended detention ponds and vaults may be particularly appropriate to California where dry weather base flow cannot be used to maintain water levels, as is required for wet ponds and constructed wetlands. These systems are suitable for essentially any size tributary area from an individual commercial development to a large residential area. Surface ponds are less expensive to construct, but underground vaults may be appropriate in commercial developments. Use of concrete retaining walls will reduce the space required by a pond. The basic elements of an extended detention basin are illustrated in Figure 5A. The configuration shown in Figure 5A is most appropriate for large sites.

Extended detention provides a lower removal efficiency than wet ponds and constructed wetlands: the facilities are smaller thereby reducing their effectiveness with particulate pollutants, and they do not have the ability to remove dissolved contaminants. Also, extended detention facilities may be less reliable than constructed wetlands or wet ponds because of the lack of a permanent water pool (See Figure 5A). But if desired, a shallow pool of 1 to 3 feet could be included in the design but this is more of an aesthetic consideration. If irrigation water is available, a thick grass turf on the bottom of the facility may provide some removal of dissolved contaminants, like a vegetated biofilter. See TC4 Biofilters for recommendations on turf grass and groundcover species.

Where irrigation water is not available, there may be concerns about erosion and resuspension of particulate pollutants in surface ponds. This, however, has not been a significant problem in Austin, Texas where sand filters are preceded by dry settling ponds (Hartigan, pers. comm.). However, the design must incorporate several features to minimize the potential for this problem. Drought tolerant vegetation may work but has not been evaluated. Nonvegetative materials may help such as concrete or plastic grids, small riprap, erosion matting, or paving. A paved forebay may facilitate maintenance thereby reducing the material available for resuspension.

The recommended drawdown time of 24 to 40 hours for a full pond is based on very limited laboratory data. A few extended detention ponds have been monitored and generally provide a removal efficiency of 60 to 80% with a drawdown time of about 24 hours. Forty hours is recommended in order to settle out the finer clay particles in California sediment that typically adsorb toxic pollutants.

Design

Determine the volume of the basin using the appropriate figure from Appendix D. The procedure is as follows: (1) select the appropriate figure for your area; (2) determine for the catchment the percentage of impervious area directly connected to the storm drain system; (3) choose a capture goal, and read the required unit volume required for the basin; and (4) multiply this unit volume times the total acreage of the catchment and convert to cubic feet. This volume is also referred to as water quality capture volume shown in Figure 5A. Total impervious acres may be used in lieu of directly connected impervious acres if it is easier to determine the former, although this will result in a larger facility. Although these variations are not equivalent, they are reasonable given the uncertainty of the methodology and expected basin performance.

What should be the capture goal? To achieve an equivalent pollutant capture percentage as a wet pond, 85 to 95 percent of the runoff must be captured and detained. But capture volumes over 85 percent are not cost effective as the capture cases in Appendix D show. Therefore it is recommended that a capture volume of 85 percent be used for determining the detention basin size required. Because of the possibility of resuspension of materials during extreme storms consideration should be given to placing the basin off line, that is, it should have a bypass for the extreme events. Bypassing larger events will also allow the bedload carried by the storm and is necessary for beach replenishment to move downstream.

A drawdown time of 40 hours is recommended in order to settle out the finer clay particles as stated above; however, 24 hours can be used if it can be demonstrated that this rate will remove 80% of the solids. The analysis of runoff using

TC5

Equation (1) defines the orifice area where a single orifice outlet is used to regulate the detention basin outflow. However, a recent survey of extended detention facilities (Galli, pers. comm.) found the drawdown time of small storms that do not fill the facility to be too short to provide effective treatment. The facilities surveyed were designed for a drawdown time of 24 hours. A 40 hour drawdown may provide sufficient time for the smaller storms. But it may be prudent to take additional steps to be certain that the small storms, which represent the majority of pollution, are effectively treated. One approach would be to check the design analysis to determine if the facility takes at least 24 hours to drain when half full. If not, either modify the design to achieve this objective, or install a two orifice outlet. The lower outlet is sized to drain a half-full facility in 24 hours. The second orifice is placed at the mid-water elevation and is sized in combination with the lower orifice to drain the entire facility in 40 hours. Another approach is to install the outlet about one foot above the bottom of the pond (essentially enlarging the micropool area). This lower area will dry up between storms and will capture much of the volume of small storms and improving pollutant removal.

Three alternative outlet structures are suggested (Figure 5B). The concrete block structure is appropriate for large ponds. The riser pipe is suggested for small to large ponds. Placing the outlet control in the berm or in a manhole located downstream of the facility is most suitable for small ponds.

Recommendations regarding the design of a riser pipe are shown in Table 5A for Austin (1988). Table 5A provides guidance on the location of holes. To prevent clogging of this orifice and the bottom orifices of the riser pipe, wrap the bottom three rows of orifices with geotextile fabric and a cone of one to three inch rock. The holes in the riser pipe should not be modified to achieve a 40 hour drawdown time. Rather, the control orifice should be placed downstream. For small facilities, place the control orifice in a manhole between the pond and the filter as shown in Figure 5B. Use a "T-pipe" (Figure 5B) to submerge the orifice.

TABLE 5A PERFORATED OUTLET RISER PIPE ORIFICES (Austin, 1988)

RISER PIPE DIAMETER	VERTICAL SPACING BETWEEN ROWS (center to center)	NUMBER OF PERFORMATIONS	PERFORATION DIAMETER
6 in.	2.5 in.	9 per row	1 in.
8 in.	2.5 in.	12	1 in.
10 in.	2.5 in.	16	1 in.

Clogging of the bottom holes has been observed in riser pipes in the mid-Atlantic states (MWCOG, 1992) suggesting that the diameter of the riser holes should not be less than 3/4 to 1" (MWCOG, 1992) although a minimum diameter of 2" is now being considered (Galli, pers comm.). However, most of the facilities surveyed had risers without the gravel cone and the outlet holes were modified to provide drawdown control. Modifying the holes in the riser to control the outlet rate reduces the diameter of the holes and increases the risk of clogging. However, gravel packing the riser pipe as shown in Figure 5B.2 and 5C.1 will minimize this risk. Submerging the control orifice as shown in Figure 5B.3 will allow the use of a smaller orifice diameter. One orifice with a diameter of 1/2 inch, or 1 inch to be conservative, allows the use of extended detention for very small catchments. Detention facilities in western Washington use this concept and have not experienced clogging problems.

Flow Control Using the Perforated Riser

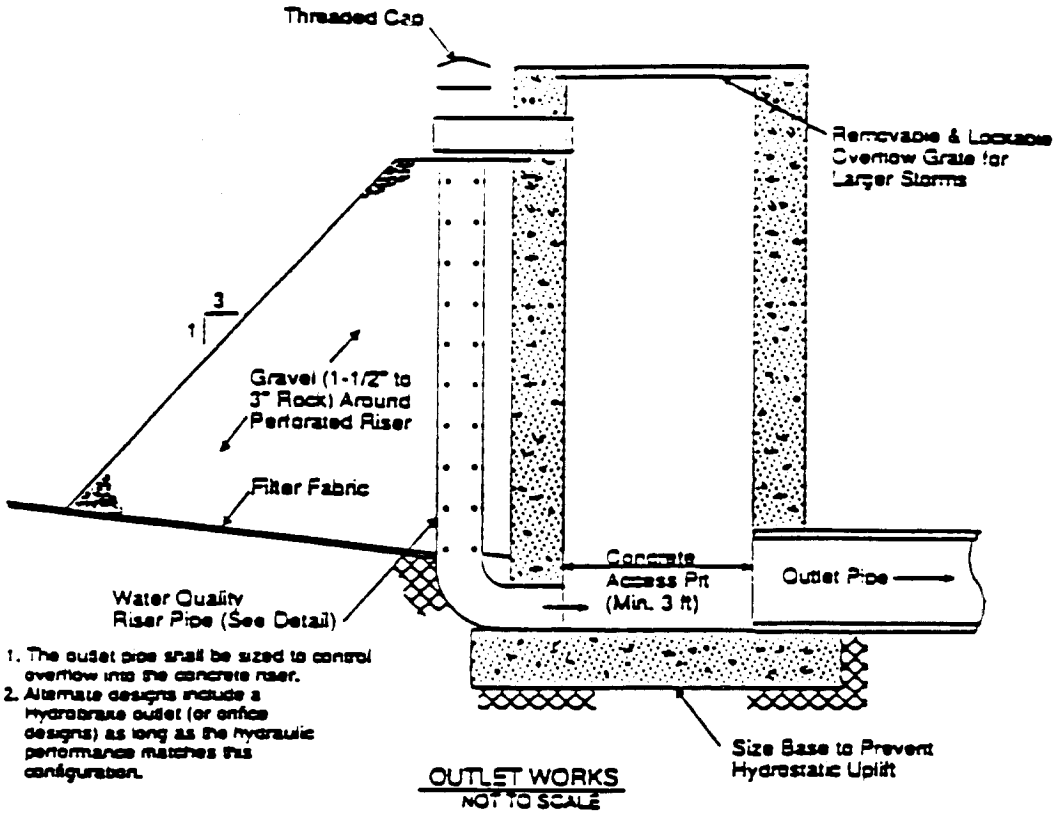
For outlet control using the perforated riser as the outflow control, it is recommended that the procedure developed by the Denver Urban Drainage and Flood Control District be used (UDFCD, 1992) as illustrated in Figures 5C and 5D. Figure 5D uses a valve for C_d of 0.65. This design incorporates flow control for the small storms in the perforated riser but also, provides an overflow outlet for large storms. If properly designed, the facility can be used for both water quality and

TC5

(Used By Permission, UDFCD, 1992)

TC5

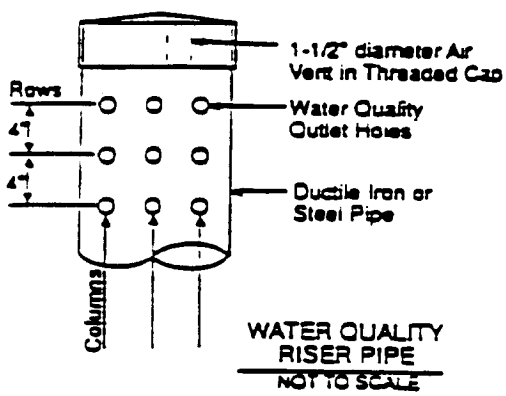
FIGURE 5A. PLAN AND SECTION OF AN EXTENDED DETENTION BASIN



Notes: 1. The outlet pipe shall be sized to control overflow into the concrete riser.
2. Alternate designs include a Hydrobrake outlet (or orifice designs) as long as the hydraulic performance matches this configuration.

OUTLET WORKS
NOT TO SCALE

Notes: 1. Minimum number of holes = 8
2. Minimum hole diameter = 1/8" dia.



WATER QUALITY RISER PIPE
NOT TO SCALE

Maximum Number of Perforated Columns				
Riser Diameter (in.)	Hole Diameter, in.			
	1/4"	1/2"	3/4"	1"
4	8	8	–	–
6	12	12	9	–
8	16	16	12	8
10	20	20	14	10
12	24	24	18	12

Hole Diameter (in.)	Area of Hole (in.2)
1/8	0.013
1/4	0.049
3/8	0.110
1/2	0.196
5/8	0.307
3/4	0.442
7/8	0.601
1	0.785

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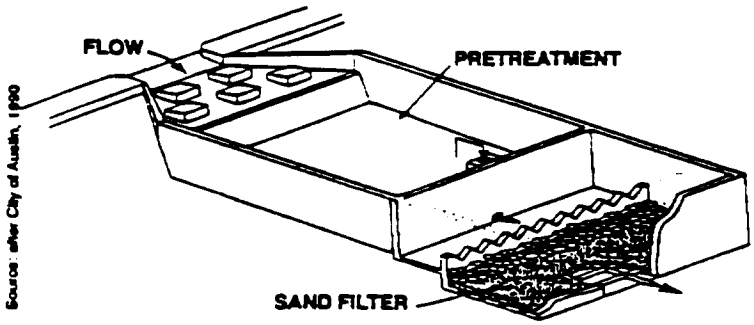
FIGURE 5C. OUTLET CONFIGURATION USING PERFORATED RISER FOR FLOW CONTROL

TC5

BMP: MEDIA FILTRATION



DESCRIPTION

Consists of a settling basin followed by a filter. The most common filter media is sand; some use peat/sand mixture.

EXPERIENCE IN CALIFORNIA

- A tenant at the Port of Long Beach recently installed a sand filter. The City of Los Angeles will soon install several experimental filters.

SELECTION CRITERIA

- Objective is to remove only sediment (particulate pollutants).
- Use where unavailability of water prevents the use of wet ponds, wetlands, or biofilters.
- Can be placed underground.
- Suitable for individual developments and small tributary areas up to about 100 acres.
- May require less space than other treatment control BMPs.

LIMITATIONS

- Filter may require more frequent maintenance than most of the other BMPs.
- Head loss.
- Dissolved pollutants are not captured by sand.
- Severe clogging potential if exposed soil surfaces exist upstream.

DESIGN AND SIZING CONSIDERATIONS

- Settling basin smaller than wet or extended detention basin.
- Spread flow across filter.
- Place filter offline to protect from extreme events.
- Minimize erosion in settling basin.

CONSTRUCTION/INSPECTION CONSIDERATIONS

- Be certain filter sand is clean and the outlet device from the basin to the filter is level.

MAINTENANCE REQUIREMENTS

- Clean filter surface about twice annually; or more often if watershed is excessively erosive.

COST CONSIDERATIONS

- Filtration system may use less space than other systems.
- Smaller media improves performance but increases maintenance costs.

Considerations

- *Soils*
- *Area Required*
- *Slope*
- *Water Availability*
- *Aesthetics*
- *Hydraulic Head*
- *Environmental Side Effects*

Targeted Constituents

- ● *Sediment*
- ◒ *Nutrients*
- ◒ *Heavy Metals*
- ○ *Toxic Materials*
- ● *Floatable Materials*
- ◒ *Oxygen Demanding Substances*
- ◒ *Oil & Grease*
- ◒ *Bacteria & Viruses*

● *Likely to Have Significant Impact*
○ *Probable Low or Unknown Impact*

Implementation Requirements

- ● *Capital Costs*
- ◒ *O&M Costs*
- ◒ *Maintenance*
- ○ *Training*

● *High* ○ *Low*

TC6

Best Management Practices

Additional Information — Media Filtration

Determining the surface area of the filter

The following equation is derived from Austin (1988) for a maximum (full pretreatment basin) filtration time of 24 hours:

$$\text{Filter area } (ft^2) = 3630 S_u AH/K(D+H) \quad (1)$$

where: S_u = unit storage (inches-acre) from Appendix D
A = area in acres draining to facility
H = depth (ft) of the sand filter
D = average water depth (ft) over the filter taken to be one-half the difference between the top of the filter and the maximum water surface elevation
K = filter coefficient recommended as 3.5 (Austin)

Equation (1) is appropriate for the filter media size recommended by the City of Austin, diameter of 0.02 to 0.04 inches. The filter area must be increased if a smaller media is used (see Austin, Texas (1988)).

Configuring a surface sand filter (City of Austin concept)

Additional design criteria for the settling basin (Austin, 1988):

- For the outlet use a perforated riser pipe, as described in TC5, Extended Detention
- Size the outlet orifice for a 24 hour drawdown
- Energy dissipator at the inlet to the settling basin
- Trash rack at outlets to the filter
- Vegetate slopes to the extent possible (see Vegetated Biofilters)
- Access ramp (4:1 or less) for maintenance vehicles
- One foot of freeboard
- Length to width ratio of at least 3:1 and preferably 5:1
- Sediment trap at inlet to reduce resuspension. One concept is shown in Figure 6E.

Additional design criteria for the filter:

- Use a flow spreader (Figure 6A).
- Use either of two alternative sand bed designs (Figure 6F).
- Use clean sand 0.02 to 0.04 inch diameter.
- Some have placed geofabric on sand surface to facilitate maintenance.
- Underdrains (Figure 6A).
  - Schedule 40 PVC.
  - 4 inch diameter.
  - 3/8 inch perforations placed around the pipe, with 6 inch space between each perforation cluster.
  - maximum 10 foot spacing between laterals.
  - minimum grade of 1/8" per foot.

Configuring the linear filter

Take the volume for the pretreatment unit and the filter area identified above and configure into a structure similar to that shown in Figure 6B. The structural design in Figure 6B assumes traffic loads over the filter. The structure can be less robust if it is located along the edge of the pavement, away from traffic. Other recommendations (Shaver, 1991):

TC6

Additional Information — Media Filtration

Metropolitan Washington Council of Governments (MWCOG), March, 1992, "A Current Assessment of Urban Best Management Practices: Techniques for Reducing Nonpoint Source Pollution in the Coastal Zone".

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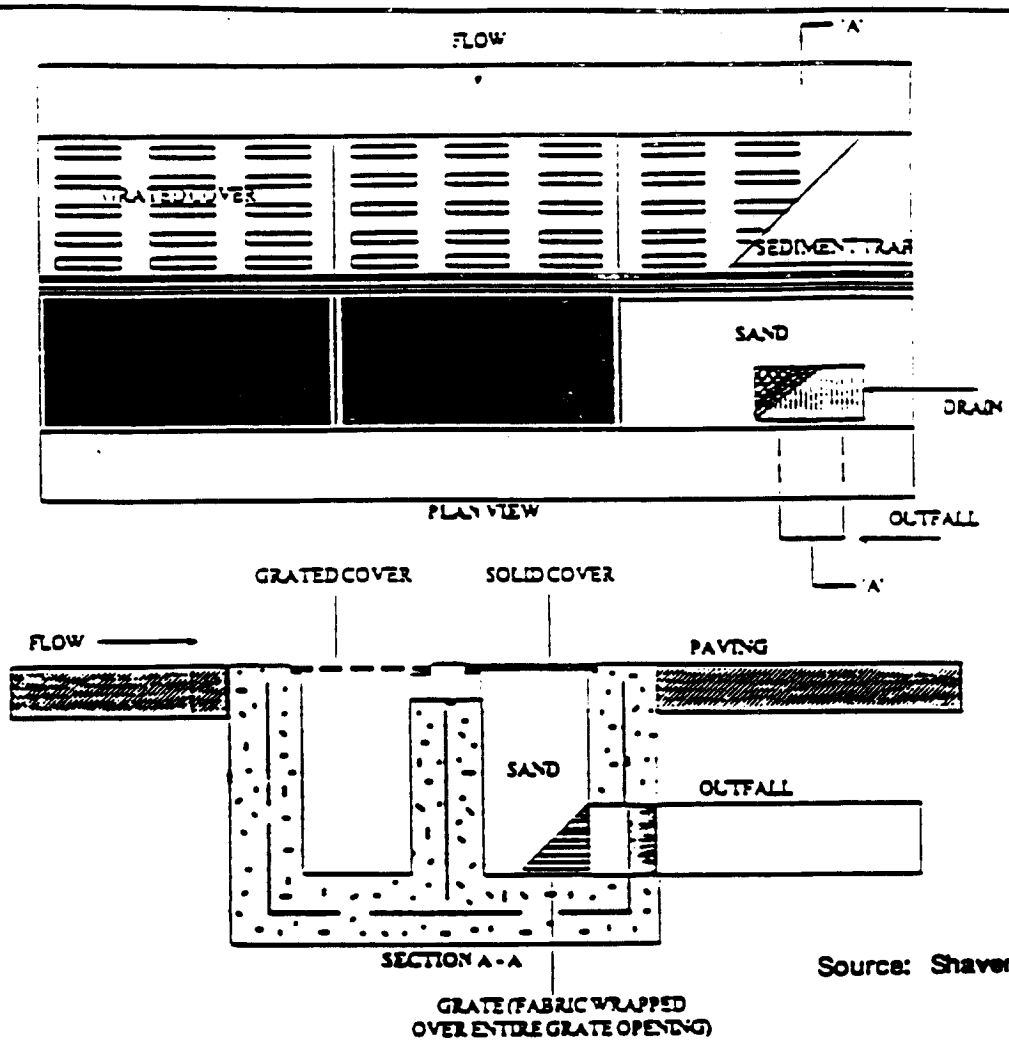
Stewart, W., 1989, "Evaluation and Full-Scale Testing of a Compost Biofilter for Stormwater Runoff Treatment", presented at the Annual Conference of the Pacific Northwest Pollution Control Association.

Tomasak, M.D., G.E. Johnson, and P.J. Mulloy, 1987, "Operational Problems with a Soil Filtration System for Treating Stormwater", Minnesota Pollution Control Agency.

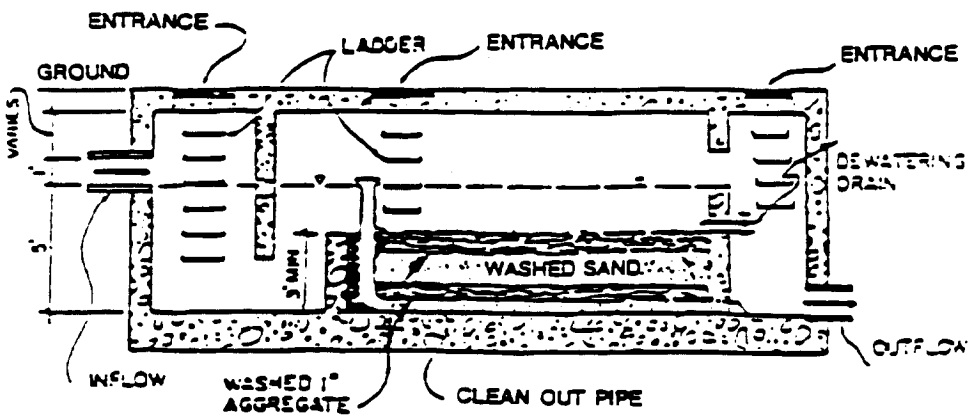
Truong, H. V., 1989, "The Sand Filter Quality Structure", District of Columbia Government.

TC6



Source: Shaver (1991

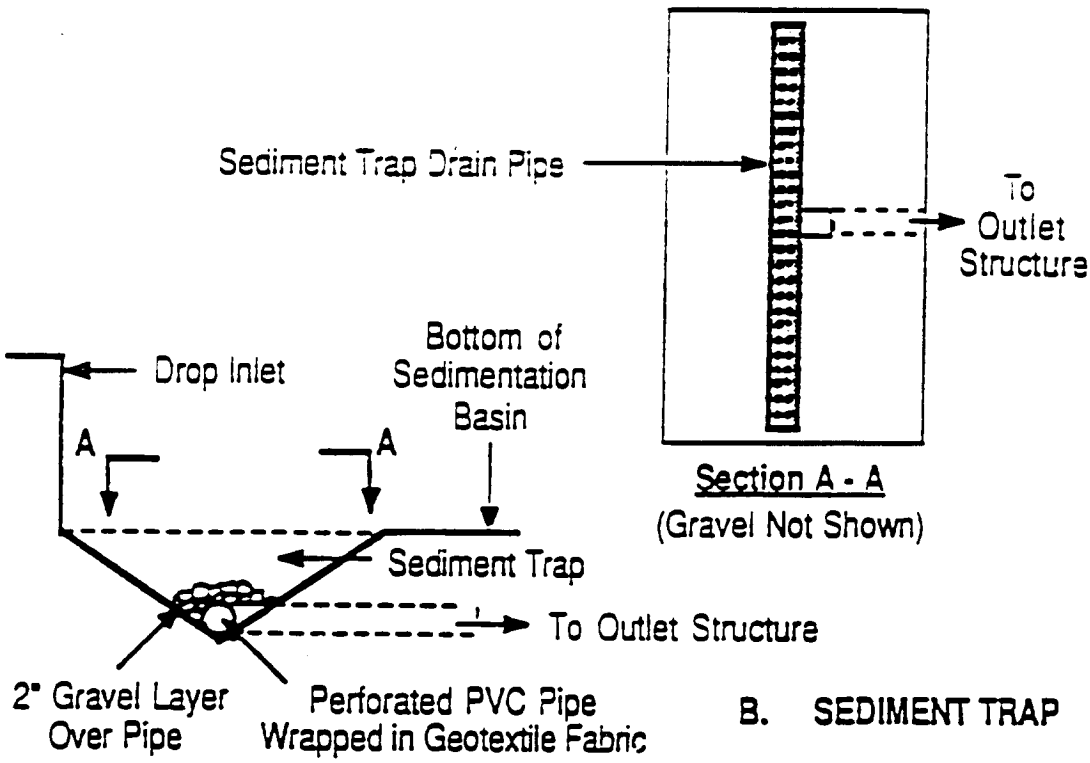
FIGURE 6B. LINEAL SAND FILTER



Source: District of Columbia

FIGURE 6C. VAULT SAND FILTER

TC6

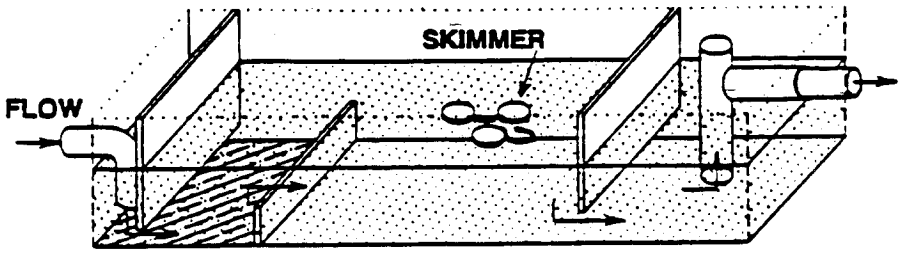


Source: City of Austin

FIGURE 6E. EXAMPLE RISER PIPE AND SEDIMENT TRAP DETAILS

TC6

BMP: OIL/WATER SEPARATORS AND WATER QUALITY INLETS



DESCRIPTION

Oil/water separators are designed to remove one specific group of contaminants: petroleum compounds and grease. However, separators will also remove floatable debris and settleable solids. Two general types of oil/water separators are used: conventional gravity separator and the coalescing plate interceptor (CPI).

EXPERIENCE IN CALIFORNIA

Oil/water separators are in use throughout California at industrial sites. Oil/water separators are used at all bulk petroleum storage and refinery facilities. A few jurisdictions require new commercial developments to install separators under certain situations that are environmentally sensitive.

SELECTION CRITERIA

Applicable to situations where the concentration of oil and grease related compounds will be abnormally high and source control cannot provide effective control. The general types of businesses where this situation is likely are truck, car, and equipment maintenance and washing businesses, as well as a business that performs maintenance on its own equipment and vehicles. Public facilities where separators may be required include marine ports, airfields, fleet vehicle maintenance and washing, facilities, and mass transit park-and-ride lots. Conventional separators are capable of removing oil droplets with diameters equal to or greater than 150 microns. A CPI separator should be used if smaller droplets must be removed.

LIMITATIONS

- Little data on oil characteristics in storm water leads to considerable uncertainty about performance.
- Air quality permit (conditional authorization) permit-by-rule from DTSC may be required.

DESIGN AND SIZING CONSIDERATIONS

- Sizing related to anticipated influent oil concentration, water temperature and velocity, and the effluent goal. To maintain reasonable separator size, it should be designed to bypass flows in excess of first flush.

CONSTRUCTION/INSPECTION CONSIDERATIONS

- None identified.

MAINTENANCE REQUIREMENTS

- Clean frequently of accumulated oil, grease, and floating debris.

COST CONSIDERATIONS

- Coalescing plate material is costly but requires less space than the conventional separator.

Considerations

- Soils
- **Area Required**
- Slope
- Water Availability
- Aesthetics
- Hydraulic Head
- Environmental Side Effects

Targeted Constituents

- ◒ Sediment
- ◒ Nutrients
- ◒ Heavy Metals
- ◒ Toxic Materials
- ● Floatable Materials
- ◒ Oxygen Demanding Substances
- ● Oil & Grease
- ○ Bacteria & Viruses

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training

● High ○ Low

TC7

Best Management Practices

A water temperature must be assumed to select the appropriate values for water density and viscosity from Table 7A. The engineer should use the expected temperature of the storm water during the December-January period. There are no data on the density of petroleum products in urban storm water but it can be expected to lie between 0.85 and 0.95. To select the droplet diameter the engineer must identify an efficiency goal based on an understanding of the distribution of droplet sizes in storm water. However, there is no information on the size distribution of oil droplets in urban storm water. Figure 7C is a size and volume distribution for storm water from a petroleum products storage facility (Branion, undated). The engineer must also select a design influent concentration, which carries considerable uncertainty because it will vary widely within and between storms.

To illustrate Equation 1: if the effluent goal is 10 mg/l and the design influent concentration is 50 mg/l, a removal efficiency of 80% is required. From Figure 7C: this efficiency can be achieved by removing all droplets with diameters 90 microns or larger. Using a water temperature of 10°C gives a water density of 0.998. Using an oil density of 0.898, the rise rate for a 90 micron droplet is 0.0011 feet per second.

It is generally believed that conventional separators are not effective at removing droplets smaller than of 150 microns (API, 1990). Theoretically, a conventional separator can be sized to remove a smaller droplet but the facility may be so large as to make the CPI separator more cost-effective.

Sizing conventional separator (modified from API, 1990).

$$D = (Q/2V)^{0.5} \qquad (2)$$

where: D = depth, which should be between 3 and 8 feet
Q = design flow rate (cfs)
V = allowable horizontal velocity which is equal to 15 times the design oil rise rate but not greater than 0.05 feet per second

If the depth exceeds 8 feet, design parallel units dividing the design flow rate by the number of units needed to reach the maximum recommended depth of 8 feet. Equation (2) is simplified from equations in API (1990) based on a recommended width to depth ratio of 2. The constant in Equation (2) can be changed accordingly if a different ratio is assumed. Some engineers may wish to increase the facility size to account for flow turbulence. See API (1990) for the design procedure.

Then:

- Calculate length, $L = VD/V_p$
- Compute width, $W = Q/(VD)$. This should be 2 to 3 times the depth, but not to exceed 20 feet
- Baffle height to depth ratio of 0.85 for top baffles and 0.15 for bottom baffles
- Locate the distribution baffle at 0.10L from the entrance
- Add one foot for freeboard
- Install a bypass for flows in excess of the design flow

Determining the design flow, Q, requires identification of the design storm. The separator is expected to operate effectively at all flow rates equal to or less than the peak runoff rate of the design storm. The design storm need not be an extreme event, as is typically used in the sizing of flood control facilities. If sized to handle a storm frequency between the 3-month to 1-year event, the facility will effectively treat the vast majority of storm water that occurs over time. All events equal to or less than the 6-month event represents about 90% of the precipitation over time; designing for a 2-year

$$P_V = \frac{(NS + LCosineH)(WLSineH)}{12} \quad (4)$$

- Add a foot beneath the plates for sediment storage.
- Add 6" to 12" above the plates for water clearance so that the oil accumulates above the plates.
- Add one foot for freeboard.
- Add a forebay for floatables and distribution of flow if more than one plate unit is needed.
- Add after bay for collection of the effluent from the plate pack area.
- For larger units include device to remove and store oil from the water surface.

Horizontal plates require the least plate volume to achieve a particular removal efficiency. However, settleable solids will accumulate on the plates complicating maintenance procedures. The plates may be damaged by the weight when removed for cleaning. The plates should be placed at an angle of 45° to 60° so that settleable solids slide to the facility bottom. Experience shows that even with slanted plates some solids will "stick" to the plates because of the oil and grease. Placing the plates closer together reduces the plate volume. However, if debris is expected such as twigs, plastics, and paper, select a larger plate separation distance. Or install ahead of the plates a trash rack and/or screens with a diameter somewhat smaller than the plate spacing.

Recognizing that an oil/water separator also removes settleable solids, it can also be considered a wet vault (TC2). The engineer can use Figure 2B (See TC2) to estimate the efficiency of both the conventional and CPI separators. As Figure 2B does not include the effect of plate technology, a CPI separator should perform considerably better than indicated in Figure 2B for the same V_b/V_r ratio.

See API (1990) for further design concepts for both the conventional and CPI separators.

Maintenance

Check monthly during the wet season and clean several times a year. Always clean in October before the start of the wet season. Properly dispose the oil.

REFERENCES

American Petroleum Institute (API), 1990, "Design and Operation of Oil-Water Separators", Publication 421.

Aquatrend, undated, "Design Manual: Innova Sep Particle Separation System", Shawnee Mission, Kansas.

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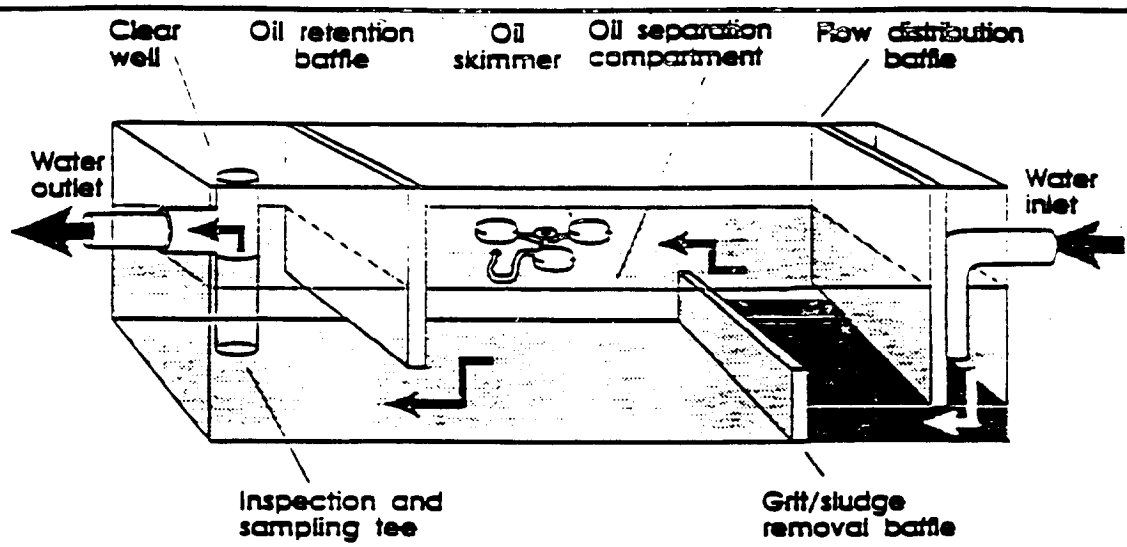
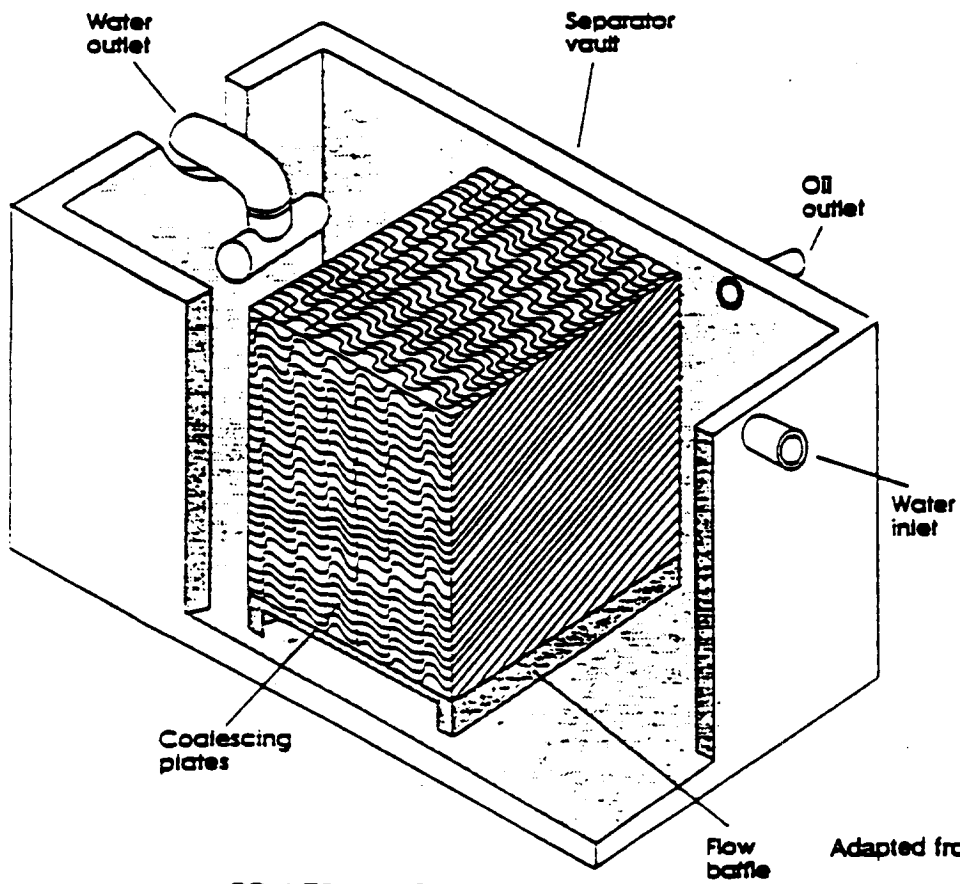
TC7



CONVENTIONAL SEPARATOR

Adapted from Romano, 1990

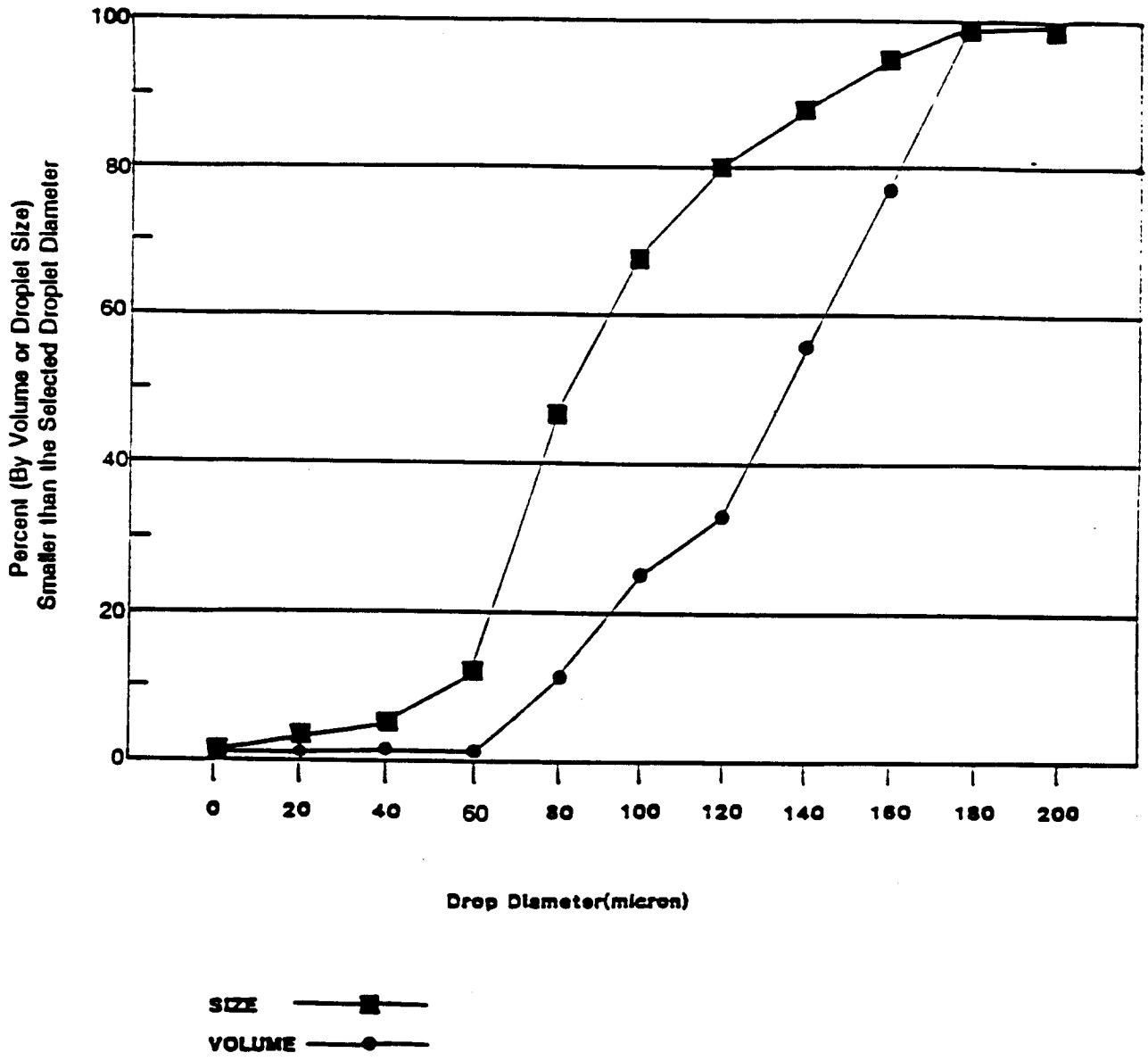


Adapted from Romano, 1990

COALESCING PLATE SEPARATOR

TC7

FIGURE 7A. CONVENTIONAL AND COALESCING PLATE SEPARATORS



Source: Branion (undated)

FIGURE 7C. SIZE AND VOLUME DISTRIBUTION

TC7

Appendix I

Developer Information For Project Construction

I.1 BMP SELECTION PROCESS FOR PROJECT CONSTRUCTION

In planning a construction project, the developer/contractor must answer three key questions with respect to storm water quality control: (1) what kind of water quality controls are needed?; (2) where should the controls be implemented?; and (3) how much control is enough? In order to answer these questions, the developer/contractor should use a documentable, defensible process to identify potential water quality problems, develop design objectives, formulate and evaluate alternatives, select the most appropriate alternatives, and design the plan.

I.2 DEVELOP GOALS AND OBJECTIVES

Site-specific conditions of development construction projects determine which BMPs are most applicable for a site. The BMP plan for a site should fulfill the following goals and objectives:

- be appropriate for the given site constraints;
- ease of implementation and maintenance;
- have a net beneficial impact on the environment;
- provide effective pollutant source control or removal capability;
- meet regulatory requirements;
- maximize, to the extent practicable, the percentage of permeable surfaces; and
- be economically feasible.

I.3 BMP SELECTION CRITERIA

In order to fulfill the above goals and objectives, BMPs should be selected by using appropriate selection criteria that serve to identify the capabilities and limitations of each BMP. The criteria to be used in screening and selecting BMPs during the planning stage are:

- site factors (e.g., slope, high water table, soils, etc.);
- pollutant avoidance (source control) or removal capability;
- cost of implementation; and
- environmental compatibility.

These criteria may be given equal weight during the BMP selection process, or they may be weighted differentially, depending on the relative importance of each factor for the particular project.

I.4 NOMINATE AND EVALUATE ALTERNATIVES

A number of applicable BMPs have been identified in Section H.10 of this document for construction projects. The BMPs were nominated from the *California Storm Water Best Management Practices Handbook* (1993). Other BMPs from other manuals and sources were also considered.

I.5 SELECT BEST ALTERNATIVES

Based on the list of recommended BMPs for construction projects provided in this program, the developer/contractor should use the selection criteria described herein to select the best alternatives for the project conditions, characteristics, and concerns. This may be done numerically, by weighting the selection criteria, rating each BMP against each criteria, and summing up a weighted rating for each BMP, which then becomes a relative ranking. Or the selection process may be done in a more subjective, non-numerical way using experience and professional judgment to select the best alternative BMPs. Either way, the developer/contractor should document the selection process and provide support for the selected system of controls.

I.6 DESIGN, IMPLEMENT, AND MAINTAIN THE BMPS

After the appropriate BMPs are selected for a given project, the developer/contractor should document those selected on the standard checklist and show the selected BMPs on the plans. It is important that the control measures be properly installed and maintained. Improper installation and maintenance are the most common reasons for storm water controls to not function as designed. Therefore, the designer must provide sufficient information in the project plans and specifications for proper BMP installation, and to provide adequate guidance on BMP proper maintenance so that the maintenance procedures may be incorporated into the local storm water pollution prevention plan (Local SWPPP), Wet Weather Erosion Control Plan (WWECP), or state Storm Water Pollution Prevention Plan (state SWPPP) in accordance with the California General Permit for Storm Water Discharges Associated with Construction Activity (Construction General Permit).

I.7 MINIMUM REQUIREMENTS FOR CONSTRUCTION PROJECTS

All construction projects covered under the City's storm water quality management program shall be required to implement BMPs as necessary to reduce pollutants to adhere to the following minimum requirements:

Minimum Water Quality Protection Requirements for Development Construction Projects Subject to Storm Water Construction Controls

Category	Minimum Requirements	BMPs[1]
1. Erosion and Sediment Control	Sediments from areas disturbed by construction shall be retained on site, using structural drainage controls to the maximum extent practicable, and stockpiles of soil shall be properly contained to minimize sediment transport from the site to streets, drainage facilities or adjacent properties via runoff, vehicle tracking, or wind.	Sediment Controls
2. Construction Materials Control	Construction-related materials, wastes, spills or residues shall be retained on site to minimize transport from the site to streets, drainage facilities or adjoining properties by wind or runoff. Runoff from equipment and vehicle washing shall be contained at construction sites unless treated to remove sediments and pollutants.	Site Management; Material and Waste Management

[1] BMPs that may be used to meet the minimum requirements are described in Section I.10.

I.8 PRIORITY PROJECTS

Prior to receiving a building or grading permit, applicants for Construction Priority Projects must prepare a Local SWPPP covering construction materials and waste management control, and must certify that they will implement the Local SWPPP year-round. The Local SWPPP shall include:

- the name, location, period of construction, and a brief description of the project;
- contact information for the owner and contractor;
- name, location, and description of any environmentally sensitive areas located in or adjacent to the project;
- a list of major construction materials, wastes, and activities at the project site;
- a list of BMPs to be used to control pollutant discharges from major construction materials, wastes, and activities;
- a site plan (construction plans may be used) indicating the location of BMPs where appropriate; and
- A developer's certification statement that all required and selected BMPs will be effectively implemented.

Applicants for Construction Priority Projects must also prepare and implement a WWECP if the project will leave soil disturbed during the rainy season, defined as November 1 through

April 15. The WWECP must be prepared, for projects that have already broken ground, not later than 30 days prior to the beginning of each rainy season (i.e., by October 1) during which soil will be disturbed, and implemented throughout the entire rainy season. For projects that will begin construction during the rainy season, the WWECP must be available 30 days before construction commences. The WWECP shall include the following information:

- the name, location, period of construction, and a brief description of the project;
- contact information for the owner and contractor;
- a site map (construction plans may be used) showing the location of erosion control and sediment control BMPs that will be implemented for the rainy season; and
- a certification statement that all selected BMPs will be effectively implemented.

A certification statement of compliance with the minimum requirements must be submitted prior to issuance of a building or grading permit. A copy of the Local SWPPP must be kept on the project site at all times after the start of construction. A copy of the WWECP must be kept on the project site at all times after 30 days prior to the start of the rainy season through the end of the rainy season.

Guidance and sample forms for preparation of Local SWPPPs and WWECPs are included in Attachment I1.

I.9 PROJECTS SUBJECT TO THE GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY

A project is subject to the Construction General Permit if it disturbs 5 acres or more of soil, or the project results in the disturbance of less than 5 acres but is part of a larger common plan of development or sale that exceeds 5 acres. Construction sites that result in soil disturbance of 5 acres or greater will require the preparation and implementation of a storm water pollution prevention plan meeting the requirements of the Construction General Permit. A storm water pollution prevention plan prepared in compliance with the Construction General Permit is referred to as a "state SWPPP." A properly prepared state SWPPP may satisfy the requirements of a Local SWPPP and WWECP required under the City's storm water quality management program.

Before issuing building or grading permits, the City will require applicants to certify that a Notice of Intent (NOI) has been filed with the State Water Resources Control Board (SWRCB), and that a state SWPPP has been prepared for projects subject to the Construction General Permit. The City may require that the SWRCB's letter of filing confirmation be

attached to the certification form prior to issuance of building or grading permits. An example certification form is included as Attachment I2.

I.10 CONSTRUCTION SITE INSPECTION

Development construction projects are routinely checked by County/City inspectors to verify that the construction work is being done in accordance with the project plans, building and grading permits, and applicable municipal codes. BMPs for construction sites are usually temporary measures that require frequent maintenance to maintain their effectiveness and may require relocation and re-installation, particularly as project grading progresses. Therefore, regular inspections are required, particularly during the rainy season. Developers and/or contractors of projects subject to the Construction General Permit are required to perform self-inspections. In addition, self-inspections will be required for all Construction Priority Projects.

At a minimum, a developer/contractor self-inspection checklist, noting date, time, conditions and inspection date, must be kept on-site and made available for inspection, if requested. Self-inspections must be performed according to the following schedule:

- Before every rainfall event that is predicted to produce observable runoff and after every rainfall event that produces observable runoff, and
- At 24-hour intervals during extended rainfall events (except weekends or holidays when there is no ongoing site activity on those days).

More frequent inspections would be effective to ensure that BMPs are maintained in good condition. Suggested frequencies include monthly during the dry season and weekly during the wet season.

There are two primary purposes of the self-inspections conducted by developers and contractors:

- To ensure that BMPs are properly implemented and functioning effectively, and
- To identify maintenance (e.g., sediment removal) and repair needs.

An example form that may be used for developer/contractor self-inspection is included as Attachment I3. When requested, self-inspection forms will be made available to County/City inspectors for review.

I.11 BMPs FOR CONSIDERATION

The table on the next two pages provides guidance for selecting BMPs for different types of construction activities. The columns on the table list the types of construction activities that pose a risk of discharging pollutants to the storm water drainage system. Each "x" within a column indicates that the BMP should be considered for the associated construction activity. The numerical designation for each BMP corresponds to the BMP number used in the *California Storm Water Best Management Practices Handbook* (1993). The BMP Fact Sheets for each of these BMPs listed are provided in Attachment I4.

Table I-1. Storm Water Pollution Controls for Construction Activities

Storm Water Best Management Practices	BMP No. (1)	Categories of Activities: Site Preparation/ Earthmoving		Construction of Underground Structures				Construction of Above Ground Structures				Construction of Roadways, Walkways & Parking Lots			Waterways					Planting & Landscaping			
		Clearing & Grubbing	Earthwork	Foundations	Conduits (Open Cut)	Drilling	Tunnels	Wood Frame	Structural Steel	Masonry & Concrete	Roofing & Coating	Concrete	Asphalt	Base & Subgrade	Channel Improvement	Water & Sediment Impoundment	Over Crossing	Under Crossing	Waterfront Construction	Irrigation Facilities	Seeding & Sodding	Mulching	Planting
General Site Management																							
Construction Practices																							
Dewatering Operations	CA01		X	X	X	X	X								X	X	X	X	X				
Paving Operations	CA02											X	X	X	X		X	X					
Structure Construction & Painting	CA03			X			X	X	X	X	X						X	X	X				
Vehicle & Equipment Management																							
Vehicle & Equipment Cleaning	CA30	X	X	X	X	X	X					X	X	X					X				
Vehicle & Equipment Fueling	CA31	X	X	X	X	X	X					X	X	X					X				
Vehicle & Equipment Maintenance	CA32	X	X	X	X	X	X					X	X	X					X				
Contractor Training																							
Employee/Subcontractor Training	CA40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Construction Materials & Waste Management (2)																							
Material Management																							
Material Delivery & Storage	CA10			X	X			X	X	X	X	X	X	X	X		X	X	X		X	X	X
Material Use	CA11			X	X			X	X	X	X	X	X	X	X		X	X	X		X	X	X
Spill Prevention & Control	CA12									X	X		X										
Waste Management																							
Solid Waste Management	CA20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hazardous Waste Management	CA21									X	X	X	X										
Contaminated Soil Management	CA22	X	X	X	X	X	X								X	X							
Concrete Waste Management	CA23			X	X		X			X		X			X		X	X		X			
Sanitary/Septic Waste Management	CA24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

(1) Numbers refer to California Best Management Practices Handbook (See Appendix I)
(2) Some practices are also covered under other regulatory programs. See BMP fact sheets in Appendix I for details.

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Table I-1. Storm Water Pollution Controls for Construction Activities

Storm Water Best Management Practices	BMP No. (1)	Categories of Activities																					
		Site Preparation/ Earthmoving		Construction of Underground Structures				Construction of Above Ground Structures				Construction of Roadways, Walkways & Parking Lots			Waterways					Planting & Landscaping			
		Clearing & Grubbing	Earthwork	Foundations	Conduits (Open Cut)	Drilling	Tunnels	Wood Frame	Structural Steel	Masonry & Concrete	Roofing & Coating	Concrete	Asphalt	Base & Subgrade	Channel Improvement	Water & Sediment Impoundment	Over Crossing	Under Crossing	Waterfront Construction	Irrigation Facilities	Seeding & Sodding	Mulching	Planting
Erosion Control																							
Site Planning Considerations																							
Scheduling	ESC01	X	X		X							X	X	X	X	X	X	X	X	X	X	X	X
Preservation of Existing Vegetation	ESC02	X	X		X		X					X	X	X	X	X	X	X	X	X		X	
Vegetation Stabilization																							
Temporary Seeding & Planting	ESC10	X	X												X	X	X		X				
Temporary Mulching	ESC11	X	X												X	X	X		X				
Physical Stabilization																							
Geotextiles & Mats	ESC20	X	X												X	X	X	X	X				
Dust Control	ESC21	X	X		X							X	X	X	X	X	X	X	X	X	X	X	X
Temporary Stream Crossing	ESC22	X	X	X	X	X	X	X	X					X	X	X	X	X		X	X	X	X
Construction Road Stabilization	ESC23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Diversion of Runoff																							
Earth Dike	ESC30	X	X		X										X	X		X	X		X	X	
Temporary Drains & Swales	ESC31	X	X		X										X	X		X	X				
Slope Drain	ESC32	X	X		X										X	X		X	X				
Velocity Reduction																							
Outlet Protection	ESC40	X	X		X										X	X			X				
Check Dams	ESC41	X	X		X										X	X			X				
Slope Roughening/Terracing	ESC42	X	X		X										X	X			X				
Sediment Control																							
Silt Fence	ESC50	X	X		X										X	X		X	X				
Straw Bale Barrier	ESC51	X	X		X										X	X		X	X				
Sand Bag Barrier	ESC52	X	X		X										X	X		X	X				
Brush or Rock Filter	ESC53	X	X		X										X	X		X	X				
Storm Drain Inlet Protection	ESC54	X	X		X										X	X		X	X				
Sediment Trap	ESC55	X	X		X										X	X		X	X				
Sediment Basin	ESC56	X	X		X										X	X		X	X				
Stabilized Construction Entrance	ESC24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

(1) Numbers refer to California Best Management Practices Handbook (See Appendix I).

(2) Some practices are also covered under other regulatory programs. See BMP fact sheets in Appendix I for details.

R0000945

Attachment I1

Owner's Certification of Compliance with Minimum Requirements

Attachment I1
Owner's Certification of Compliance with Minimum Requirements

National Pollutant Discharge Elimination System (NPDES) is the portion of the Clean Water Act that applies to protection of receiving waters. Under permits from the Los Angeles Regional Water Quality Control Board (RWQCB), certain activities are subject to RWQCB enforcement. To meet the requirements of the Los Angeles County Municipal Storm water Permit (CAS614001), the City (County) of _____ has adopted minimum requirements for storm water runoff management from development construction activities. These include requirements for sediment control, erosion control and construction activities control to be implemented on each project site.

Site Address or Tract No:_____Building/Grading Permit No:_____

Owner:_____Contractor:_____

I have read and understand the requirements indicated above.

_____ _____

Owner or Authorized Representative Date

In compliance with the above requirements, I certify that I understand and will comply with the minimum requirements noted above.

_____ _____

Owner or Authorized Representative Date

Construction Priority Projects require the project owner to prepare:

- A Local SWPPP and
- A WWECP if the soil for a priority project will be disturbed during the rainy season.

The Local SWPPP must be prepared before the project owner, developer, or contractor receives a grading or building permit and must be implemented year-round throughout construction. A WWECP must be prepared prior to each rainy season, and must be implemented throughout that rainy season.

If a Local SWPPP or WWECP is required, it may be prepared by the owner, the construction contractor, or a consultant. When developing a Local SWPPP or WWECP, the preparer should assess site conditions, identify construction activities with the potential to cause storm water pollution, and then identify the BMPs that will best suit the construction activities. A well-developed plan will provide sufficient detail to properly implement and maintain the BMPs, yet be sufficiently flexible to allow for minor field modifications without making formal plan amendments.

The Local SWPPP and the WWECP must include a site map of the project (a copy of the grading or drainage plan may be used) showing:

- The project boundary and/or limits of grading. The City may elect to require site limit maps to extend 50 feet beyond property line and/or grading limits.
- The footprint of existing facilities and facilities that will be built during construction.
- Specific locations where construction materials, vehicles, and equipment will be stored, handled, used, maintained, and disposed, along with locations of structural measures that will be used to contain these materials on site.
- The existing and final grades of the site, along with any intermediate grades during construction that will significantly affect site drainage patterns.
- The location(s) where runoff from the site may enter storm drains, channels, and/or receiving waters.

The plan must provide information about the project location, owner, and contractor; and include a brief narrative description on the nature of the construction activity and special site conditions, and a list of BMPs for managing targeted construction activities. The plan must also include a BMP checklist with a discussion of the reasons for selecting or rejecting BMPs such as shown in the attached example, and must contain a signed certification statement.

Section 1 - Project Description and Information

1. The name of the project:

_____

2. The address or location of the project:

_____

_____

3. The building permit number for the project:

_____

4. The grading permit number for the project (if applicable):

_____

5. The owner/developer's name, address, phone number and contact person:

_____

_____

6. Contractor's name, address, phone number and contact person:

_____

_____

_____

7. What are the major features that the project will provide? (e.g., low density residential, commercial development, etc.)

_____

_____

_____

_____

Section 1 - Project Description and Information *(continued)*

8. What are the estimated construction start and finish dates?

   Project Start Date:_____

   Project Finish Date:_____

9. What are the estimated dates during which soil will be disturbed?

   Start Grading:_____

   Finish Grading:_____

10 Are there any unique features relating to adjacent water bodies (i.e., in or around a wetland, river, stream, or estuary)?

   _____

   _____

Section 2 - Best Management Practices

Use the following tables to indicate the BMPs that will be used to control storm water pollution. Attach additional written documentation if necessary.

2.1 General Site Management

BMP Description	Will BMP Be Used? Yes	No	If Yes, Explain How / If No, State Reason
Site Planning Considerations			
Scheduling (ESC01)			
Preservation of Existing Vegetation (ESC02)			
Construction Practices			
Dewatering Operations (CA01)			
Paving Operations (CA02)			
Structure Construction & Painting (CA03)			
Dust Control (ESC21)			
Vehicle & Equipment Management			
Vehicle & Equipment Cleaning (CA30)			
Vehicle & Equipment Fueling (CA31)			
Vehicle & Equipment Maintenance (CA32)			
Tracking Control			
Stabilized Construction Entrance (ESC24)			
Contractor Training			
Employee/Subcontractor Training (CA40)			

2.2 Construction Materials and Waste Management

BMP Description	Will BMP Be Used? Yes	No	If Yes, Explain How / If No, State Reason
Material Management			
Material Delivery and Storage (CA10)			
Material Use (CA11)			
Spill Prevention and Control (CA12)			
Waste Management			
Solid Waste Management (CA20)			
Hazardous Waste Management (CA21)			
Contaminated Soil Management (CA22)			
Concrete Waste Management (CA23)			
Sanitary/Septic Waste Management (CA24)			

Section 3 - Site Map Checklist

____ The project boundary and/or limits of grading. *(Option: 50 feet beyond property line or grading limits)*

____ The footprint of existing facilities and facilities that will be built during construction.

____ The existing and final grades of the site, along with any intermediate grades during construction that will significantly affect site drainage patterns.

____ The location(s) where runoff from the site may enter storm drain(s), channel(s), and/or receiving water(s).

____ Specific locations where construction materials, vehicles, and equipment will be stored, handled, used, maintained, and disposed, along with locations of structural measures that will be used to contain these materials on site.

Section 4 - Certification

As the project owner, I certify that appropriate BMPs will be implemented to effectively minimize the negative impacts of this project's construction activities on storm water quality. The project contractor is aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activities.

Signed: _____

Title: _____

Date: _____

Section 1 - Project Description and Information

1. The name of the project:

2. The address or location of the project:

3. The building permit number for the project:

4. The grading permit number for the project (if applicable):

5. The owner/developer's name, address, phone number and contact person:

6. Contractor's name, address, phone number and contact person:

7. What are the major features that the project will provide? (e.g., low density residential, commercial development, etc.)

Section 1 - Project Description and Information *(continued)*

8. What are the estimated construction start and finish dates?

   Project Start Date:_____

   Project Finish Date:_____

9. What are the estimated dates during which more than 1 acre or 50,000 ft^3 of soil will be disturbed?

   Start Grading: _____

   Finish Grading:_____

10 Are there any unique features relating to adjacent water bodies (i.e., in or around a wetland, river, stream, or estuary)?

   _____

   _____

Section 2 - Best Management Practices

Use the following checklists to indicate the BMPs that will be used to control wet weather erosion and off site sedimentation. Attach additional written documentation if necessary.

2.1 Erosion Control Practices

BMP Description	Will BMP Be Used? Yes	No	If Yes, Explain How / If No, State Reason
Site Planning Considerations			
Scheduling (ESC01)			
Preservation of Existing Vegetation (ESC02)			
Vegetative Stabilization			
Seeding & Planting (ESC10)			
Mulching (ESC11)			
Physical Stabilization			
Geotextiles & Mats(ESC20)			
Dust Control (ESC21)			
Temporary Stream Crossing (ESC22)			
Construction Road Stabilization (ESC23)			
Diversion of Runoff			
Earth Dike (ESC30)			
Temporary Drains & Swales (ESC31)			
Slope Drain (ESC32)			
Velocity Reduction			
Outlet Protection (ESC40)			
Check Dams (ESC41)			
Slope Roughening/Terracing (ESC42)			

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2.2 Sediment Control Practices

BMP Description	Will BMP Be Used? Yes	No	If Yes, Explain How / If No, State Reason
Sediment Control			
Silt Fence (ESC50)			
Straw Bale Barrier (ESC51)			
Sand Bag Barrier (ESC52)			
Brush or Rock Filter (ESC53)			
Storm Drain Inlet Protection (ESC54)			
Sediment Trap (ESC55)			
Sediment Basin (ESC56)			

Section 3 - Site Map Checklist

____ The project boundary and/or limits of grading. *(Option: 50 feet beyond property line or grading limits)*

____ The footprint of existing facilities and facilities that will be built during construction.

____ The existing and final grades of the site, along with any intermediate grades during construction that will significantly affect site drainage patterns.

____ The location(s) where runoff from the site may enter storm drain(s), channel(s), and/or receiving water(s).

____ Specific locations where erosion and sediment control measures will be installed for each permanent or temporary site drainage pattern that will occur before, during and after construction.

Section 4 - Certification

As the project owner, I certify that appropriate BMPs will be implemented to effectively minimize the negative impacts of this project's construction activities on storm water quality. The project contractor is aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activities for the reasons cited above.

Signed: _____

Title: _____

Date: _____

Attachment I2
Owner's NOI/SWPPP Certification Form

National Pollutant Discharge Elimination System (NPDES) is the portion of the Clean Water Act that applies to protection of receiving waters. Construction activity that will disturb a ground surface area of 5 acres or more (about 220,000 square feet or 2.02 hectares), or if the project results in the disturbance of less than 5 acres of soil but is part of a larger common plan of development or site that exceeds 5 acres, is subject to requirements of the California General Permit for Storm water Discharges Associated with Construction Activity (Permit No. CAS000002) under the NPDES Program. A Notice of Intent (NOI) is required to be filed with the SWRCB and a Storm Water Pollution Prevention Plan (SWPPP) is required to be prepared, implemented and available at the job site for review and verification at all times for such projects.

Site Address or Tract No:_____ Permit No:_____

Owner:_____ Contractor:_____

I have read and understand the requirements indicated above.

_____ _____

Owner or Authorized Representative Date

In compliance with the above requirements, I certify that a Notice of Intent has been filed with the State Water Resources Control Board and that a Storm Water Pollution Prevention Plan has been prepared.

_____ _____

Owner or Authorized Representative Date

Attachment I3

Developer/Contractor Self-Inspection Form

CONSTRUCTION SITE INSPECTION CHECKLIST

Inspected By: _____

Project: _____

Contractor: _____

Date: _____

Check "Yes" or "No" or "N/A" if not applicable.

YES	NO	N/A		
_____	_____	_____	1.	Has there been rain at the site since the last inspection?
_____	_____	_____	2.	Are all sediment barriers (e.g., sandbags, straw bales, and silt fences) in place in accordance with the Plan and are they functioning properly?
_____	_____	_____	3.	If present, are all exposed slopes protected from erosion through the implementation of acceptable soil stabilization practices?
_____	_____	_____	4.	If present, are all sediment traps/basins installed and functioning properly?
_____	_____	_____	5.	Are all material handling and storage areas reasonably clean and free of spills, leaks, or other deleterious materials?
_____	_____	_____	6.	Are all equipment storage and maintenance areas reasonably clean and free of spills, leaks, or any other deleterious materials?
_____	_____	_____	7.	Are all materials and equipment properly covered?
_____	_____	_____	8.	Are all external discharge points (i.e., outfalls) reasonably free of any noticeable pollutant discharges?
_____	_____	_____	9.	Are all internal discharge points (i.e., storm drain inlets) provided with inlet protection?

INSPECTION LOG

The site shall be inspected before and after storm events with 0.25 inches or greater predicted or actual precipitation, and documented on the Construction Site Inspection Checklist Form. Incidents of noncompliance must be reported to the Engineer. A log of all inspections, as shown below, shall be kept current.

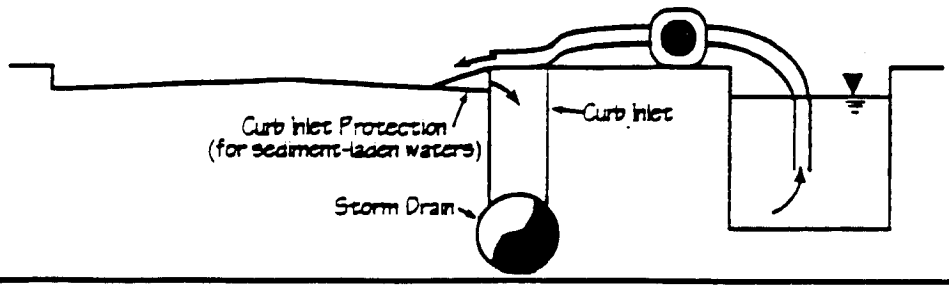
Date	Inspector	Type of Inspection			Observations (If post-storm inspection, note size of storm in inches)
		Routine	Pre-Storm	Post-Storm	

Attachment I4

Developer Information For Project Construction

BMP Fact Sheets - California Best Management Practice Handbooks (1993)

ACTIVITY: DEWATERING OPERATIONS



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from dewatering operations by using sediment controls and by testing the groundwater for pollution.

APPROACH

There are two general classes of pollutants that may result from dewatering operations: sediment, and toxics and petroleum products. A high sediment content in dewatering discharges is common because of the nature of the operation. On the other hand, toxics and petroleum products are not commonly found in dewatering discharges unless, the site or surrounding area has been used for light or heavy industrial activities, or the area has a history of groundwater contamination. The following steps will help reduce storm water pollution from dewatering discharges:

Sediment

- Use sediment controls to remove sediment from water generated by dewatering (See Sediment Trap (ESC 55) and Sediment Basin (ESC 56) in Chapter 5).
- Use filtration to remove sediment from a sediment trap or basin. Filtration can be achieved with:
  - Sump pit and a perforated or slit standpipe with holes and wrapped in filter fabric. The standpipe is surrounded by stones which filters the water as it collects in the pit before being pumped out. Wrapping the standpipe in filter fabric may require an increased suction inlet area to avoid clogging and unacceptable pump operation.
  - Floating suction hose to allow cleaner surface water to be pumped out.

Toxics and Petroleum Products

- In areas suspected of having groundwater pollution, sample the groundwater near the excavation site and have the water tested for known or suspected pollutants at a certified laboratory. Check with the Regional Water Quality Control Board and the local wastewater treatment plant for their requirements for dewatering, additional water quality tests, and disposal options.
- With a permit from the Regional Water Quality Control Board, you may be able to recycle/reuse pumped groundwater for landscape irrigation, or discharge to the storm sewer. With a permit from the local agency, you may be able to treat pumped groundwater and discharge it to the municipal wastewater treatment plant via the sanitary sewer.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA1

Best Management Practices

ACTIVITY: PAVING OPERATIONS

Graphic: North Central Texas COG, 1993

DESCRIPTION

Prevent or reduce the discharge of pollutants from paving operations, using measures to prevent runon and runoff pollution, properly disposing of wastes, and training employees and subcontractors.

APPROACH

- Avoid paving during wet weather.
- Store materials away from drainage courses to prevent storm water runon (see CA10 Material Delivery and Storage).
- Protect drainage courses, particularly in areas with a grade, by employing BMPs to divert runoff or trap/filter sediment (see Chapter 5).
- Leaks and spills from paving equipment can contain toxic levels of heavy metals and oil and grease. Place drip pans or absorbent materials under paving equipment when not in use. Clean up spills with absorbent materials rather than burying. See CA32 (Vehicle and Equipment Maintenance) and CA12 (Spill Prevention and Control) in this chapter.
- Cover catch basins and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- Shovel or vacuum saw-cut slurry and remove from site. Cover or barricade storm drains during saw cutting to contain slurry.
- If paving involves portland cement concrete, see CA23 (Concrete Waste Management) in this chapter.
- If paving involves asphaltic concrete, follow these steps:
  - Do not allow sand or gravel placed over new asphalt to wash into storm drains, streets, or creeks by sweeping. Properly dispose of this waste by referring to CA20 (Solid Waste Management) in this chapter.
  - Old asphalt must be disposed of properly. Collect and remove all broken asphalt from the site and recycle whenever possible.
  - If paving involves on-site mixing plant, follow the storm water permitting requirements for industrial activities.
- Train employees and subcontractors.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Inspect employees and subcontractors to ensure that measures are being followed.
  - Keep ample supplies of drip pans or absorbent materials on-site.

LIMITATIONS

- There are no major limitations to this best management practice.

Objectives

- **Housekeeping Practices** (selected)
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ◒ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

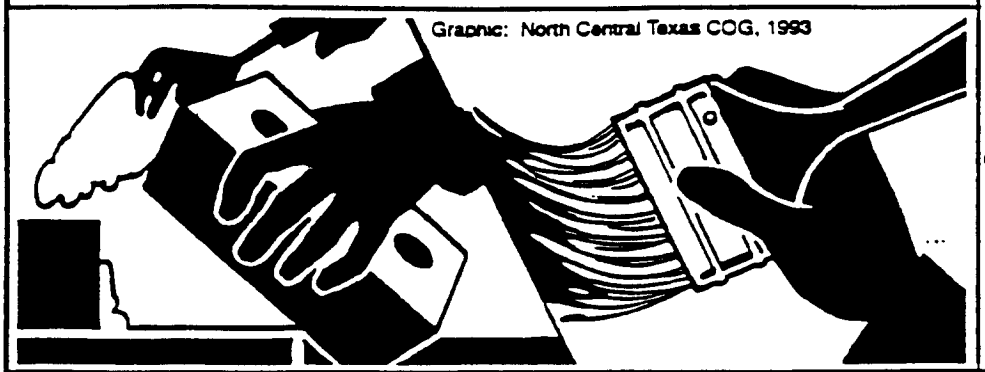
- ○ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA2

Best Management Practices

ACTIVITY: STRUCTURE CONSTRUCTION AND PAINTING


Graphic: North Central Texas COG, 1993

Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from structure construction and painting by enclosing or covering or berming building material storage areas, using good housekeeping practices, using safer alternative products, and training employees and subcontractors.

APPROACH

- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep the area.
- Use soil erosion control techniques if bare ground is exposed (See Chapter 5).
- Buy recycled or less hazardous products to the maximum extent practicable.
- Conduct painting operations consistent with local air quality and OSHA regulations.
- Properly store paints and solvents. See CA10 (Material Delivery and Storage) in this chapter.
- Properly store and dispose waste materials generated from the activity. See the waste management BMPs (CA20 to CA24) in this chapter.
- Recycle residual paints, solvents, lumber, and other materials to the maximum extent practicable.
- Make sure that nearby storm drains are well marked to minimize the chance of inadvertent disposal of residual paints and other liquids.
- Clean the storm drain system in the immediate construction area after construction is completed.
- Educate employees who are doing the work.
- Inform subcontractors of company policy on these matters and include appropriate provisions in their contract to make certain proper housekeeping and disposal practices are implemented.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - These BMPs are generally of low to moderate cost.
- Maintenance
  - Maintenance should be minimal.

LIMITATIONS

- Safer alternative products may not be available, suitable, or effective in every case.
- Hazardous waste that cannot be re-used or recycled must be disposed of by a licensed hazardous waste hauler.

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ○ Oil & Grease
- ● Floatable Materials
- ● Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

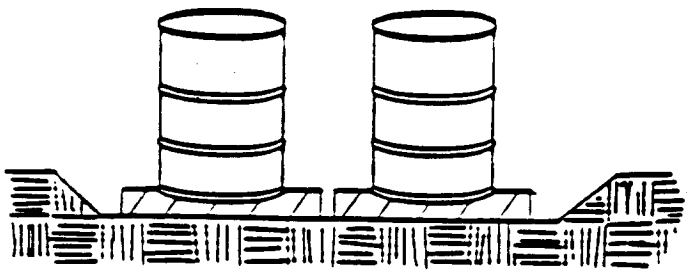
- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA3

Best Management Practices

ACTIVITY: MATERIAL DELIVERY AND STORAGE



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from material delivery and storage by minimizing the storage of hazardous materials on-site, storing materials in a designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

This best management practice covers only material delivery and storage. For other information on materials, see CA11 (Material Use), or CA12 (Spill Prevention and Control). For information on wastes, see the waste management BMPs in this chapter.

APPROACH

The following materials are commonly stored on construction sites:

- Soil,
- Pesticides and herbicides,
- Fertilizers,
- Detergents,
- Plaster or other products,
- Petroleum products such as fuel, oil, and grease, and
- Other hazardous chemicals such as acids, lime, glues, paints, solvents, and curing compounds.

Storage of these materials on-site can pose the following risks:

- Storm water pollution,
- Injury to workers or visitors,
- Groundwater pollution, and
- Soil contamination.

Therefore, the following steps should be taken to minimize your risk:

- Designate areas of the construction site for material delivery and storage.
  - Place near the construction entrances, away from waterways
  - Avoid transport near drainage paths or waterways
  - Surround with earth berms (see ESC30, Earth Dike.)
  - Place in an area which will be paved
- Storage of reactive, ignitable, or flammable liquids must comply with the fire codes of your area. Contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code, NFPA30.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.
- Keep an accurate, up-to-date inventory of materials delivered and stored on-site.
- Keep your inventory down.

Targeted Pollutants

- ◒ Sediment
- ◒ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ◒ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

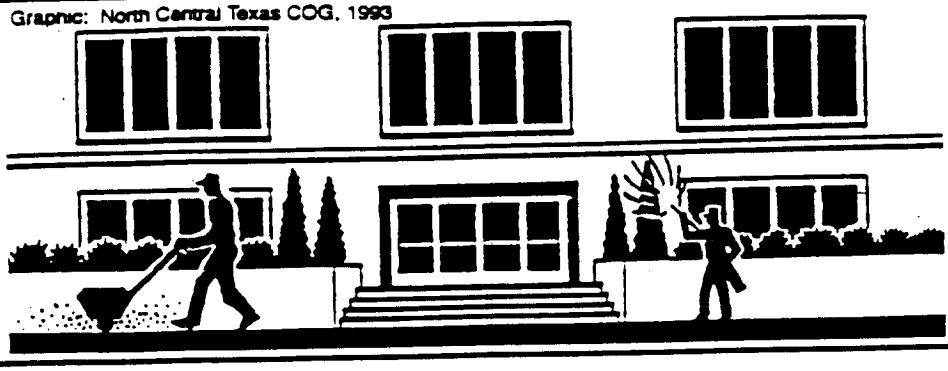
● High ○ Low

CA10

Best Management Practices

ACTIVITY: MATERIAL USE

Graphic: North Central Texas COG, 1993



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from material use by using alternative products, minimizing hazardous material use on-site, and training employees and subcontractors.

APPROACH

The following materials are commonly used on construction sites:

- Pesticides and herbicides,
- Fertilizers,
- Detergents,
- Plaster and other products,
- Petroleum products such as fuel, oil, and grease, and
- Other hazardous chemicals such as acids, lime, glues, paints, solvents, and curing compounds.

Use of these materials on-site can pose the following risks:

- Storm water pollution,
- Injury to workers or visitors,
- Groundwater pollution, and
- Soil contamination.

Therefore, the following steps should be taken to minimize your risk:

- Use less hazardous, alternative materials as much as possible.
- Minimize use of hazardous materials on-site.
- Use materials only where and when needed to complete the construction activity.
- Follow manufacturer's instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
- Personnel who use pesticides should be trained in their use. The California Department of Pesticide Regulation and county agricultural commissioners license pesticide dealers, certify pesticide applicators, and conduct on-site inspections.
- Do not over-apply fertilizers, herbicides, and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Unless on steep slopes, till fertilizers into the soil rather than hydroseeding. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried off-site by runoff. Do not apply these chemicals just before it rains.
- Train employees and subcontractors in proper material use.

Targeted Pollutants

- ○ Sediment
- ◒ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ◒ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

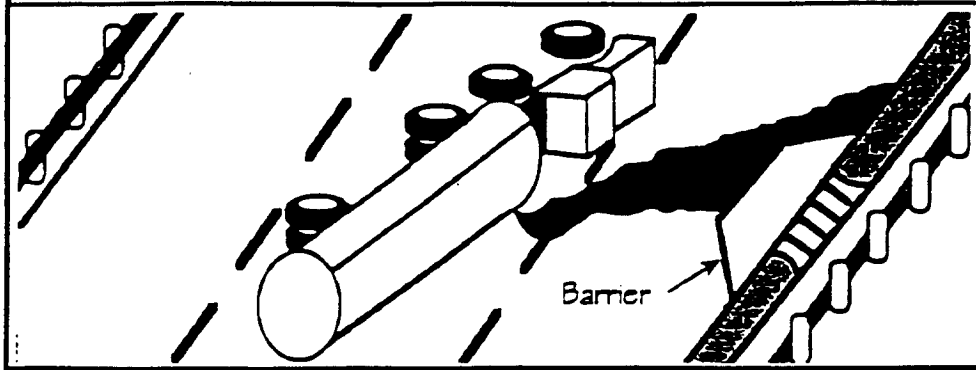
- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA11

Best Management Practices

ACTIVITY: SPILL PREVENTION AND CONTROL



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

This best management practice covers only spill prevention and control. However, CA10 (Material Delivery and Storage) and CA11 (Material Use), also contain useful information, particularly on spill prevention. For information on wastes, see the waste management BMPs in this chapter.

APPROACH

The following steps will help reduce the storm water impacts of leaks and spills:

Define "Significant Spill"

- Different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.

General Measures

- Hazardous materials and wastes should be stored in covered containers and protected from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals.

Cleanup

- Clean up leaks and spills immediately.
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this chapter for specific information.

Reporting

- Report significant spills to local agencies, such as the Fire Department; they can assist in cleanup.
- Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour).

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ◒ O&M Costs
- ○ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

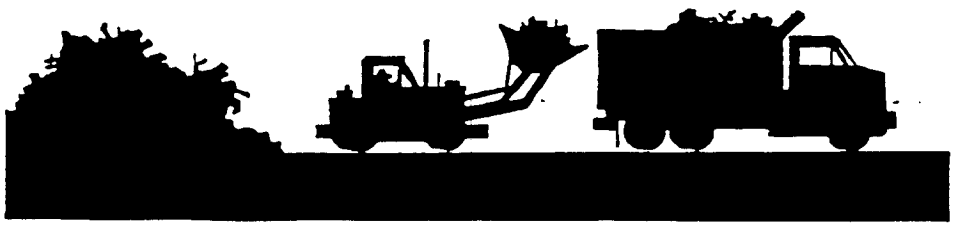
● High ○ Low

CA12

Best Management Practices

ACTIVITY: SOLID WASTE MANAGEMENT

Graphic: North Central Texas COG, 1993



DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

APPROACH

Solid waste is one of the major pollutants resulting from construction. Construction debris includes:

- Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction;
- Packaging materials including wood, paper and plastic;
- Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces, and masonry products; and
- Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, and plastic wrappers, and cigarettes.

The following steps will help keep a clean site and reduce storm water pollution:

- Select designated waste collection areas on-site.
- Inform trash hauling contractors that you will accept only water-tight dumpsters for on-site use. Inspect dumpsters for leaks and repair any dumpster that is not water tight.
- Locate containers in a covered area and/or in a secondary containment.
- Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it's windy.
- Plan for additional containers and more frequent pickup during the demolition phase of construction.
- Collect site trash daily, especially during rainy and windy conditions.
- Erosion and sediment control devices tend to collect litter. Remove this solid waste promptly.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Salvage or recycle any useful material. For example, trees and shrubs from land clearing can be used as a brush barrier (see ESC53), or converted into wood chips, then used as mulch on graded areas (see ESC11).
- Do not hose out dumpsters on the construction site. Leave dumpster cleaning to trash hauling contractor.
- Arrange for regular waste collection before containers overflow.

Objectives

- Housekeeping Practices
- **Contain Waste**
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ◒ Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ● Floatable Materials
- ● Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

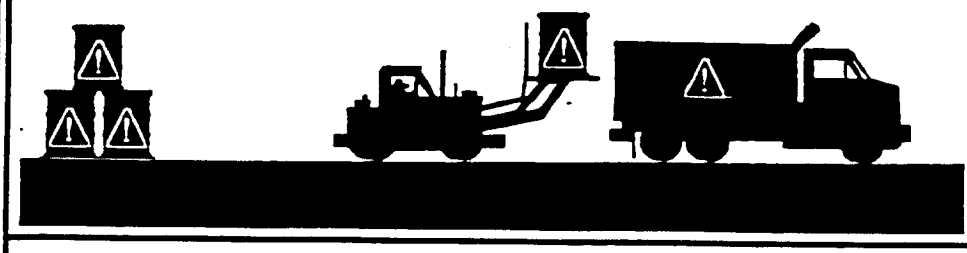
● High ○ Low

CA20

Best Management Practices

ACTIVITY: HAZARDOUS WASTE MANAGEMENT

Graphic: North Central Texas COG, 1993



DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.

APPROACH

Many of the chemicals used on-site can be hazardous materials which become hazardous waste upon disposal. These wastes may include:

- Paints and solvents;
- Petroleum products such as oils, fuels, and grease;
- Herbicides and pesticides;
- Acids for cleaning masonry; and
- Concrete curing compounds.

In addition, sites with existing structures may contain wastes which must be disposed of in accordance with Federal, State, and local regulations. These wastes include:

- Sandblasting grit mixed with lead-, cadmium-, or chromium-based paints;
- Asbestos; and
- PCBs (particularly in older transformers).

The following steps will help reduce storm water pollution from hazardous wastes:

Material Use

- Use all of the product before disposing of the container.
- Do not remove the original product label, it contains important safety and disposal information.
- Do not over-apply herbicides and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried off-site by runoff. Do not apply these chemicals just before it rains. People applying pesticides must be certified in accordance with Federal and State regulations.
- Do not clean out brushes or rinse paint containers into the dirt, street, gutter, storm drain, or stream. "Paint out" brushes as much as possible. Rinse water-based paints to the sanitary sewer. Filter and re-use thinners and solvents. Dispose of excess oil-based paints and sludge as hazardous waste.

Objectives

- Housekeeping Practices
- **Contain Waste**
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

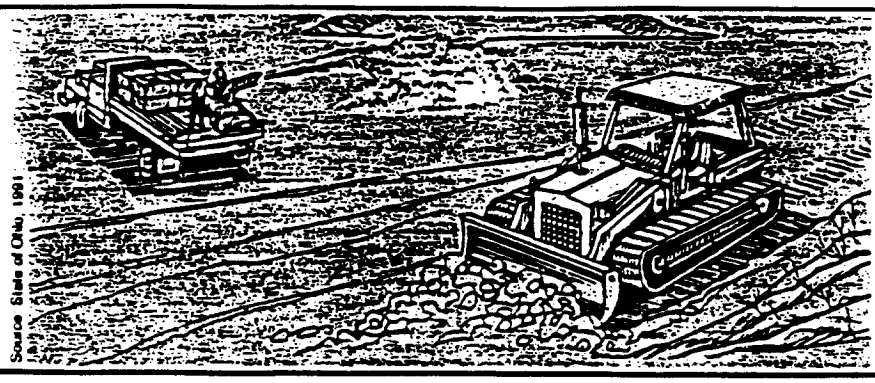
- ○ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA21

Best Management Practices

ACTIVITY: CONTAMINATED SOIL MANAGEMENT



Objectives

- Housekeeping Practices
- **Contain Waste**
- **Minimize Disturbed Areas**
- **Stabilize Disturbed Areas**
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

APPROACH

Contaminated soils may occur on your site for several reasons including:

- Past site uses and activities;
- Detected or undetected spills and leaks; and
- Acid or alkaline solutions from exposed soil or rock formations high in acid or alkaline-forming elements.

Most developers conduct pre-construction environmental assessments as a matter of routine. Recent court rulings holding contractors liable for cleanup costs when they unknowingly move contaminated soil, highlight the need for contractors to confirm that a site assessment is completed before earth moving begins.

The following steps will help reduce storm water pollution from contaminated soil:

- Conduct thorough site planning including pre-construction geologic surveys.
- Look for contaminated soil as evidenced by discoloration, odors, differences in soil properties, abandoned underground tanks or pipes, or buried debris.
- Prevent leaks and spills to the maximum extent practicable. Contaminated soil can be expensive to treat and/or dispose of properly. However, addressing the problem before construction is much less expensive than after the structures are in place.
- Test suspected soils at a certified laboratory.
- If the soil is contaminated, work with the local regulatory agencies to develop options for treatment and/or disposal.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - Prevention of leaks and spills is inexpensive. Treatment and/or disposal of contaminated soil can be quite expensive.
- Maintenance
  - Inspect excavated areas daily for signs of contaminated soil.
  - Implement CA12, Spill Prevention and Control, to prevent leaks and spills as much as possible.

Targeted Pollutants

- ◒ Sediment
- ○ Nutrients
- ● Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

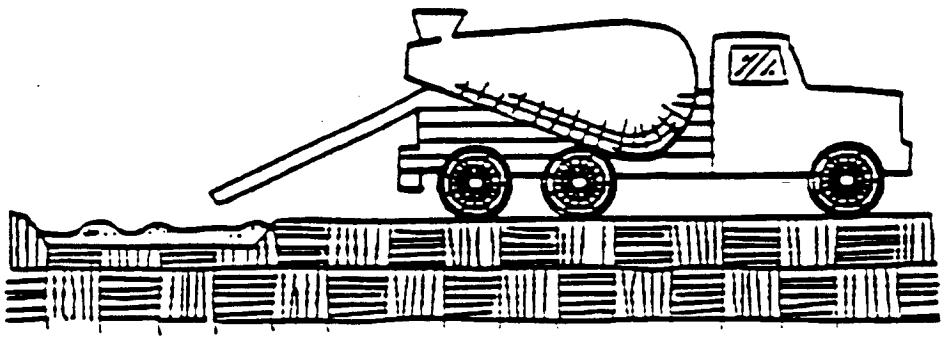
- ○ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA22

Best Management Practices

ACTIVITY: CONCRETE WASTE MANAGEMENT



Objectives

- *Housekeeping Practices*
- *Contain Waste* (●)
- *Minimize Disturbed Areas*
- *Stabilize Disturbed Areas*
- *Protect Slopes/Channels*
- *Control Site Perimeter*
- *Control Internal Erosion*

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from concrete waste by conducting washout off-site, performing on-site washout in a designated area, and training employees and subcontractors.

APPROACH

The following steps will help reduce storm water pollution from concrete wastes:

- Store dry and wet materials under cover, away from drainage areas.
- Avoid mixing excess amounts of fresh concrete or cement on-site.
- Perform washout of concrete trucks off site or in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped on-site, except in designated areas.
- For on-site washout:
  - locate washout area at least 50 feet from storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste;
  - wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed of properly.
- When washing concrete to remove fine particles and expose the aggregate, avoid creating runoff by draining the water to a bermed or level area.
- Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stock pile, or dispose in the trash.
- Train employees and subcontractors in proper concrete waste management.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Inspect subcontractors to ensure that concrete wastes are being properly managed.
  - If using a temporary pit, dispose hardened concrete on a regular basis.

LIMITATIONS

- Off-site washout of concrete wastes may not always be possible.

Targeted Pollutants

- ○ *Sediment*
- ○ *Nutrients*
- ○ *Toxic Materials*
- ○ *Oil & Grease*
- ○ *Floatable Materials*
- ◒ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

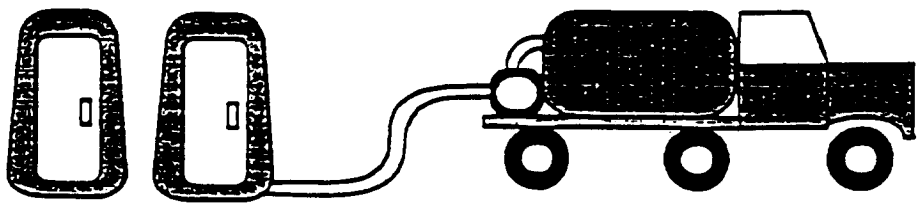
- ○ *Capital Costs*
- ○ *O&M Costs*
- ◒ *Maintenance*
- ◒ *Training*
- ○ *Suitability for Slopes >5%*

● *High* ○ *Low*

CA23

Best Management Practices

ACTIVITY: SANITARY/SEPTIC WASTE MANAGEMENT



Objectives

- Housekeeping Practices
- **Contain Waste**
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from sanitary/septic waste by providing convenient, well-maintained facilities, and arranging for regular service and disposal.

APPROACH

Sanitary or septic wastes should be treated or disposed of in accordance with State and local requirements. These requirements may include:

- Locate sanitary facilities in a convenient location.
- Untreated raw wastewater should never be discharged or buried.
- Temporary septic systems should treat wastes to appropriate levels before discharging.
- If using an on-site disposal system (OSDS), such as a septic system, comply with local health agency requirements.
- Temporary sanitary facilities that discharge to the sanitary sewer system should be properly connected to avoid illicit discharges.
- If discharging to the sanitary sewer, contact the local wastewater treatment plant for their requirements.
- Sanitary/septic facilities should be maintained in good working order by a licensed service.
- Arrange for regular waste collection by a licensed hauler before facilities overflow.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Inspect facilities regularly.
  - Arrange for regular waste collection.

LIMITATIONS

- There are no major limitations to this best management practice.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites; Flood Control District of Maricopa County, AZ, September 1992.

Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ◒ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA24

Best Management Practices

ACTIVITY: VEHICLE AND EQUIPMENT CLEANING

Graphic: North Central Texas COG, 1993

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment cleaning by using off-site facilities, washing in designated, contained areas only, eliminating discharges to the storm drain by infiltrating or recycling the wash water, and/or training employees and subcontractors.

APPROACH

- Use off-site commercial washing businesses as much as possible. Washing vehicles and equipment outdoors or in areas where wash water flows onto paved surfaces or into drainage pathways can pollute storm water. If you wash a large number of vehicles or pieces of equipment, consider conducting this work at an off-site commercial business. These businesses are better equipped to handle and dispose of the wash waters properly. Performing this work off-site can also be economical by eliminating the need for a separate washing operation at your site.
- If washing must occur on-site, use designated, bermed wash areas to prevent wash water contact with storm water, creeks, rivers, and other water bodies. The wash area can be sloped for wash water collection and subsequent infiltration into the ground.
- Use as little water as possible to avoid having to install erosion and sediment controls for the wash area.
- Use phosphate-free, biodegradable soaps.
- Educate employees and subcontractors on pollution prevention measures.
- Do not permit steam cleaning on-site. Steam cleaning can generate significant pollutant concentrations.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Minimal, some berm repair may be necessary.

LIMITATIONS

- Even phosphate-free, biodegradable soaps have been shown to be toxic to fish before the soap degrades.
- Sending vehicles/equipment off-site should be done in conjunction with ESC24 (Stabilized Construction Entrance).

REFERENCE

Swisher, R.D., 1987. Surfactant Biodegradation, Marcel Decker Corporation

Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

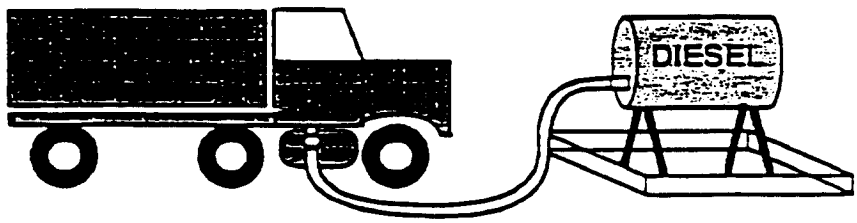
- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA30

Best Management Practices

ACTIVITY: VEHICLE AND EQUIPMENT FUELING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent fuel spills and leaks, and reduce their impacts to storm water by using off-site facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors.

APPROACH

- Use off-site fueling stations as much as possible. Fueling vehicles and equipment outdoors or in areas where fuel may spill/leak onto paved surfaces or into drainage pathways can pollute storm water. If you fuel a large number of vehicles or pieces of equipment, consider using an off-site fueling station. These businesses are better equipped to handle fuel and spills properly. Performing this work off-site can also be economical by eliminating the need for a separate fueling area at your site.
- If fueling must occur on-site, use designated areas, located away from drainage courses, to prevent the runon of storm water and the runoff of spills.
- Discourage "topping-off" of fuel tanks.
- Always use secondary containment, such as a drain pan or drop cloth, when fueling to catch spills/leaks.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Use adsorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.
- Carry out all Federal and State requirements regarding stationary above ground storage tanks.
- Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and perhaps forklifts, most vehicles should be able to travel to a designated area with little lost time.
- Train employees and subcontractors in proper fueling and cleanup procedures.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above measures are low cost, except for the capital costs of above ground tanks that meet all local environmental, zoning, and fire codes.
- Maintenance
  - Keep ample supplies of spill cleanup materials on-site.
  - Inspect fueling areas and storage tanks on a regular schedule.

LIMITATIONS

- Sending vehicles/equipment off-site should be done in conjunction with ESC24 (Stabilized Construction Entrance).

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

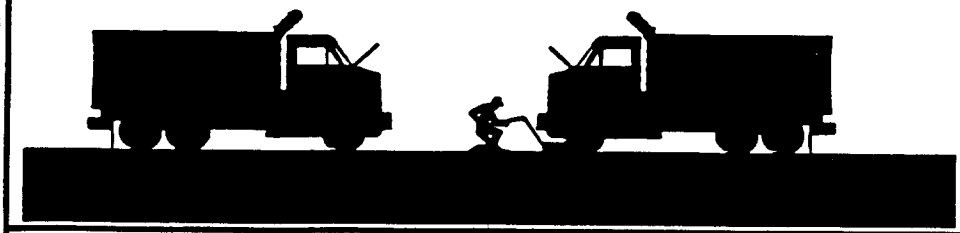
● High ○ Low

CA31

Best Management Practices

ACTIVITY: VEHICLE AND EQUIPMENT MAINTENANCE

Graphic: North Central Texas COG, 1993



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment maintenance by running a "dry site". This involves using off-site facilities, performing work in designated areas only, providing cover for materials stored outside, checking for leaks and spills, containing and cleaning up spills immediately, and training employees and subcontractors.

APPROACH

- Keep vehicles and equipment clean, don't allow excessive build-up of oil and grease.
- Use off-site repair shops as much as possible. Maintaining vehicles and equipment outdoors or in areas where vehicle or equipment fluids may spill or leak onto the ground can pollute storm water. If you maintain a large number of vehicles or pieces of equipment, consider using an off-site repair shop. These businesses are better equipped to handle vehicle fluids and spills properly. Performing this work off-site can also be economical by eliminating the need for a separate maintenance area.
- If maintenance must occur on-site, use designated areas, located away from drainage courses, to prevent the runon of storm water and the runoff of spills.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Use adsorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.
- Regularly inspect on-site vehicles and equipment for leaks, and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment on-site.
- Segregate and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic, and transmission fluids.
- Train employees and subcontractors in proper maintenance and spill cleanup procedures.
- For a quick reference on disposal alternatives for specific wastes, see Table 4.2, CA40, Employee/Subcontractor Training.

REQUIREMENTS

- Costs (Capital, O&M)
  - All of the above are low cost measures.
- Maintenance
  - Keep ample supplies of spill cleanup materials on-site.
  - Inspect maintenance areas on a regular schedule.

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

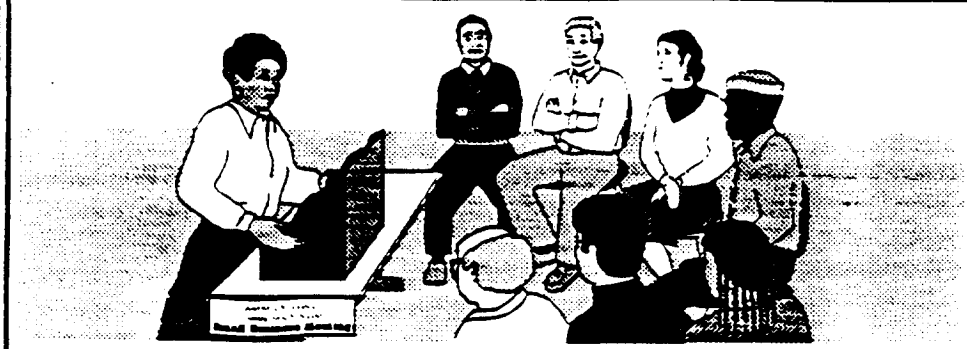
- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ◒ Training
- ○ Suitability for Slopes >5%

● High ○ Low

CA32

Best Management Practices

ACTIVITY: EMPLOYEE/SUBCONTRACTOR TRAINING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Employee/subcontractor training, like maintenance or a piece of equipment, is not so much a best management practice as it is a method by which to implement BMPs. This fact sheet highlights the importance of training and of integrating the elements of employee/subcontractor training from the individual source controls into a comprehensive training program as part of a company's Storm Water Pollution Prevention Plan (SWPPP).

The specific employee/subcontractor training aspects of each of the source controls are highlighted in the individual fact sheets. The focus of this fact sheet is more general, and includes the overall objectives and approach for assuring employee/subcontractor training in storm water pollution prevention. Accordingly, the organization of this fact sheet differs somewhat from the other fact sheets in this chapter.

OBJECTIVES

Employee/subcontractor training should be based on four objectives:

- Promote a clear identification and understanding of the problem, including activities with the potential to pollute storm water;
- Identify solutions (BMPs);
- Promote employee/subcontractor ownership of the problems and the solutions; and
- Integrate employee/subcontractor feedback into training and BMP implementation.

APPROACH

- Integrate training regarding storm water quality management with existing training programs that may be required for your business by other regulations such as: the Illness and Injury Prevention Program (IIPP) (SB 198) (California Code of Regulations Title 8, Section 3203), the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard (29 CFR 1910.120), the Spill Prevention Control and Countermeasure (SPCC) Plan (40 CFR 112), and the Hazardous Materials Management Plan (Business Plan) (California Health and Safety Code, Section 6.95).
- Businesses, particularly smaller ones that may not be regulated by Federal, State, or local regulations, may use the information in this Handbook to develop a training program to reduce their potential to pollute storm water.
- Use the quick reference on disposal alternatives (Table 4.2) to train employee/subcontractors in proper and consistent methods for disposal.

CA40

Best Management Practices

TABLE 4.2 QUICK REFERENCE - DISPOSAL ALTERNATIVES
(Adopted from Santa Clara County Nonpoint Source Pollution Control Program - December 1992)

All of the waste products on this chart are prohibited from discharge to the storm drain system. Use this matrix to decide which alternative disposal strategies to use. **ALTERNATIVES ARE LISTED IN PRIORITY ORDER.**

Key: HHW Household hazardous waste (Government-sponsored drop-off events)
POTW Publically Owned Treatment Plant
Reg.Bd. Regional Water Quality Control Board (Oakland)
"Dispose to sanitary sewer" means dispose into sink, toilet, or sanitary sewer clean-out connection.
"Dispose as trash" means dispose in dumpsters or trash containers for pickup and/or eventual disposal in landfill.
"Dispose as hazardous waste" for business/commercial means contract with a hazardous waste hauler to remove and dispose.

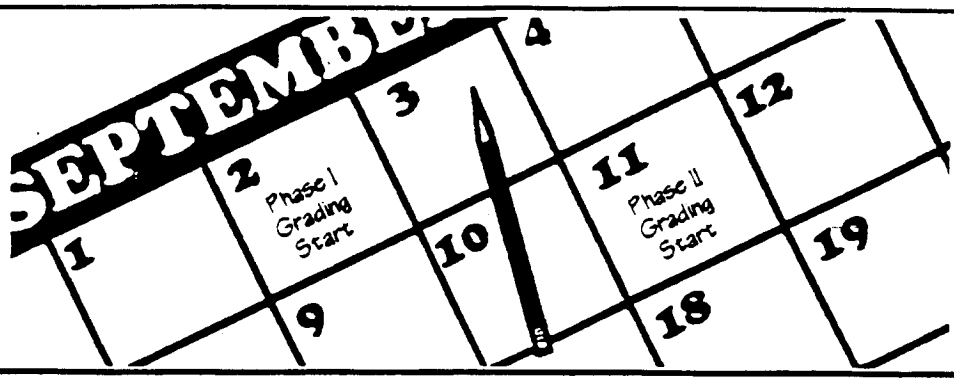
DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
General Construction and Painting; Street and Utility Maintenance			
Excess paint (oil-based)	1. Recycle/reuse. 2. Dispose as hazardous waste.		1. Recycle/reuse. 2. Take to HHW drop-off.
Excess paint (water-based)	1. Recycle/reuse. 2. Dry residue in cans, dispose as trash. 3. If volume is too much to dry, dispose as hazardous waste.		1. Recycle/reuse. 2. Dry residue in cans, dispose as trash. 3. If volume is too much to dry, take to HHW drop-off
Paint cleanup (oil-based)	Wipe paint out of brushes, then: 1. Filter & reuse thinners, solvents. 2. Dispose as hazardous waste.		Wipe paint out of brushes, then: 1. Filter & reuse thinners, solvents. 2. Take to HHW drop-off.
Paint cleanup (water-based)	Wipe paint out of brushes, then: 1. Rinse to sanitary sewer.		Wipe paint out of brushes, then: 1. Rinse to sanitary sewer.
Empty paint cans (dry)	1. Remove lids, dispose as trash.		1. Remove lids, dispose as trash.
Paint stripping (with solvent)	1. Dispose as hazardous waste.		1. Take to HHW drop-off.
Building exterior cleaning (high-pressure water)	1. Prevent entry into storm drain and remove offsite 2. Wash onto dirt area, spade in 3. Collect (e.g. mop up) and discharge to sanitary sewer	POTW	
Cleaning of building exteriors which have **HAZARDOUS MATERIALS** (e.g. mercury, lead) in paints	1. Use dry cleaning methods 2. Contain and dispose washwater as hazardous waste (Suggestion: dry material first to reduce volume)		

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
General Construction and Painting; Street and Utility Maintenance (cont'd)			
Rinsewater from concrete mixing trucks	1. Return truck to yard for rinsing into pond or dirt area 2. At construction site, wash into pond or dirt area		
Non-hazardous construction and demolition debris	1. Recycle/reuse (concrete, wood, etc.) 2. Dispose as trash		1. Recycle/reuse (concrete, wood, etc. 2. Dispose as trash
Hazardous demolition and construction debris (e.g. asbestos)	1. Dispose as hazardous waste		1. Do not attempt to remove yourself. Contact asbestos removal service for safe removal and disposal 2. Very small amounts (less than 5 lbs) may be double-wrapped in plastic and taken to HHW drop-off
Saw-cut slurry	1. Use dry cutting technique and sweep up residue 2. Vacuum slurry and dispose off-site. 3. Block storm drain or berm with low weir as necessary to allow most solids to settle. Shovel out gutters; dispose residue to dirt area, construction yard or landfill.		
Construction dewatering (Nonturbid, uncontaminated groundwater)	1. Recycle/Reuse 2. Discharge to storm drain		
Construction dewatering (Other than nonturbid, uncontaminated groundwater)	1. Recycle/reuse 2. Discharge to sanitary sewer 3. As appropriate, treat prior to discharge to storm drain	POTW Reg. Bd.	
Portable toilet waste	1. Leasing company shall dispose to sanitary sewer at POTW	POTW	
Leaks from garbage dumpsters	1. Collect, contain leaking material. Eliminate leak, keep covered, return to leasing company for immediate repair 2. If dumpster is used for liquid waste, use plastic liner		

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
Landscape/Garden Maintenance			
Pesticides	1. Use up. Rinse containers use rinsewater as product. Dispose rinsed containers as trash 2. Dispose unused pesticide as hazardous waste		1. Use up. Rinse containers, use rinsewater as pesticide. Dispose rinsed container as trash. 2. Take unused pesticide to HHW drop-off
Garden clippings	1. Compost 2. Take to Landfill		1. Compost 2. Dispose as trash.
Tree trimming	1. Chip if necessary, before composting or recycling		1. Chip if necessary, before composting or recycling
Swimming pool, spa, fountain water (emptying)	1. Do not use metal-based algicides (i.e. Copper Sulfate) 2. Recycle/reuse (e.g. irrigation) 3. Determine chlorine residual = 0, wait 24 hours and then discharge to storm drain.	POTW	1. Do not use metal-based algicides (i.e. Copper Sulfate) 2. Recycle/reuse (e.g. irrigation) 3. Determine chlorine residual = 0, wait 24 hours and then discharge to storm drain.
Acid or other pool/spa/fountain cleaning	1. Neutralize and discharge to sanitary sewer	POTW	
Swimming pool, spa filter backwash	1. Reuse for irrigation 2. Dispose on dirt area 3. Settle, dispose to sanitary sewer		1. Use for landscape irrigation 2. Dispose on dirt area 3. Settle, dispose to sanitary sewer
Vehicle Wastes			
Used motor oil	1. Use secondary containment while storing, send to recycler.		1. Put out for curbside recycling pickup where available 2. Take to Recycling Facility or auto service facility with recycling program 3. Take to HHW events accepting motor oil
Antifreeze	1. Use secondary containment while storing, send to recycler.		1. Take to Recycling Facility
Other vehicle fluids and solvents	1. Dispose as hazardous waste		1. Take to HHW event
Automobile batteries	1. Send to auto battery recycler 2. Take to Recycling Center		1. Exchange at retail outlet 2. Take to Recycling Facility or HHW event where batteries are accepted
Motor home/construction trailer waste	1. Use holding tank. Dispose to		1. Use holding tank, dispose to sanitary

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
Other Wastes (cont'd)			
Kitchen Grease	1. Provide secondary containment, collect, send to recyler. 2. Provide secondary containment, collect, send to POTW via hauler.	POTW	1. Collect, solidify, dispose as trash
Restaurant cleaning of floor mats, exhaust filters, etc.	1. Clean inside building with discharge through grease trap to sanitary sewer. 2. Clean outside in container or bermed area with discharge to sanitary sewer.		
Clean-up wastewater from sewer back-up	1. Follow this procedure: a. Block storm drain, contain, collect, and return spilled material to the sanitary sewer. b. Block storm drain, rinse remaining material to collection point and pump to sanitary sewer. (no rinse-water may flow to storm drain)		

BMP: SCHEDULING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION

Sequencing the construction project to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking.

SUITABLE APPLICATIONS

Proper sequencing of construction activities to reduce erosion potential should be incorporated into the schedule of every construction project. Use of other, more costly yet less effective, erosion and sedimentation controls, may often be reduced through proper construction sequencing.

APPROACH

- Project design considerations: Design project to integrate into existing land contours. Significant regrading of a site will require more costly erosion and sedimentation control measures and may require that on-site drainage facilities be installed.
- Incorporate existing, natural areas: Inventory and evaluate the existing site terrain and vegetation. Disturbance of highly erosive natural areas (e.g., steep, unstable slope areas, watercourses) should be minimized, while protecting other areas may enhance site aesthetics. Construction should not disturb these areas (see ESC2).
- Avoid rainy periods: Schedule major grading operations during dry months. Allow enough time before rainfall begins to stabilize the soil with vegetation or physical means (see ESC 10 to 24) or to install temporary sediment trapping devices (see ESC 50 to 56).
- Practice erosion and sediment control year round: Erosion may be caused during dry seasons by "freak" rainfall, wind and vehicle tracking. Therefore, keep the site stabilized year-round, and retain wet season sediment trapping devices.
- Minimize soil exposed at one time: Schedule projects to disturb only small portions of the site at any one time. Complete grading as soon as possible. Immediately stabilize the disturbed portion before grading the next portion. Practice staged seeding—revegetate cut and fill slopes as the work progresses.
- Trenching: Close and stabilize open trenches as soon as possible. Sequence trenching projects so that most open portions of the trench are closed before new trenching is begun.

REQUIREMENTS

- Cost
  - Construction scheduling to reduce erosion may increase other construction costs due to reduced economies of scale in performing site grading. The cost-effectiveness of scheduling techniques should be compared with the other, less effective erosion and sedimentation controls to achieve a cost-effective balance.

Targeted Pollutants

- ○ Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

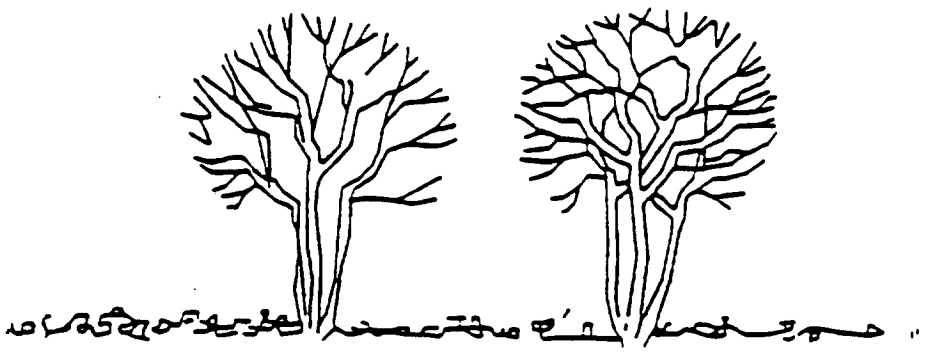
- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ○ Suitibility for Slopes >5%

● High ○ Low

ESC1

Best Management Practices

BMP: PRESERVATION OF EXISTING VEGETATION



Objectives

- Housekeeping Practices
- Contain Waste
- **Minimize Disturbed Areas**
- **Stabilize Disturbed Areas**
- **Protect Slopes/Channels**
- **Control Site Perimeter**
- Control Internal Erosion

GENERAL DESCRIPTION

Carefully planned preservation of existing vegetation minimizes the potential of removing or injuring existing trees, vines, shrubs and/or grasses that serve as erosion controls.

SUITABLE APPLICATIONS

- Areas within site where no construction activity occurs, or occurs at a later date.
- Sensitive areas where natural vegetation exist and should be preserved, such as: steep slopes, watercourses, and building sites in wooded areas.
- Areas where local, state and federal government requires preservation, such as: vernal pools, wetlands, marshes, certain oak trees, etc.

INSTALLATION/APPLICATION CRITERIA

- Clearly mark, flag or fence vegetation or areas where vegetation should be preserved.
- Prepare landscaping plans which include as much existing vegetation as possible and state proper care of this vegetation both during and after construction.
- Define and protect with berms, fencing, signs, etc., a setback area from vegetation to be preserved. Setback area size should be based on the location, species, size, age and potential impact of adjacent construction activities or permanent improvements.
- Proposed landscaping plans which do not include plant species that compete with the existing vegetation.
- Do not locate construction traffic routes, spoil piles, etc., where significant adverse impact on existing vegetation may occur.

REQUIREMENTS

- Maintenance
  - Inspection and maintenance requirements for protection of vegetation are low.
  - During construction the limits of grading or disturbance should be clearly marked at all times.
  - Irrigation or maintenance of native trees or vegetation should conform to specifications on the Landscape Plan.
- Cost
  - There is little cost associated with preserving existing vegetation if properly planned during the project design, and may yield aesthetic benefits which enhance property values.

LIMITATIONS

- Requires forward planning by the owner/developer, contractor and design staff.
- For sites with diverse topography, it is often difficult and expensive to save existing trees while grading the site satisfactorily for the planned development.

Targeted Pollutants

- ● **Sediment**
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

● High ○ Low

ESC2

Best Management Practices

Additional Information — Preservation of Existing Vegetation

Methods for protecting existing vegetation and trees:

- Stake off root system limits (drip line of tree). Some counties limit construction within 5 feet of the tree drip line.
- Fence off the area to be preserved or along the tree drip line.
- Flag or mark trees to remain in place.
- Tree wells and retaining walls (permanent) help preserve existing vegetation, but must be large enough to protect the root system (see below).
- For the California Oak tree, no trenching or irrigation should be allowed within the driplines of the tree, since both these activities are detrimental to the preservation of the tree.
- Where grading under trees is necessary, excavation and fill should be limited to 1 foot within the driplines.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

County of Sacramento Tree Preservation Ordinance - September 1981.

Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

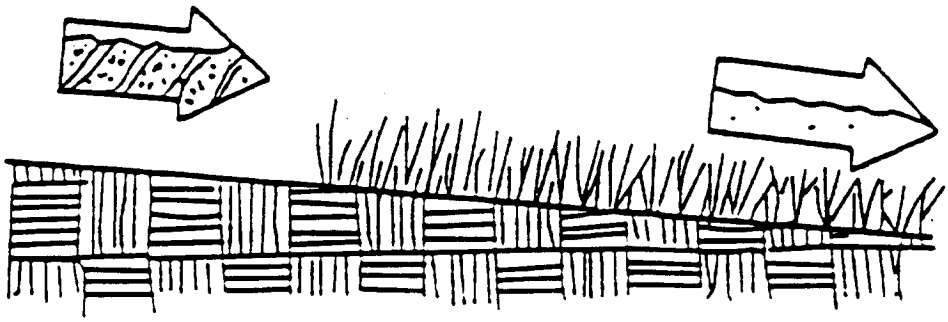
Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

SUPPLEMENTAL INFORMATION, JUNE 1998

Limit and phase clearing. By clearing only those areas immediately essential for completing site construction, buffer zones are preserved and soil remains undisturbed until construction begins in a particular area. Additionally, the proposed limits of land disturbance should be physically marked off to ensure that no more than the required land area is cleared.

ESC2

BMP: SEEDING AND PLANTING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- **Stabilize Disturbed Areas**
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

Seeding of grasses and plantings of trees, shrubs, vines and ground covers provide long-term stabilization of soil. In some areas, with suitable climates, grasses can be planted for temporary stabilization.

SUITABLE APPLICATIONS

- Appropriate for site stabilization both during construction and post-construction.
- Any graded/cleared areas where construction activities have ceased.
- Open space cut and fill areas.
- Steep slopes.
- Spoil piles.
- Vegetated swales.
- Landscape corridors.
- Stream banks.

INSTALLATION/APPLICATION CRITERIA

Type of vegetation, site and seedbed preparation, planting time, fertilization and water requirements should be considered for each application.

Grasses:

- Ground preparation: fertilize and mechanically stabilize the soil.
- Tolerant of short-term temperature extremes and waterlogged soil conditions.
- Appropriate soil conditions: shallow soil base, good drainage, slope 2:1 or flatter.
- Develop well and quickly from seeds.
- Mowing, irrigating, and fertilizing are vital for promoting vigorous grass growth.

Trees and Shrubs:

- Selection Criteria: vigor, species, size, shape & wildlife food source.
- Soil conditions: select species appropriate for soil,drainage & acidity.
- Other Factors: wind/exposure, temperature extremes, and irrigation needs.

Vines and Ground Covers:

- Ground preparation: lime and fertilizer preparation.
- Use proper seeding rates.
- Appropriate soil conditions: drainage, acidity, slopes.
- Generally avoid species requiring irrigation.

Targeted Pollutants

- ● Sediment
- ◒ Nutrients
- ◒ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ◒ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

ESC10

Best Management Practices

Additional Information — Seeding and Planting

Permanent seeding of grasses, sodding, and planting of trees, shrubs, vines and ground covers can provide long-term stabilization of soil. Permanent seeding and planting contributes to long-term site aesthetics and helps reduce erosion by reducing the velocity of runoff, allowing infiltration to occur, filtering sediments, and by holding soil particles in place.

Seeding and planting should be applied as soon as final grading is done to all graded and cleared areas of the construction site where plant cover is ultimately desired. For example, vegetation may be established along landscaped corridors and buffer zones where they may act as filter strips (see TC6 in Chapter 5 of the Municipal Handbook). Additionally, vegetated swales, steep and/or rocky slopes and stream banks can also serve as appropriate areas for seeding and plantings.

Installation/Application Criteria

Application of appropriate vegetation must consider: the seedbed or plantbed, proper seasonal planting times, water requirements fertilizer requirements and availability of the selected vegetation within the project's region. Permanent plantings during the construction stage of projects require careful coordination between the local agency inspectors, project managers, construction managers, and landscape contractor. Protocols for coordination and implementation procedures regarding site access, construction staging, and short- and long-term planting areas should be developed prior to the construction bid process. Where possible, these protocols should be established by and remain the responsibility of the site owner.

Because of the many available types of plants and ground covers and because site conditions and land use vary so widely within California, a set of general guidelines is included for installation/application of grasses, trees and shrubs, vines and ground covers. However, your local municipality, Soil Conservation Service, agricultural extention, or other resources should be consulted on appropriate species, planting requirements, and maintenance needs for your climate and soils.

Grasses

Grasses, depending on the type, provide short-term soil stabilization during construction or can serve as long- term/ permanent soil stabilization for disturbed areas. In general, grasses provide low maintenance to areas that have been cleared, graded and mechanically stabilized.

Selection:

The selection of the grass type is determined by the climate, irrigation, mowing frequency, maintenance effort and soil-bed conditions. Although grasses provide quick germination and rapid growth, they also have a shallow root system and are not as effective in stabilizing deep soils, where trees, shrubs and deep rooted ground covers may be more appropriate. Several grasses are adaptable to the various California climates. The figure at the end of these fact sheets shows appropriate grasses for regions within California. Blue grass is well adapted throughout California except for in the valley regions. The blue grass is found on dry, sandy soils that have good drainage. Bermuda grass, on the other hand is well adapted in the valley region where soils are dry, coarse and heavier. Specific seed mix and/or varieties for each site should be provided by an approved/qualified plant materials specialist.

ESC10

Caution should be exercised in the non-native vegetation because of impacts to native vegetation on adjacent lands. For example, species that may be planted at the construction site can quickly spread and compete with originally undisturbed vegetation such as the California Poppy and California buckwheat, both of which complete poorly with introduced grasses (e.g., planting wild oats is illegal in California). In addition to stabilizing disturbed soil, vines and ground covers can perform the following functions:

1. Provide attractive cover that does not need mowing.
2. Help to define traffic areas and control pedestrian movement.

Site Preparation:
Ground covers are plants that naturally grow very close together, causing severe competition for space nutrients and water. Soil for ground covers should be well prepared. The entire area should be spaded, disced, or rototilled to a depth of six to eight inches. Two to three inches of organic material, such as good topsoil or peat, should be spread over the entire area.

Planting:
The following steps will help ensure good plant growth.

1. Make the plantings following the contours of the land.
2. Dig the holes 1/3 larger than the plant root ball.
3. Know what depth to place the plants.
4. Use good topsoil or soil mixture with a lot of organic matter.
5. Fill hole 1/3 to 1/2 full, shake plants to settle soil among roots, then water.
6. Leave saucer-shaped depression around the plant to hold water.
7. Water thoroughly and regularly.
8. Space plants according to the type of plant and the extent of covering desired.

Materials:
There are many different species of vines and ground covers from which to choose, but care must be taken in their selection. It is essential to select planting materials suited to both the intended use and specific site characteristics. The plants discussed in this handbook are those which are known to be adapted to California, and commonly available from commercial nurseries. Additional information can be obtained from local nurserymen, landscape architects, and extension agents. An approved low water use plant list may be obtained from the State Department of Water Resources or the Soils Conservation Service.

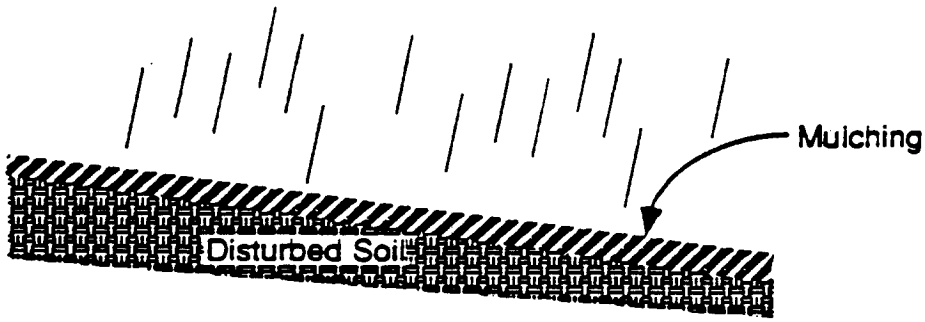
Requirements
Maintenance

General requirements include:

- Grass maintenance should be minimal to none. Irrigation and regular fertilizing may be required for some types of grasses. Mowing is only required in areas where aesthetics or fire hazards are a concern.
- Young trees should receive an inch of water each week for the first two years after planting. The tree should be watered deeply, but not more often than once per week.
- Transplanted trees should be fertilized on an annual basis.
- Proper pruning, watering, and application of fertilizer is necessary to maintain healthy and vigorous shrubs. A heavy layer of mulch applied around the shrubs reduces weeds and retains moisture.
- Trim old growth as needed to improve the appearance of ground covers. Most covers need once-a-year trimming to promote growth.

ESC10

BMP: MULCHING



Objectives

- *Housekeeping Practices*
- *Contain Waste*
- *Minimize Disturbed Areas*
- ***Stabilize Disturbed Areas***
- ***Protect Slopes/Channels***
- *Control Site Perimeter*
- *Control Internal Erosion*

GENERAL DESCRIPTION

Mulching is used to temporarily and permanently stabilize cleared or freshly seeded areas. Types of mulches include organic materials, straw, wood chips, bark or other wood fibers, decomposed granite, and gravel.

SUITABLE APPLICATIONS

- Temporary stabilization of freshly seeded and planted areas.
- Temporary stabilization during periods unsuitable for growing vegetation.
- Temporary stabilization of areas that cannot be seeded or planted (e.g., insufficient rain, steep slope).
- Mulches such as gravel and decomposed soils may be used as post-construction BMPs, particularly in arid regions.

INSTALLATION/APPLICATION CRITERIA

Mulch prevents erosion by protecting the soil surface and fostering growth of new seedings that do not stabilize by themselves.

- May be used with netting to supplement soil stabilization.
- Apply to planting areas where slopes are 2:1 or greater.
- Binders may be required for steep areas, or if wind and runoff is a problem.
- Type of mulch, binders, and application rates should be recommended by manufacturer/contractor.

REQUIREMENTS

- Maintenance
  - Must be inspected weekly and after rain for damage or deterioration.
- Cost: Average annual cost for installation and maintenance (3-4 month useful life, source: EPA, 1992)
  - Straw Mulch: $7,500 per acre.
  - Wood Fiber Mulch: $3,500 per acre.
  - Jute Netting: $12,500 per acre.

LIMITATIONS

- Wood fiber mulches should be used only in areas with over 20 inches annual precipitation.
- Organic mulches are not permanent erosion control measures.
- Mulches tend to lower the soil surface temperature, and may delay germination of some seeds.
- Permanent mulches for arid regions should include gravel and decomposed soils.

Targeted Pollutants

- ● *Sediment*
- ◒ *Nutrients*
- ○ *Toxic Materials*
- ○ *Oil & Grease*
- ○ *Floatable Materials*
- ○ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ◒ *Capital Costs*
- ◒ *O&M Costs*
- ◒ *Maintenance*
- ○ *Training*
- ● *Suitability for Slopes >5%*

● *High* ○ *Low*

ESC11

Best Management Practices

Additional Information — Mulching

Preparations/Methods and Equipment

Straw Mulch: Should be applied in an even, uniform manner, either by hand or by mulch blowing equipment. Straw mulches must be anchored to prevent the mulch from being blown or washed off the site. Anchoring is achieved in two ways:

- Crimping: The mulch is anchored by running a heavy disc with flat, dull, serrated, closely-spaced blades over the mulched soil. Effective crimping embeds the mulch about 2 inches into the soil without completely covering it. The disc should be run once or twice across the soil. About 2 1/2 tons of straw mulch per acre should be applied if the mulch is anchored by crimping.
- Tacking: Achieved using a emulsified asphalt or binder either independently or followed by crimping. If tacked, straw mulch may be applied at a rate of 1 3/4 ton per acre, and tacked with emulsified asphalt at a rate of 500 gallons per acre.

Wood Fiber Mulch: Typically applied with a hydroseeder at a rate of about 1000 to 1500 pounds per acre, or as a slurry consisting of at least 150 pounds of binder, 400 pounds of wood fiber mulch, and 200 gallons of water per acre.

Requirements

Maintenance: Mulched areas require frequent inspection for damage and deterioration. Requirements will vary greatly based on the type of mulch used and the type of vegetation to be established. Vegetative mulches are usually not intended to be permanent; but are extended only as a base for re-seeding or re-vegetation. Where a permanent anchor for vegetation is required, along steep slopes or areas of higher velocity flows, then a geotextile mat or net is recommended (see ESC20).

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, September 1992.

Controlling Erosion of Construction Sites, U.S. Department of Agriculture, Soil Conservation Service, Agriculture Information # 347.

"Draft - Sedimentation and Erosion Control, An Inventory of Current Practices", U.S.E.P.A., April, 1990.

"Environmental Criteria Manual", City of Austin, Texas.

Guides for Erosion & Sediment Control in California, USDA Soils Conservation Service - January 1991.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, June 1981.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April, 1992.

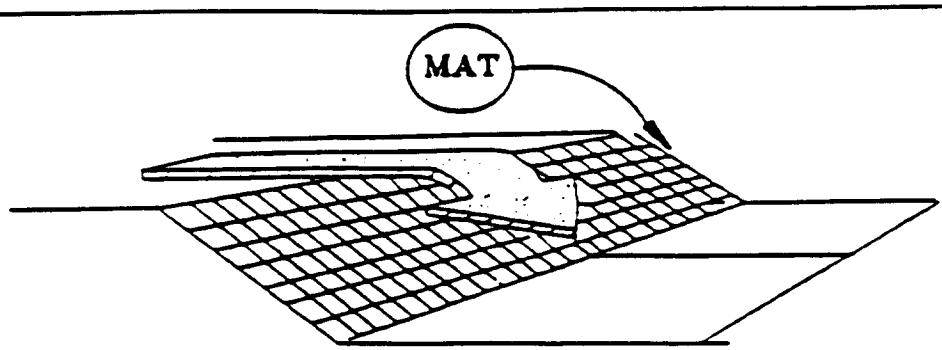
Soil Erosion by Water, U.S. Department of Agriculture, Soil Conservation District, Agriculture Information Bulletin #513.

Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC11

BMP: GEOTEXTILES AND MATS



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- **Stabilize Disturbed Areas**
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

Mattings made of natural or synthetic material which are used to temporarily or permanently stabilize soil.

SUITABLE APPLICATIONS

Typically suited for post-construction site stabilization, but may be used for temporary stabilization of highly erosive soils.

- Channels and streams.
- Steep slopes.

INSTALLATION/APPLICATION CRITERIA

Mattings may be applied to disturbed soils and where existing vegetation has been removed. The following organic matting materials provide temporary protection until permanent vegetation is established, or when seasonal circumstances dictate the need for temporary stabilization until weather or construction delays are resolved.

- Jute mattings.
- Straw mattings.

The following synthetic mattings may be used for either temporary or post-construction stabilization, both with and without vegetation

- Excelsior matting.
- Glass fiber matting.
- Staples.
- Mulch nettings.

REQUIREMENTS

- Maintenance
  - Inspect monthly and after significant rainfall.
  - Re-anchor loosened matting and replace missing matting and staples as required.
- Cost
  - Relatively high compared to other BMPs.

LIMITATIONS

- Mattings are more costly than other BMP practices, limiting their use to areas where other BMPs are ineffective (e.g., channels, steep slopes).
- May delay seed germination, due to reduction in soil temperature.
- Installation requires experienced contractor to ensure soil stabilization and erosion protection.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ● Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

● High ○ Low

ESC20

Best Management Practices

Additional Information — Geotextiles and Mats

Site Preparation: After the site has been shaped and graded to the approved design, prepare a friable seed bed relatively free from clods and rocks more than 1 inches in diameter and any foreign material that will prevent contact of the protective mat with the soil surface.

Planting: Fertilize and seed in accordance with seeding specifications or other types of landscaping plans. When using jute matting on a seeded area, apply approximately half the seed before laying the mat and the remainder after laying the mat. The protective matting can be laid over areas where grass has been planted and the seedlings have emerged. Where vines or other ground covers are to be planted, lay the protective matting first and then plant through matting according to design of planting.

Erosion Stops: Erosion stops are made of glass fiber strips, excelsior matting strips or tight-folded jute matting blanket or strips for use on steep, highly erodible watercourses. The stops are placed in narrow trenches six to twelve inches deep across the channel and left flush with the soil surface. They are to cover the full cross section of designed flow.

Laying and Securing Matting: Before laying the matting, all erosion stops should be installed and the friable seed bed made free from clods, rocks, and roots. The surface upon which the separation fabric will be placed should be compacted and finished according to the requirements of the manufacturer's recommendations.

Most matting comes with the manufacturer's recommendations for installation. Most channels will require multiple widths of matting, and the matting should be unrolled starting at the upper end of the channel, allowing a four inch overlap of mattings along the center of the channel. To secure, bury the top ends of the matting in a narrow trench, a minimum of six inches deep. Backfill trench and tamp firmly to conform to channel cross section. Secure with a row of staples about four inches down slope from the trench with staples twelve inches apart.

Where matting crosses erosion stops, reinforce with a double row of staples at six inch spacing, using a staggered pattern on either side of the erosion stop. When the matting is overlapped, the discharge end of the matting liner should be similarly secured with a double row of staples.

Mechanical or manual laydown equipment should be capable of handling full rolls of fabric, and laying the fabric smoothly, without wrinkles or folds. The equipment should meet the fabric manufacturer's recommendations or equivalent standards.

Final Check: Check the following after the matting is installed:

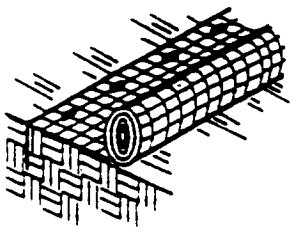
- Make sure matting is uniformly in contact with the soil.
- All lap joints are secure.
- All staples are flush with the ground.
- All disturbed areas seeded.

Limitations

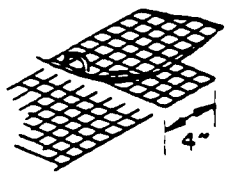
Properly installed mattings provide excellent erosion control but do so at relatively high cost. This high cost typically limits the use of mattings to areas of concentrated channel flow and steep slopes.

Installation is critical and requires experienced contractors. The contractor should install the matting material in such a manner that continuous contact between the material and the soil occurs, otherwise the material will not stabilize the soil and erosion will occur beneath the material. Ultraviolet protection may be required on some geotextiles. Matting strengths and uses vary; the manufacturer's specifications should be followed.

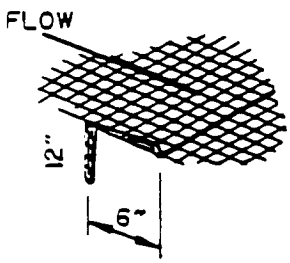
ESC20



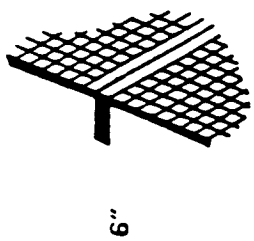
ANCHOR SLOT: BURY THE UP-CHANNEL END OF THE NET IN A 12" DEEP TRENCH. TAMP THE SOIL FIRMLY. STAPLE AT 12" INTERVALS ACROSS THE NET.



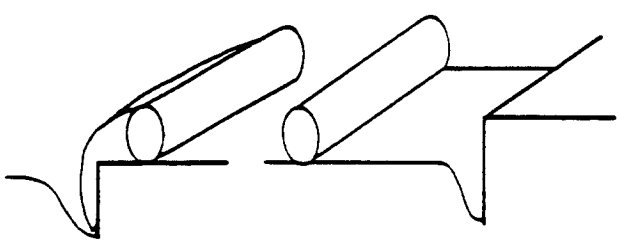
OVERLAP: OVERLAP EDGES OF THE STRIPS AT LEAST 4". STAPLE EVERY 12" DOWN THE CENTER OF THE STRIP.



JOINING STRIPS: INSERT THE NEW ROLL OR NET IN A TRENCH, AS WITH THE ANCHOR SLOT. OVERLAP THE UP-CHANNEL END OF THE PREVIOUS ROLL 18" AND TURN THE END OF THE PREVIOUS ROLL JUST BELOW THE ANCHOR SLOT, LEAVING 6" OVERLAP.



CHECK SLOTS: ON ERODIBLE SOILS OR STEEP SLOPES, CHECK SLOTS SHOULD BE MADE EVERY 15 FEET. INSERT A FOLD OF THE NET INTO A 6" TRENCH AND TRAMP FIRMLY. STAPLE AT 12" INTERVALS ACROSS THE NET. LAY THE NET SMOOTHLY ON THE SURFACE OF THE SOIL - DO NOT STRETCH THE NET, AND DO NOT ALLOW WRINKLES.

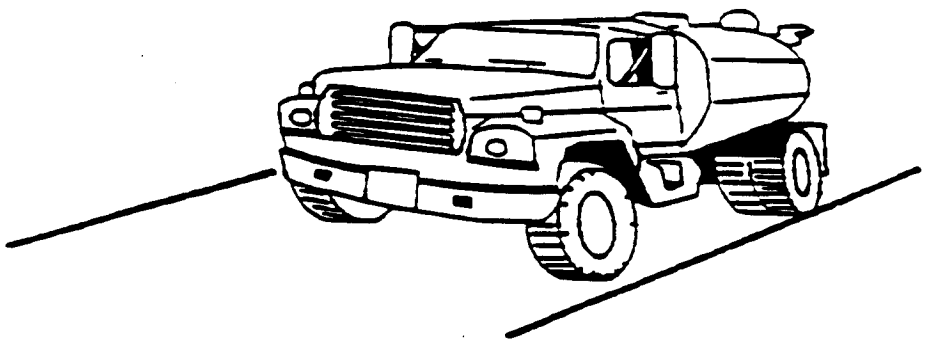


ANCHORING ENDS AT STRUCTURES:
PLACE THE END OF THE NET IN A 12" SLOT ON THE UP-CHANNEL SIDE OF THE STRUCTURE.
FILL THE TRENCH AND TAMP FIRMLY.
ROLL THE NET UP THE CHANNEL.
PLACE STAPLES AT 12" INTERVALS ALONG THE ANCHOR END OF THE NET.

INSTALLATION OF NETTING AND MATTING

ESC20

BMP: DUST CONTROLS



GENERAL DESCRIPTION

Dust control measures are used to stabilize soil from wind erosion, and reduce dust generated by construction activities.

SUITABLE APPLICATIONS

- Clearing and grading activities.
- Construction vehicle traffic on unpaved roads.
- Drilling and blasting activities.
- Sediment tracking onto paved roads.
- Soil and debris storage piles.
- Batch drop from front end loaders.
- Areas with unstabilized soil.
- Final grading/site stabilization usually is sufficient to control post-construction dust sources.

INSTALLATION/APPLICATION CRITERIA

- Schedule construction activities to minimize exposed area (See ESC 1).
- Quickly stabilize exposed soils using vegetation, mulching, spray-on adhesives, calcium chloride, sprinkling, and stone/gravel layering (See ESC 10 and 11).
- Identify and stabilize key access points prior to commencement of construction (See ESC 24).
- Minimizing the impact of dust by anticipating the direction of prevailing winds.
- Direct most construction traffic to stabilized roadways within the project site (See ESC 23).

REQUIREMENTS

- Maintenance
  - Most dust control measures require frequent, often daily, attention.
- Cost
  - Installation costs for water/chemical dust suppression are low, but annual costs may be quite high since these measures are effective for only a few hours to a few days.

LIMITATIONS

- Watering prevents dust only for a short period and should be applied daily (or more often) to be effective.
- Overwatering may cause erosion.
- Oil should not be used for dust control because the oil may migrate into drainageway and/or seep into the soil.
- Certain chemically-treated subgrades may make soil water repellant, increasing runoff.

Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

ESC21

Best Management Practices

Additional Information — Dust Controls

In addition, there are many other BMPs identified in this handbook that provide dust control including:

- Seeding and Plantings (ESC 10)
- Mulching (ESC 11)
- Construction Road Stabilization (ESC 23)
- Stabilized Construction Entrances (ESC 24)

Limitations

- Oil treated subgrades should not be used because the oil may migrate into drainageways and/or seep into the soil.
- Chemically treated subgrades may make the soil water repellant, interfering with long-term infiltration, and the vegetation/re-vegetation of the site. Some chemical dust suppressants may be subject to freezing and may contain solvents and should be handled properly.
- Asphalt, as a mulch tack or chemical mulch, requires a 24 hour curing time to avoid adherence to equipment, worker shoes, etc. Application should be limited because asphalt surfacing may eventually migrate into the drainage system.
- In compacted areas, watering and other liquid dust control measures may wash sediment or other constituents into the drainage system.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

California Air Pollution Control Laws, California Air Resources Board, 1992.

CalTrans, Standard Specifications, Sections 10, "Dust Control"; Section 17, "Watering"; and Section 18, "Dust Palliative".

Prospects for Attaining the State Ambient Air Quality Standards for Suspended Particulate Matter (PM10), Visibility Reducing Particles, Sulfates, Lead, and Hydrogen Sulfide, California Air Resources Board, April 1991.

Sacramento County, Winterization Ordinance & Dust Control Ordinance (example).

USDA Soil Conservation Service, "Guides for Erosion and Sediment Control".

ESC21

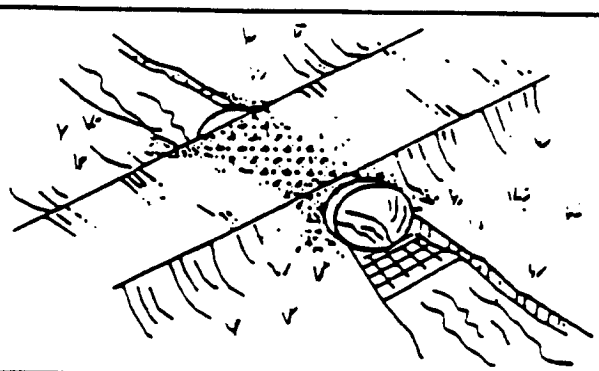
TABLE ESC 21.2 COMMONLY USED CHEMICALS FOR DUST CONTROL

	SALTS	ORGANIC, NON PETROLEUM-BASED	PETROLEUM BASED PRODUCTS[1]
CHEMICAL TYPES	• Calcium Chloride[2] • Magnesium Chloride • Natural Brines	• Calcium Lignosulfonate • Sodium Lignosulfonate • Ammonium Lignosulfonate	• Bunker Oil • Asphalt Primer • Emulsified Asphalt
LIMITATIONS	Can lose effectiveness in dry periods with low humidity. Leaches from road in heavy rain Not recommended for gravel road surfaces with low fines. Recommended 10-20% fines.	Not affected by dry weather and low humidity. Leached from road in heavy rain if not sufficiently cured. Best performance on gravel roads with high surface fines (10-30%) and dense compact surface with loose gravel.	Generally effective regardless of climatic conditions may pothole in wet weather. Best performance on gravel roads with 5-10% fines.
COMMENTS	Calcium Chloride is popular. May become slippery when wet on gravel surfaces with high fines.	Ineffective on gravel surfaces low in fines. May become slippery when wet on gravel surfaces with high fines content.	Creates a hardened crust.

[1] Motor oils and oil treatments are not recommended due to adverse effects on plant life and groundwater.

[2] Not recommended due to adverse effects on plant life.

BMP: TEMPORARY STREAM CROSSING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

A temporary access stream crossing is a temporary culvert, ford or bridge placed across a waterway to provide access for construction purposes for a period of less than one year. Temporary access crossings are not intended to be used to maintain traffic for the general public.

SUITABLE APPLICATIONS

Temporary stream crossings should be installed at all designated crossings of perennial and intermittent streams on the construction site, as well as for dry channels which may be significantly eroded by construction traffic.

INSTALLATION/APPLICATION CRITERIA

Requires knowledge of stream flows and soil strength and should be designed under the direction of a California registered engineer with knowledge of both hydraulics and construction loading requirements for structures.

REQUIREMENTS

- Maintenance
  - Inspect weekly and after each significant rainfall, including assessment of foundations.
  - Periodically remove silt from crossings.
  - Replace lost aggregate from inlets and outlets of culverts.
- Cost
  - CalTrans Construction Cost Index for temporary bridge crossing is $45-$95 per square feet.

LIMITATIONS

- May be an expensive for a temporary improvement.
- Requires other BMPs to minimize soil disturbance during installation and removal.
- Fords should only be used in dry weather.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

ESC22

Best Management Practices

Additional Information — Temporary Stream Crossing

- May be expensive temporary cost
- Increased soil disturbance upon installation and removal
- Temporary culverts need regular maintenance and can cause erosion if the culvert becomes clogged.
- A temporary ford offers little if any erosion control in flowing streams and can often make erosion worse. Fords should only be used in the dry season on dry streams.

Construction in waterways is subject to additional permit requirements. Contact the local municipal storm water agency for additional information.

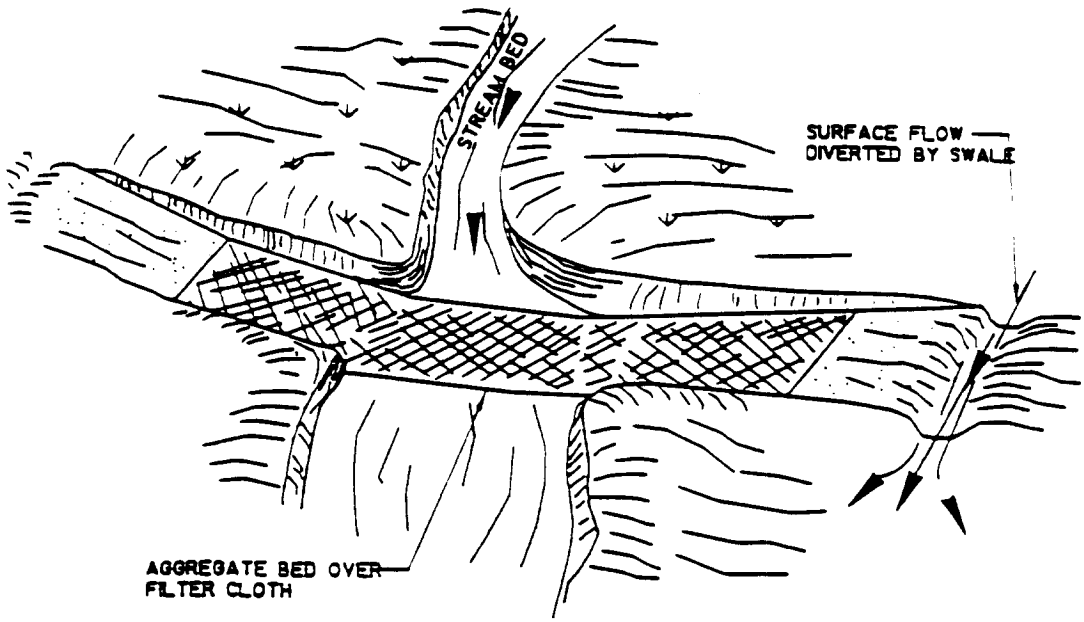
REFERENCES

Bank and Shore Protection, CalTrans - November 1970.

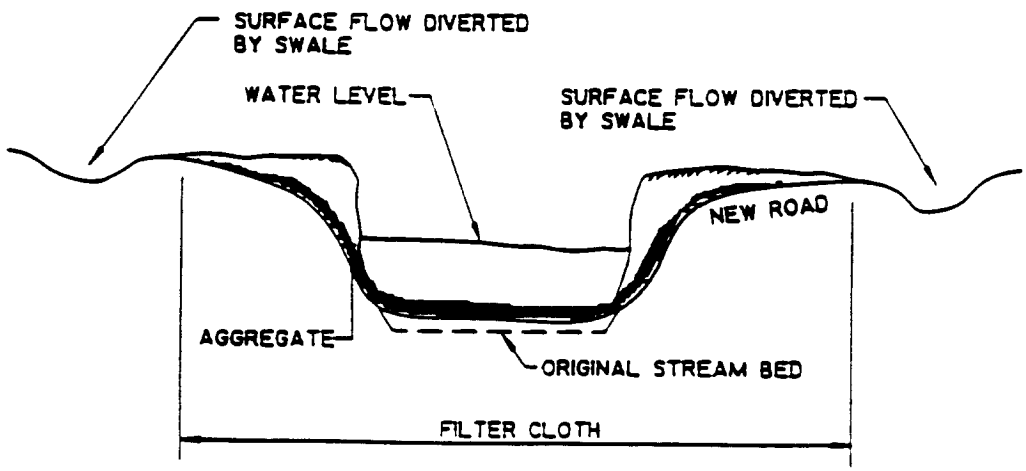
Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September, 1992.

ESC22

Additional Information — Temporary Stream Crossing



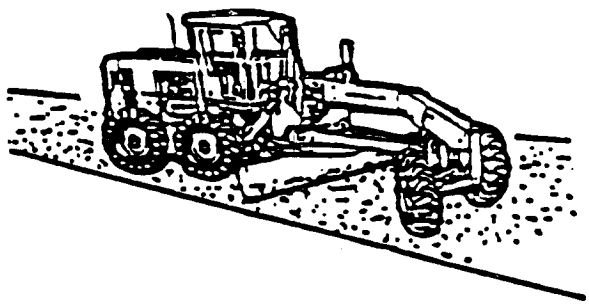
AGGREGATE APPROACH
5 : 1 MAXIMUM. SLOPE ON ROAD



TEMPORARY ACCESS FORD

ESC22

BMP: CONSTRUCTION ROAD STABILIZATION



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

Access roads, subdivision roads, parking areas, and other on-site vehicle transportation routes should be stabilized immediately after grading and frequently maintained to prevent erosion and control dust.

SUITABLE APPLICATIONS

- Temporary construction traffic.
- Phased construction projects and off-site road access.
- Detour roads.
- Construction during wet weather.

INSTALLATION/APPLICATION CRITERIA

- Road should follow topographic contours to reduce erosion of the roadway.
- The roadway slope should not exceed 15 percent.
- Gravel roads should be a minimum 4-inch thick, 2-3 inch coarse aggregate base applied immediately after grading, or as recommended by soils engineer.
- Chemical stabilizers or water are usually required on gravel or dirt roads to prevent dust (see Dust Control ESC 21).

REQUIREMENTS

- Maintenance
  - Periodically apply additional aggregate on gravel roads.
  - Active dirt construction roads are commonly watered three or more times per day during the dry season.
  - Inspect weekly, and after each rain.
  - Repair any eroded areas immediately.
- Cost
  - Gravel construction roads are moderately expensive, but cost is often balanced by reductions in construction delay.
  - No additional costs for dust control on construction roads should be required above that needed to meet local air quality requirements.

LIMITATIONS

- The roadway must be removed or paved when construction is complete.
- Certain chemical stabilization methods may cause storm water or soil pollution and should not be used (see Dust Control ESC 21).
- Management of construction traffic is subject to air quality control measures. Contact the local air quality management agency.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

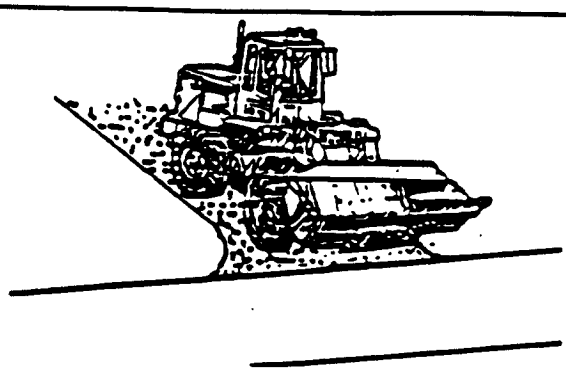
- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

ESC23

Best Management Practices

BMP: STABILIZED CONSTRUCTION ENTRANCE



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

The construction entrance practice is a stabilized pad of aggregate underlain with filter cloth located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk or parking area. Stabalizing the construction entrance significantly reduces the amount of sediment (dust, mud) tracked off-site, especially if a washrack incorporated for removing caked on sediment.

SUITABLE APPLICATIONS

- All points of construction ingress and egress.
- Unpaved areas where sediment tracking occurs from site onto paved roads.

INSTALLATION/APPLICATION CRITERIA

- Construct on level ground where possible.
- Stones should be 1-3 inches.
- Minimum depth of stones should be 6 inches or as recommended by soils engineer.
- Length should be 50-foot minimum, and 30-foot minimum width.
- Provide ample turning radii as part of entrance.

REQUIREMENTS

- Maintenance
  - Inspect monthly and after each rainfall.
  - Replace gravel material when surface voids are visible.
  - Remove all sediment deposited on paved roadways within 24 hours.
  - Remove gravel and filter fabric at completion of construction
- Cost: Average annual cost for installation and maintenance (Source: EPA, 1992)
  - Without Wash Rock: $1500 each.
  - With Wash Rock: $2200 each.

LIMITATIONS

- Requires periodic top dressing with additional stones.
- Should be used in conjunction with street sweeping on adjacent public right-of-way.

Targeted Pollutants

- ◒ Sediment
- ◒ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

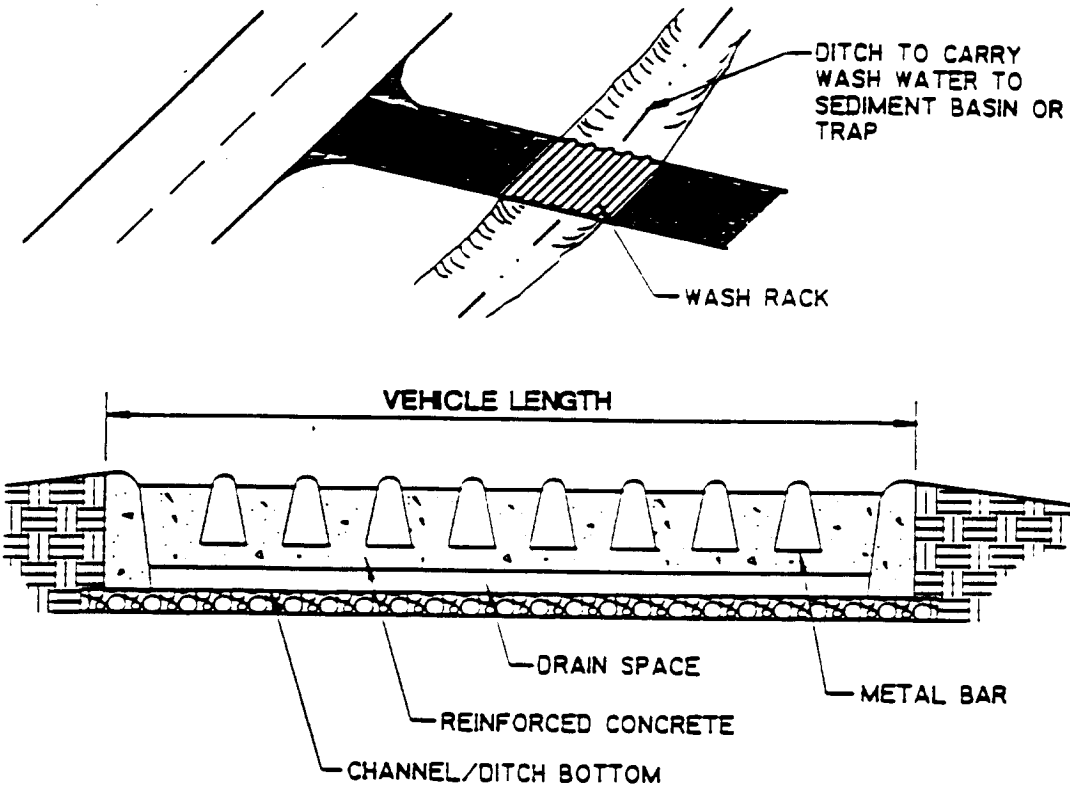
- ◒ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

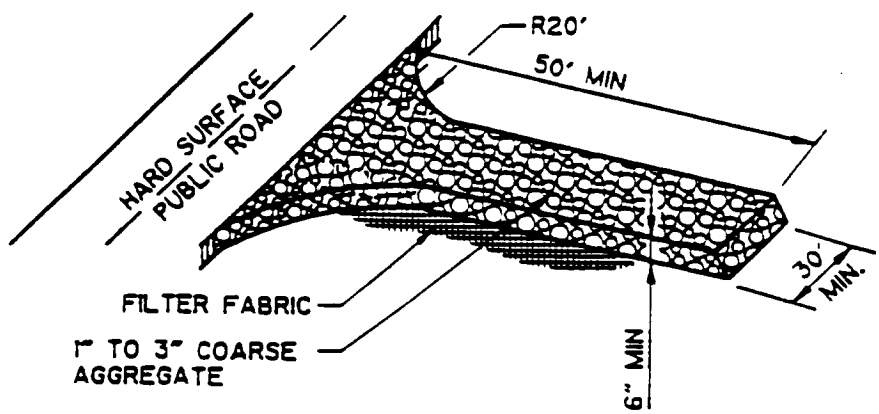
ESC24

Best Management Practices

Additional Information — Stabilized Construction Entrance



WASH RACK (SCHEMATIC)

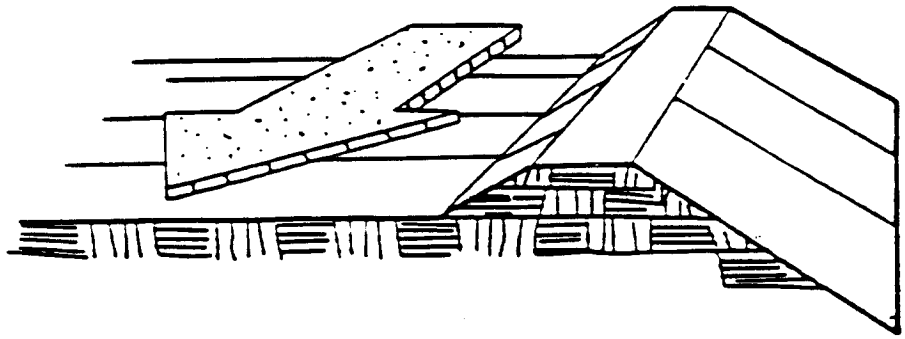


STABILIZED CONSTRUCTION ENTRANCE

ESC24

R0001003

BMP: EARTH DIKE



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

The temporary earth dike is a temporary berm or ridge of compacted soil, used to divert runoff or channel water to a desired location.

SUITABLE APPLICATIONS

Earth dikes are typically used to divert concentrated runoff through disturbed areas into another BMP (e.g., sediment basins), to divert runoff away from disturbed or unstable slopes, to divert runoff from off-site and undisturbed areas around disturbed areas, and as a containment for construction materials and wastes. The dikes should remain in place until the disturbed areas are permanently stabilized. The dikes must be on-site and must safely convey anticipated flood flows.

INSTALLATION/APPLICATION CRITERIA

- All dikes should be compacted by earth-moving equipment.
- All dikes should have positive drainage to a stabilized outlet.
- Top width may be wider and side slopes may be flatter at crossings for construction traffic.
- Dikes should direct sediment-laden runoff into a sediment trapping device.
- Dikes should be stabilized with vegetation, chemicals, or physical devices.

REQUIREMENTS

- Maintenance
  - Inspect periodically and after every significant rainfall; repair as necessary.
- Cost
  - Cost ranges from $15 to $55 per foot for both earthwork and stabilization and depends on availability of material, site location, and access.

LIMITATIONS

Dikes should not be used for drainage areas greater than 10 acres, or along slopes greater than 10 percent. For larger areas more permanent drainage structures should be built. All drainage structures should be built in compliance with local municipal requirements.

- Earth dikes may create more disturbed area on site and become barriers to construction equipment.
- Earth dikes must be stabilized immediately, which adds cost and maintenance concerns.
- Diverted storm water may cause downstream flood damage.
- Dikes should not be constructed of soils which may be easily eroded.
- Regrading the site to remove the dike may add additional cost.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ◒ Oil & Grease
- ○ Floatable Materials
- ◒ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

ESC30

Best Management Practices

Additional Information — Earth Dike

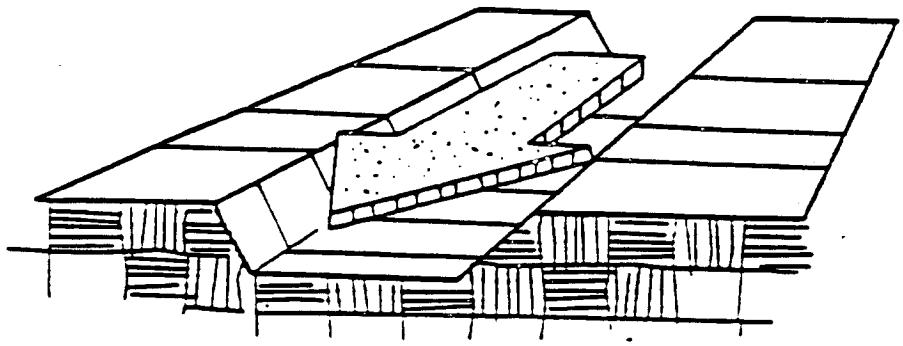
Erosion and Sediment Control Handbook. S.J. Goldman, K. Jackson, T.A. Bursetynsky, P.E., McGraw Hill Book Company.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, June 1981.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC30

BMP: TEMPORARY DRAINS AND SWALES



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- **Protect Slopes/Channels**
- **Control Site Perimeter**
- **Control Internal Erosion**

GENERAL DESCRIPTION

Temporary drains and swales are used to divert off-site runoff around the construction site, divert runoff from stabilized areas around disturbed areas, and direct runoff into sediment basins or traps.

SUITABLE APPLICATIONS

Temporary drains and swales are appropriate for diverting any upslope runoff around unstabilized or disturbed areas of the construction site:

- Prevent slope failures.
- Prevent damage to adjacent property.
- Prevents erosion and transport of sediments into water ways.
- Increases the potential for infiltration.
- Diverts sediment-laden runoff into sediment basins or traps.

INSTALLATION/APPLICATION CRITERIA

Temporary drainage swales will effectively convey runoff and avoid erosion if built properly:

- Size temporary drainage swales using local drainage design criteria.
- A permanent drainage channel must be designed by a professional engineer (see the local drainage design criteria for proper design).
- At a minimum, the drain/swale should conform to predevelopment drainage patterns and capacities.
- Construct the drain/swale with an uninterrupted, positive grade to a stabilized outlet.
- Provide erosion protection or energy dissipation measures if the flow out of the drain or swale can reach an erosive velocity.

REQUIREMENTS

- Maintenance
  - Inspect weekly and after each rain.
  - Repair any erosion immediately.
  - Remove sediment which builds up in the swale and restricts its flow capacity.
- Cost
  - The cost of a drainage swale increases with drainage area and slope. Typical. swales for controlling internal erosion are inexpensive.

LIMITATIONS

- Temporary drains and swales or any other diversion of runoff should not adversely impact upstream or downstream properties.
- Temporary drains and swales must conform to local floodplain management requirements.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

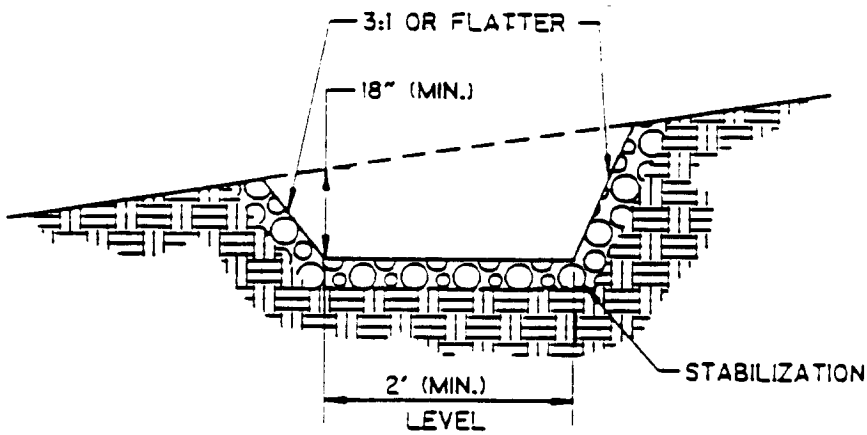
Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ◒ Suitability for Slopes >5%

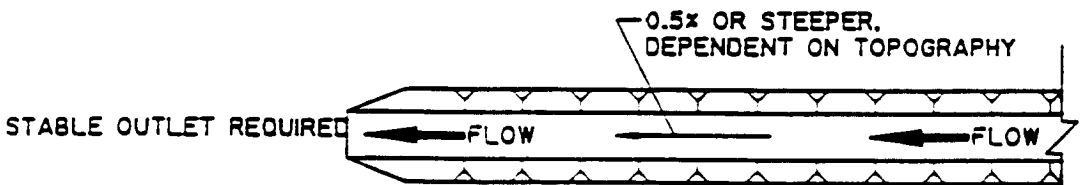
● High ○ Low

ESC31

Best Management Practices



CROSS SECTION

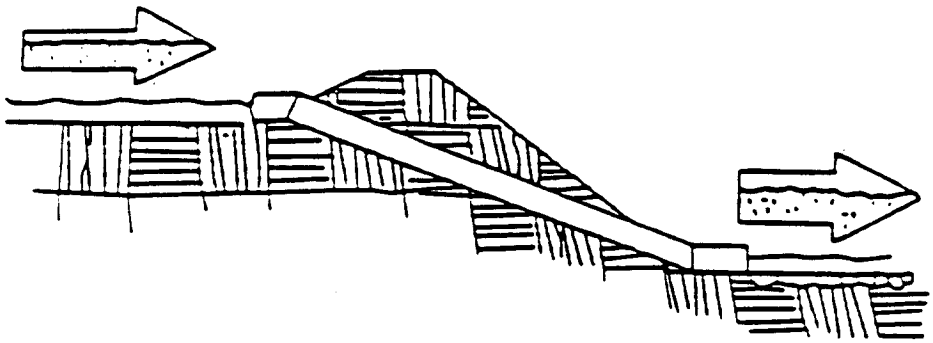


PLAN

TEMPORARY DRAINAGE SWALE

ESC31

BMP: SLOPE DRAIN



GENERAL DESCRIPTION

A temporary pipe or lined channel to drain the top of a slope to a stable discharge point at the bottom of a slope without causing erosion.

SUITABLE APPLICATIONS

- Where concentrated flow of surface runoff must be conveyed down a slope in order to prevent erosion.
- Drainage for top of slope diversion dikes or swales.
- Emergency spillway for a sediment basin.
- Drainage for top of cut/fill slopes where water can accumulate.

The types of slope drain can include:

- Pipe drops.
- Flexible downdrains.
- Sectional downdrains.
- Lined terrace drains.

INSTALLATION/APPLICATION CRITERIA

- Secure inlet and surround with dikes to prevent gully erosion. and anchor pipe to slope.
- Size to convey at least the peak of a 10-year, 24-hour storm (See local flood control agency for requirements).
- Stabilize outlet.

REQUIREMENTS

- Maintenance
  - Structure must be inspected regularly and after storms.
  - Inlet must be free of undercutting and no water should circumvent the entry.
  - Outlet should not produce erosion; velocity dissipators must be maintained.
  - Pipe anchors must be checked to ensure that the pipe remains anchored to the slope.
- Cost
  - CalTrans Cost Schedule gives regional cost ranges.

LIMITATIONS

- Maximum drainage area per slope drain is 5 acres. (For large areas use a paved chute, rock lined channel or additional pipes.)
- Clogged slope drains will force water around the pipe and cause slope erosion.
- Dissipation of high flow velocities at the pipe outlet is required to avoid downstream erosion.
- Failure can result in flooding and severe erosion.

Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

ESC32

Best Management Practices

Additional Information — Slope Drain

Design:
Unless specified by the local municipality, the capacity for temporary drains should be sufficient to handle the peak runoff from a 10-year, 24-hour rainfall event. The pipe size may be computed using the Rational Method or a method established by the local municipality. Higher flows must be safely stored or routed to prevent any offsite concentration of flow, and any erosion of the slope.

As a guide, temporary pipe slope drains should not be sized smaller than shown in the following table:

MINIMUM PIPE DIAMETER	MAXIMUM DRAINAGE AREA (ACRES)
12"	0.5
18"	1.5
21"	2.5
24"	3.5
30"	5.0

Permanent improvements must be designed and installed if the drainage area is greater than 5 acres.

The following additional design criteria should be considered:

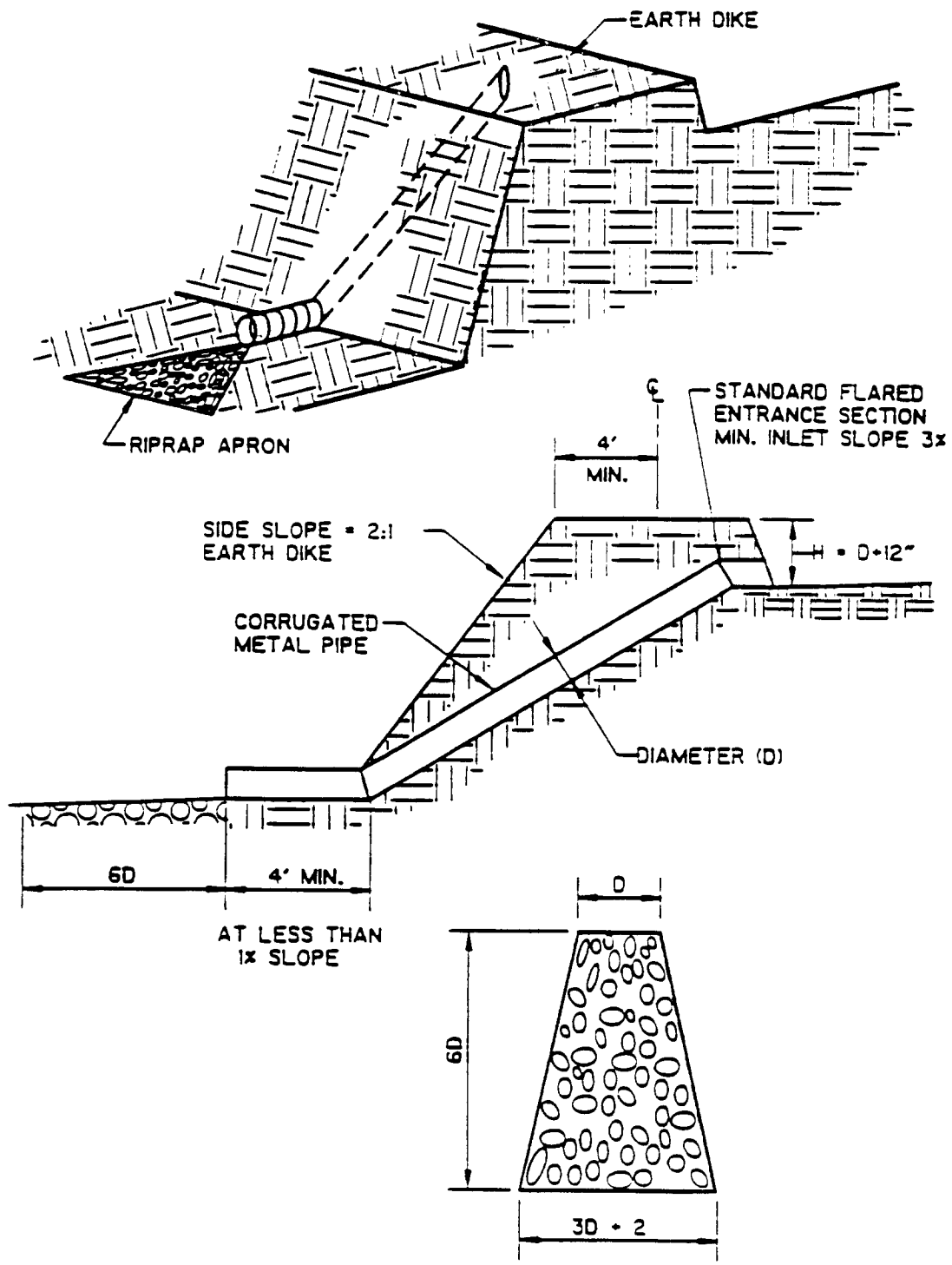
- Construct the pipe slope drain entrance of a standard flared end section with a minimum 6-inch metal toe plate to prevent runoff from undercutting the pipe inlet. The slope of the entrance is usually at least 3 percent.
- Thoroughly compact the soil around and under the pipe and entrance section.
- Securely fasten the slope drain sections together, have gasketed watertight fittings, and securely anchored into the soil.
- Secure the flared inlet section to the slope drain and have watertight connecting bands.
- Use interceptor dikes to direct runoff into a slope drain. The height of the dike should be at least 1 foot higher at all points than the top of the inlet pipe.
- If the pipe slope drain is conveying sediment-laden water, direct all flows into a sediment trap (ESC55) or sediment basin (ESC56).
- Unless the pipe directly enters a sediment trap/basin, stabilize the area below the outlet with a riprap apron.

Limitations
Installation is critical for effective use of the pipe slope drain to minimize potential gully erosion. Maximum drainage area per pipe slope drain is 5 acres. For larger areas use a paved chute, rock lined channel or additional pipes. (See the local municipality for drainage requirements)

- During large storms, pipe slope drains may become clogged or overcharged, forcing water around the pipe and causing extreme slope erosion.
- Structures for dissipation of high flow velocities at the pipe outlet must be constructed to avoid downstream erosion.
- Failure of this type of temporary structure may result in flooding and severe erosion.
- If the sectional downdrain is not sized correctly, the runoff can spill over the drain sides causing gully erosion, and potential failure of the structure.

ESC32

Additional Information — Slope Drain

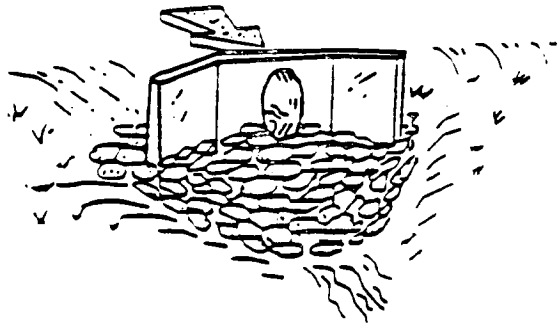


RIPRAP SHOULD CONSIST OF 6" DIAMETER STONE PLACED AS SHOWN AND SHOULD BE A MINIMUM OF 12" IN THICKNESS.

PIPE SLOPE DRAIN (RIGID)

ESC32

BMP: OUTLET PROTECTION



Objectives

- *Housekeeping Practices*
- *Contain Waste*
- *Minimize Disturbed Areas*
- *Stabilize Disturbed Areas*
- *Protect Slopes/Channels* (●)
- *Control Site Perimeter*
- *Control Internal Erosion*

GENERAL DESCRIPTION

Rock outlet protection is a physical device composed of rock, grouted riprap, or concrete rubble which is placed at the outlet of a pipe to prevent scour of the soil caused by high pipe flow velocities, and to absorb flow energy to produce non-erosive velocities.

SUITABLE APPLICATIONS

- Wherever discharge velocities and energies at the outlets of culverts, conduits or channels are sufficient to erode the next downstream reach.
- Rock outlet protection is best suited for temporary use during construction because it is usually less expensive and easier to install than concrete aprons or energy dissipators.
- A sediment trap below the pipe outlet is recommended if runoff is sediment laden.
- Permanent rock riprap protection should be designed and sized by the engineer as part of the culvert, conduit or channel design.
- Grouted riprap should be avoided in areas of freeze and thaw because the grout will break up.

INSTALLATION/APPLICATION CRITERIA

Rock outlet protection is effective when the rock is sized and placed properly. When this is accomplished, rock outlets do much to limit erosion at pipe outlets. Rock size should be increased for high velocity flows. General recommendations for rock size and length of outlet protection mat are presented in the additional information sheet. Best results are obtained when sound, durable, angular rock is used. CalTrans Standard Specifications or the local municipality can provide additional specifications for constructing outlet protection devices.

REQUIREMENTS

- Maintenance
  - Inspect after each significant rain for erosion and/or disruption of the rock, and repair immediately.
  - Grouted or wire-ued rock riprap can minimize maintenance requirements.
- Cost
  - CalTrans Cost Schedule gives regional cost ranges.

LIMITATIONS

- Large storms often wash away the rock outlet protection and leave the area susceptible to erosion.
- Sediment captured by the rock outlet protection may be difficult to remove without removing the rock.
- Outlet protection may negatively impact the channel habitat.

Targeted Pollutants

- ● *Sediment*
- ○ *Nutrients*
- ○ *Toxic Materials*
- ○ *Oil & Grease*
- ○ *Floatable Materials*
- ○ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

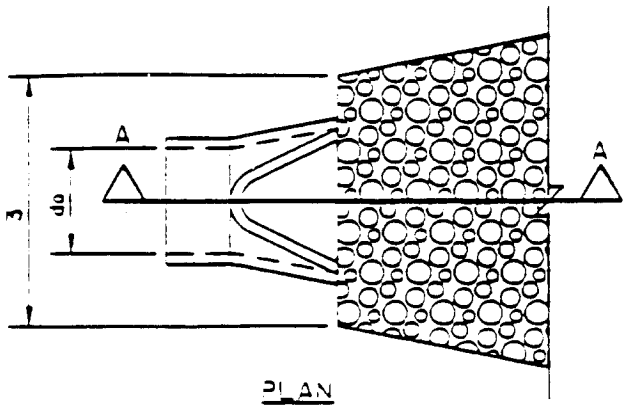
- ◒ *Capital Costs*
- ○ *O&M Costs*
- ◒ *Maintenance*
- ○ *Training*
- ○ *Suitability for Slopes >5%*

● *High* ○ *Low*

ESC40

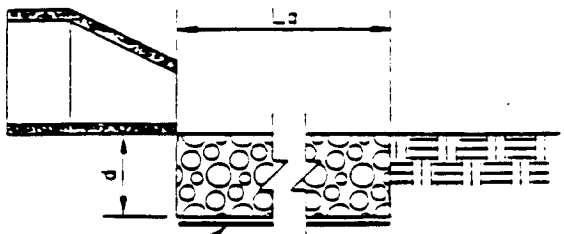
Best Management Practices

Additional Information — Outlet Protection



PLAN

La = LENGTH OF APRON
do = INSIDE PIPE DIAMETER
w = APRON WIDTH
c = APRON THICKNESS

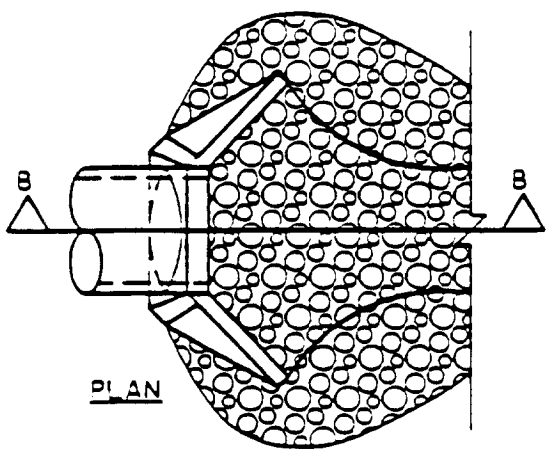


FILTER FABRIC — SECTION A-A

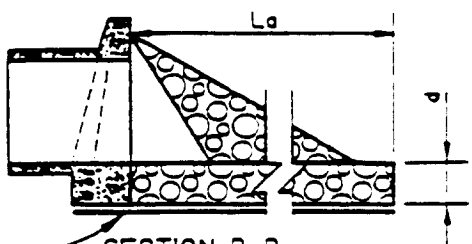
PIPE OUTLET TO FLAT AREA
WITH NO DEFINED CHANNEL

NOTES

1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, OR CONCRETE
2. PIPE DIAMETER, APRON DIMENSIONS, AND AVERAGE ROCK SIZE FOR RIPRAP ARE BASED ON THE DESIGN FLOW RATE AND VELOCITY. La AND ROCK SIZE MUST BE SET TO SLOW THE FLOW TO NON-EROSIVE VELOCITIES (e.g., LESS THAN 10 fps). SEE CALTRANS AND LOCAL AGENCY DESIGN CRITERIA FOR APPROPRIATE SIZING CRITERIA.
3. d = 1.5 TIMES THE MAXIMUM ROCK SIZE DIAMETER BUT NOT LESS THAN 6 INCHES.



PLAN



FILTER FABRIC — SECTION B-B

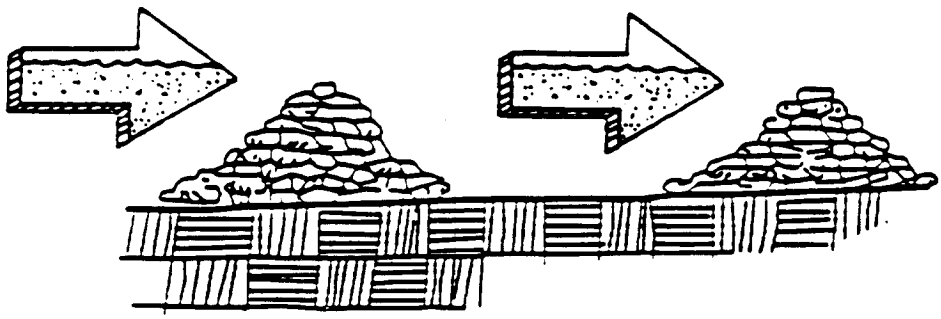
PIPE OUTLET TO WELL-DEFINED CHANNEL

PIPE OUTLET CONDITIONS

ESC40

R0001012

BMP: CHECK DAMS



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- **Protect Slopes/Channels**
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

Small temporary dams constructed across a swale or drainage ditch. Check dams reduce the velocity of concentrated stormwater flows, thereby reducing erosion of the swale or ditch, and promoting sedimentation behind the dam. If properly anchored, brush or rock filter berms (ESC53) may be used for check dams.

SUITABLE APPLICATIONS

- Used to prevent erosion by reducing the velocity of channel flow in small intermittent channels and temporary swales.
- May also promote sedimentation behind the dam, but should not be considered to be a primary sediment trapping device because subsequent storms will scour and resuspend much of the trapped sediment.

INSTALLATION/APPLICATION CRITERIA

- Check dams should be placed at a distance and height to allow small pools to form between each one.
- Backwater from a downstream check dam should reach the toe of the upstream check dam.
- Major floods (2 year storm or larger) should safely flow over the check dam without an increase in upstream flooding or destruction of the checkdam.
- Primarily used in small, steep channels where velocities exceed 2 fps.
- Used in steep terrain where velocity reduction is required.
- A deep sump may be provided immediately upstream of the check dam to capture excessive sediment.
- Check dams may be built of rocks or logs, which are secured against damage during significant floods.

REQUIREMENTS

- Maintenance
  - Inspect for sediment buildup behind the check dam and signs of erosion around the check dam after each rain.
  - Remove accumulated sediment whenever it reaches one-half the sump depth.
- Cost
  - See CalTrans Cost Schedule for regional cost data.

LIMITATIONS

- Use only in small open channels which drain 10 acres of less.
- Not to be used in live streams.
- Do not install in lined or vegetated channels.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

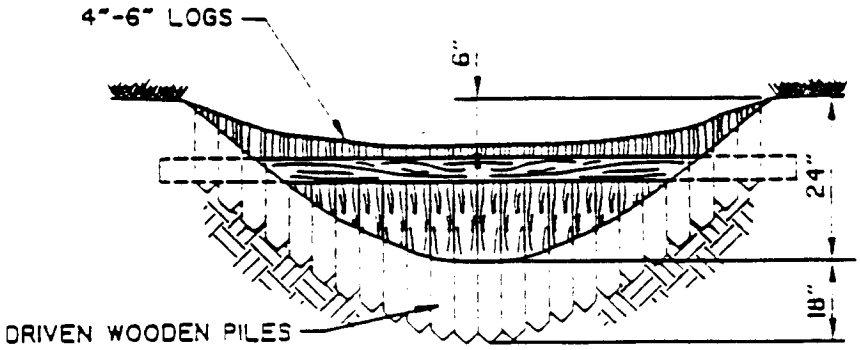
- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

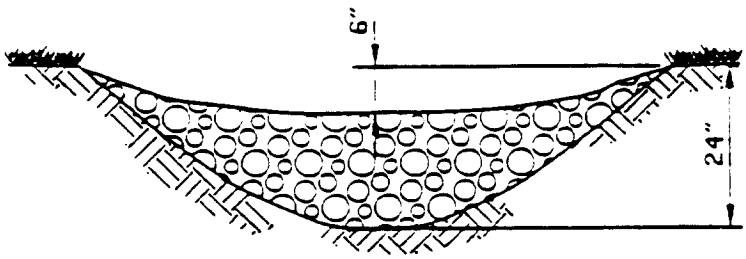
ESC41

Best Management Practices

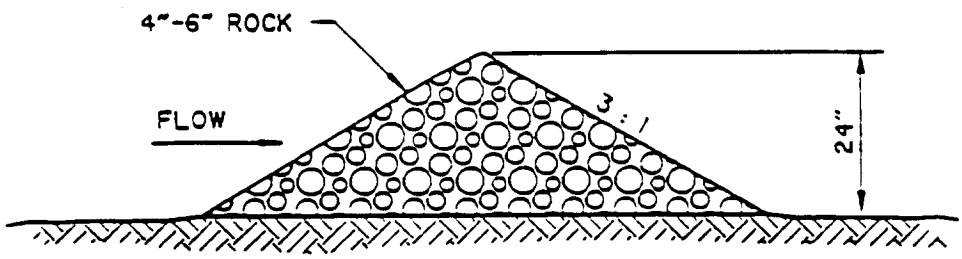
Additional Information — Check Dams



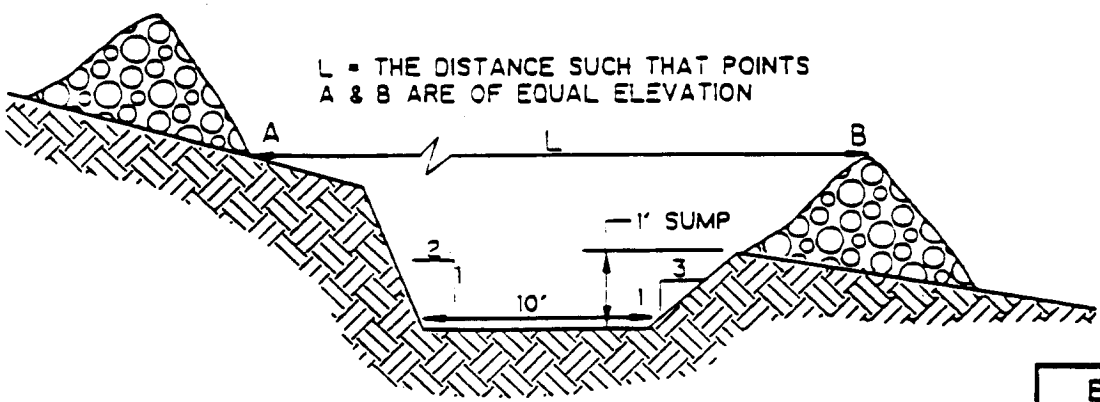
LOG CHECK DAM



ROCK CHECK DAM



ROCK CHECK DAM CROSS-SECTION

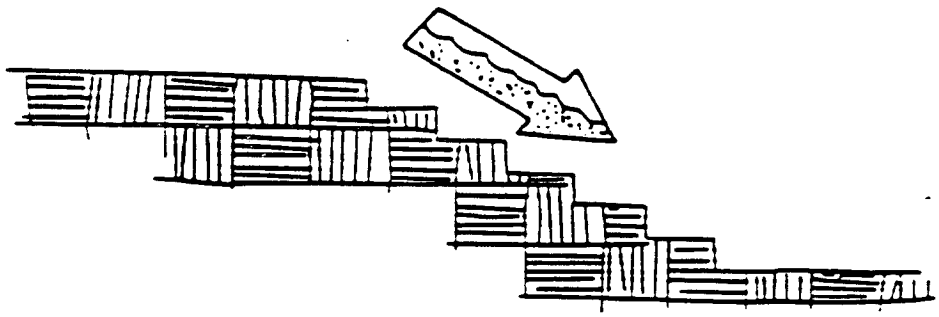


SPACING BETWEEN CHECK DAMS

ESC41

R0001014

BMP: SLOPE ROUGHENING/TERRACING



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- **Stabilize Disturbed Areas** ●
- **Protect Slopes/Channels** ●
- Control Site Perimeter
- Control Internal Erosion

GENERAL DEFINITION

Slope roughening/terracing creates microclimates for establishing vegetation, reduces runoff velocity, increases infiltration, and provides small depressions for trapping sediment.

SUITABLE APPLICATIONS

- Any cleared area prior to seeding and planting.
- Required for cleared, erodible slopes steeper than 3:1 and higher than 5 feet prior to seeding and planting.

INSTALLATION/APPLICATION CRITERIA

Slope roughening/terracing is performed in several ways:

- Stair-step grading.
- Grooving.
- Furrowing.
- Tracking.
- Rough grading.
- No grading.

REQUIREMENTS

- Maintenance
  - Inspect roughened slopes weekly and after rainfall for excessive erosion.
  - Revegetate as quickly as possible.
- Cost (source: EPA, 1992)
  - Surface Roughening: Performed at no (e.g., rough grading) to low (e.g., tracking) cost.
  - Terracing: Average annual cost is $4 per linear foot (2 year useful life).

LIMITATIONS

- Roughening is of limited effectiveness on its own, but is used to speed revegetation.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

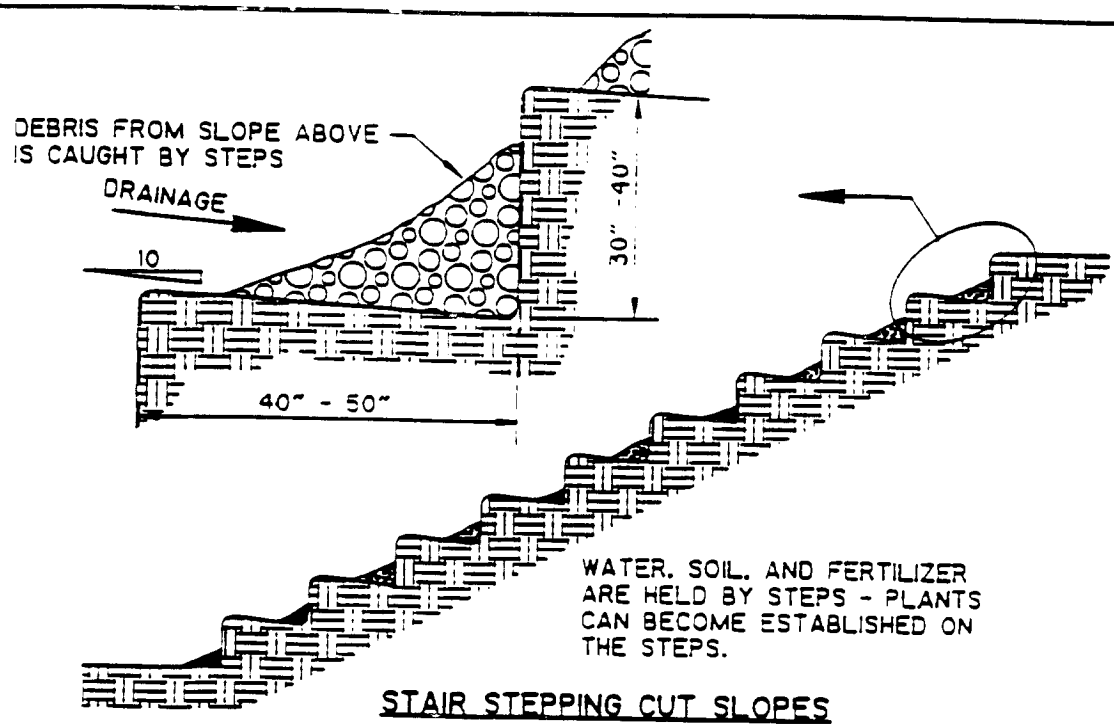
Implementation Requirements

- ○ Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

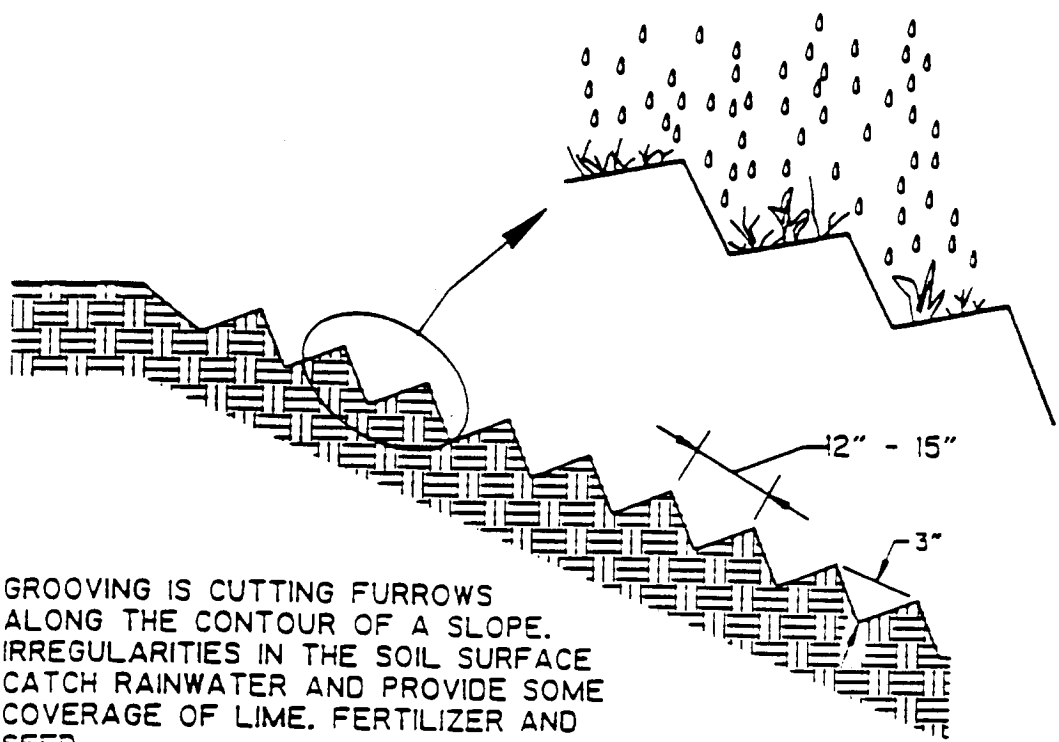
● High ○ Low

ESC42

Best Management Practices



STAIR STEPPING CUT SLOPES



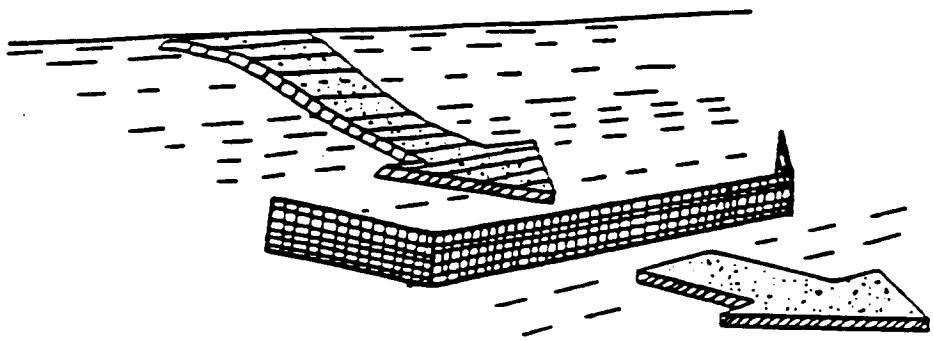
GROOVING IS CUTTING FURROWS ALONG THE CONTOUR OF A SLOPE. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND PROVIDE SOME COVERAGE OF LIME. FERTILIZER AND SEED.

GROOVING SLOPES

ESC42

STAIR-STEPPING CUT SLOPES AND GROOVING SLOPES

BMP: SILT FENCE



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

GENERAL DESCRIPTION

A silt fence is made of a filter fabric which has been entrenched, attached to supporting poles, and sometimes backed by a wire fence for support. The silt fence detains sediment-laden water, promoting sedimentation behind the fence.

SUITABLE APPLICATIONS

- Along the perimeter of the site.
- Below the toe of a cleared slope.
- Along streams and channels.
- Around temporary spoil areas.
- Across swales with catchments less than 1 acre.
- Below other small cleared areas.

INSTALLATION/APPLICATION

- Use principally in areas where sheet flow occurs.
- Install along a level contour, so water does not pond more than 1.5 feet at any point.
- No more than 1 acre, 100 ft., or 0.5 cfs of concentrated flow should drain to any point along the silt fence.
- Turn ends of fence uphill.
- Provide area behind the fence for runoff to pond and sediment to settle (approx. 1200 sq. ft. per acre draining to the silt fence).
- Select filter fabric which retains 85% of the soil by weight, based on sieve analysis, but is not finer than an equivalent opening size of 70.

REQUIREMENTS

- Maintenance
  - Inspect weekly and after each rainfall.
  - Repair wherever fence is damaged.
  - Remove sediment when it reaches 1/3 the height of the fence.
- Cost (source: EPA, 1992)
  - Average annual cost for installation and maintenance (assumes 6 month useful life): $7 per lineal foot ($850 per drainage acre)

LIMITATIONS

- Do not use where 85% of the soil, by weight, passes through a No. 200 sieve because the filter fabric will clog.
- Do not place fence on a slope, or across any contour line.
- Do not use in streams, channels, or anywhere flow has concentrated.
- Do not use in locations where ponded water may cause flooding.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ◒ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

ESC50

Best Management Practices

Additional Information — Silt Fence

To reduce the chance of clogging, it is preferable to specify a fabric with openings as large as allowed by the criteria. No fabric should be specified with an EOS smaller than U.S. Standard Sieve No. 100 [0.0059 in. (0.15 mm.)]. If 85 percent or more of a soil, by weight, passes through the openings in a No. 200 sieve [0.0029 in. (0.074 mm.)], filter fabric should not be used. Most of the particles in such a soil would not be retained if the EOS was too large, and they would clog the fabric quickly if the EOS was small enough to capture the soil.

The fence should be supported by a wire mesh if the fabric selected does not have sufficient strength and bursting strength characteristics for the planned application (as recommended by the fabric manufacturer). Filter fabric material should contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0° F. to 120° F.

Installation Guidelines:
Filter fences are to be constructed on a level contour. Sufficient area should exist behind the fence for ponding to occur without flooding or overtopping the fence.

- Posts should be spaced a maximum of 6 feet apart and driven securely into the ground a minimum of 30 inches.
- A trench should be excavated approximately 8 inches wide and 12 inches deep along the line of posts and upslope from the barrier.
- When standard strength filter fabric is used, a wire mesh support fence should be fastened securely to the upslope side of the posts using heavy-duty wire staples at least 1 inch long, tie wires or hog rings. The wire should extend into the trench a minimum of 4 inches.
- The standard strength filter fabric should be stapled or wired to the fence, and 40 inches of the fabric should extend into the trench. When extra-strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated and the filter fabric stapled or wired directly to the posts.
- Avoid the use of joints. The filter fabric should be purchased in a continuous roll, then cut to the length of the barrier. When joints are necessary, filter cloth should be spliced together only at a support post, with a minimum 6 inch overlap, and both ends securely fastened to the post.
- The trench should be backfilled with compacted native material.

Requirements
Maintenance:

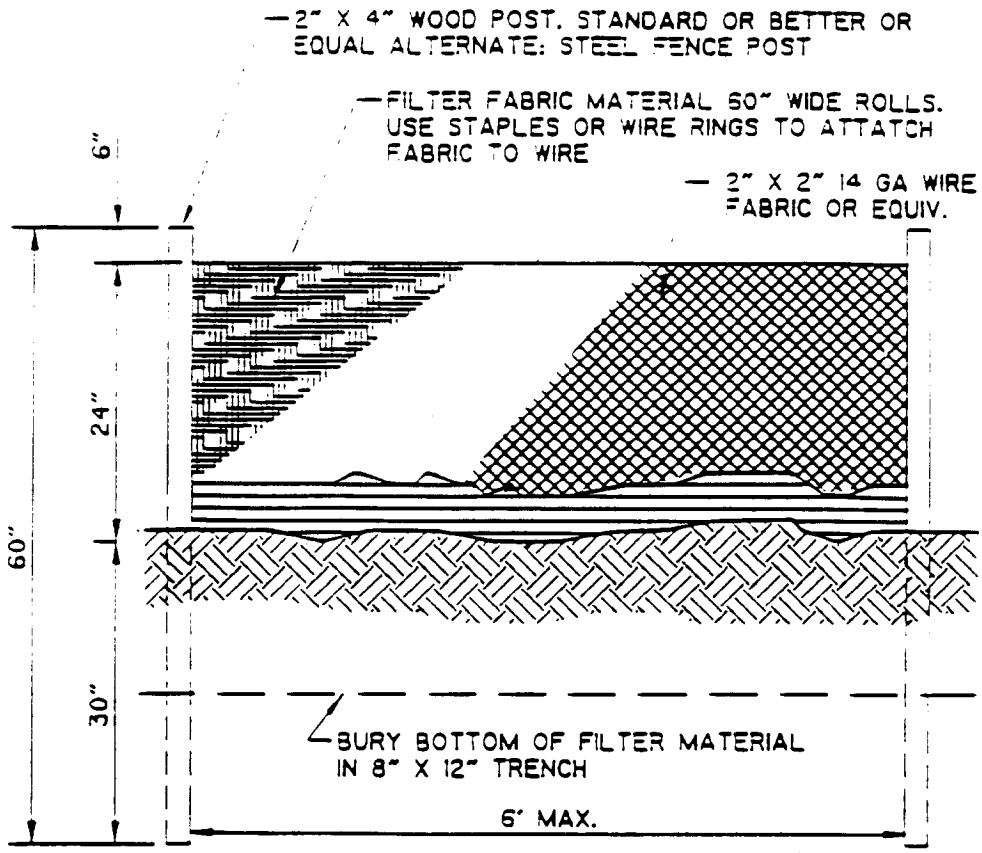
Inspect monthly during dry periods and immediately after each rainfall. Repair as necessary. Sediment must be removed when it reaches approximately one third the height of the fence, especially if heavy rains are expected.

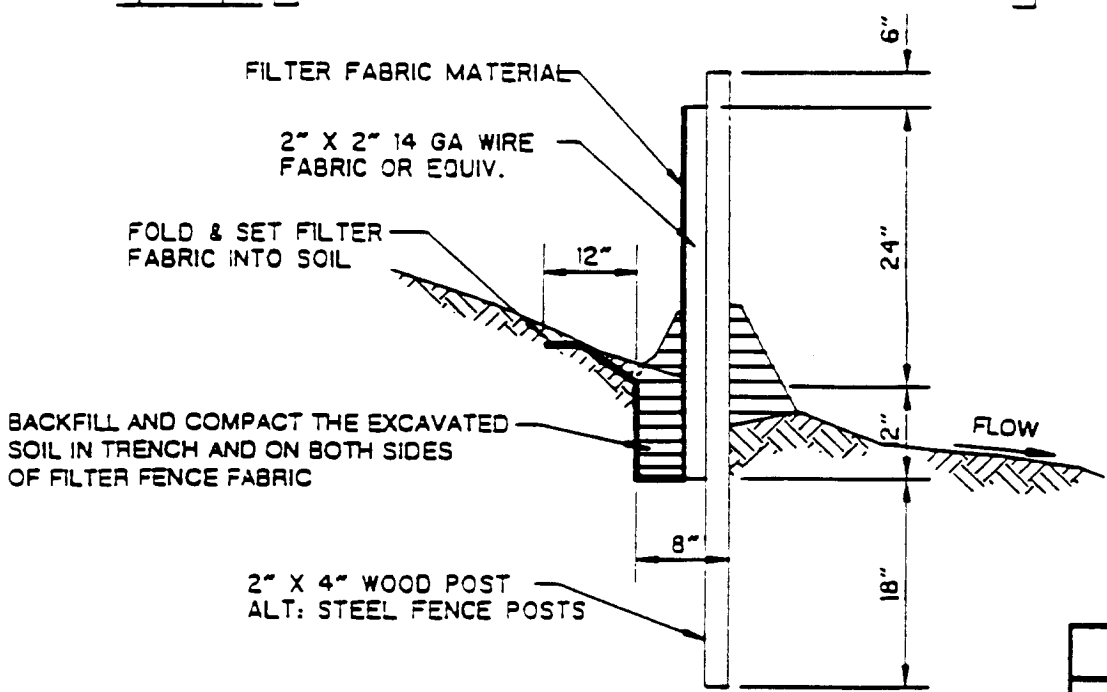
Filter fences should not be removed until the upslope area has been permanently stabilized.

Limitations
- Filter fences will create a temporary sedimentation pond on the upstream side of the fence and may cause temporary flooding. Fences not constructed on a level contour will be overtopped by concentrated flow resulting in failure of the filter fence.
- Filter fences are not practical where large flows of water are involved, hence the need to restrict their use to drainage areas of one acre or less, and flow rates of less than 0.5 cfs.
- Problems may arise from incorrect selection of pore size and/or improper installation.
- Do not allow water depth to exceed 1.5 ft. at any point.
- Improperly installed fences are subject to failure from undercutting, overlapping, or collapsing.

ESC50

Additional Information — Silt Fence



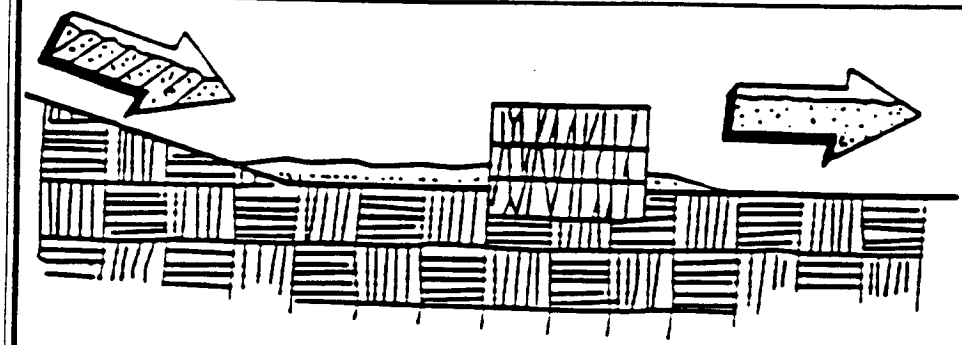


SILT FENCE

ESC50

R0001019

BMP: STRAW BALE BARRIERS



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- **Control Site Perimeter**
- **Control Internal Erosion**

GENERAL DEFINITION

A straw bale barrier consists of straw bales placed end to end along a level contour in a shallow trench and staked to hold them in place. The barrier detains runoff, creating a pond behind the barrier where sedimentation occurs.

SUITABLE APPLICATIONS

- Along the perimeter of the site.
- Along streams and channels.
- Across swales with small catchments.
- Around temporary spoil areas.
- Below other small, cleared areas.

INSTALLATION/APPLICATION CRITERIA

- Use primarily in areas where sheet or rill flow occurs.
- No more than 1/4 acre per 100 feet of barrier should drain to the barrier.
- Install along a level contour.
- Place in a 4-inch deep trench.
- Backfill and compact the excavated soil on the upstream face of the barrier.
- Secure each bale with two stakes.
- Leave enough area (about 1200 sq. ft. per acre) behind the barrier for runoff to pond (no more than 1.5 ft. depth) and sediment to settle.

REQUIREMENTS

- Maintenance
  - Inspect weekly and after each rain.
  - Replace bales which have decomposed or whose bindings have broken.
  - Remove sediment behind the barrier when it reaches a depth of 6 inches.
- Costs (source: EPA, 1992)
  - Average annual cost for installation and maintenance (assumes 3 month useful life): $17 per lineal foot ($6,800 per drainage acre).

LIMITATIONS

- Straw bale barriers are not to be used for extended periods of time because they tend to rot and fall apart.
- Suitable only for sheet flow on slopes of 2% or flatter.
- Not appropriate for large drainage areas, limit to one acre or less.
- Straw bales lose their effectiveness rapidly due to rotting, thus constant maintenance is required.
- Not recommended for concentrated flow, inlet protection, channel flow, and live streams.
- Bale bindings of jute or cotton not recommended.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ● Capital Costs
- ● O&M Costs
- ● Maintenance
- ○ Training
- ○ Suitibility for Slopes >5%

● High ○ Low

ESC51

Best Management Practices

Additional Information — Straw Bale Barrier

A straw bale barrier consists of a series of secured anchored bales placed to intercept sediment-laden runoff from small drainage areas of disturbed soil. The barrier ponds runoff and allow sediment to settle. Straw bale dikes should not be used for extended periods of time because they tend to rot and fall apart.

The straw bale barrier is used where there are no concentrations of water in a channel or drainageway, and where erosion would occur from sheet flow. These barriers are typically constructed below disturbed areas subject to sheet flow of runoff.

Installation/Application

Straw bale barriers should be used for drainage areas no more than 1/4 acre per 100 feet of barrier length, with no more than 100 ft upstream of any point along the barrier. The barrier should be placed along a level contour no greater than 2:1. When installed and maintained according to the guidelines on this fact sheet, straw bale dikes remove approximately 67% of the sediment transported in construction site runoff. This optimum efficiency can only be achieved through careful maintenance, with special attention to replacing rotted or broken bales. The barrier should be constructed on a level contour to prevent concentration of flow against a small portion of the barrier.

An effective straw bale barrier should be installed in the following manner:

1. Bales should be placed on the contour and in a row with ends tightly abutting the adjacent bales.
2. Leave area for runoff to pond upstream of the barrier by locating barrier away from the toe of slopes. This also provides access for maintenance.
3. Each bale should be embedded in the soil a minimum of (4) inches and placed so the bindings are horizontal. Bindings placed on soil will soon disintegrate and cause the barrier to fail.
4. Bales should be securely anchored in place by either two stakes or re-bars driven through the bale. The first stake in each bale should be driven toward the previously laid bale at an angle to force the bales together. Stakes should be driven flush with the bale.
5. Backfill and compact the excavated soil along the upstream face of the barrier.
6. Remove the barrier when it has served its usefulness so as not to block or impede storm flow or drainage.

REFERENCES

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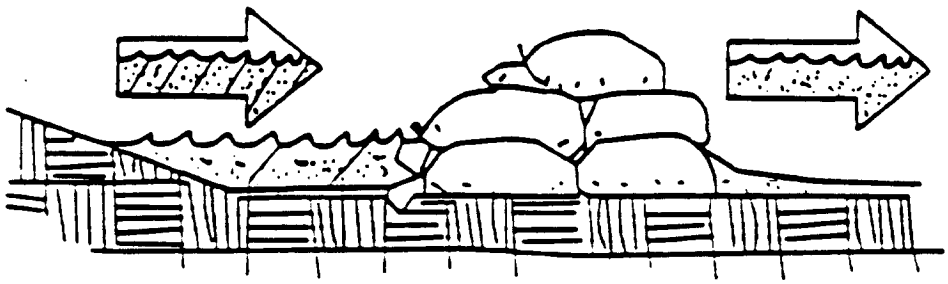
ESC51

BMP: SAND BAG BARRIER



GENERAL DEFINITION

Stacking sand bags along a level contour creates a barrier which detains sediment-laden water, ponding water upstream of the barrier and promoting sedimentation.

SUITABLE APPLICATIONS

- Along the perimeter of the site.
- Check dams across streams and channels.
- Along streams and channels.
- Barrier for utility trenches in a channel.
- Across swales with small catchments.
- Division dike or berm.
- Below the toe of a cleared slope.
- Create a temporary sediment trap.
- Around temporary spoil areas.
- Below other small cleared areas.

INSTALLATION/APPLICATION CRITERIA

- May be used in drainage areas up to 5 acres.
- Install along a level contour.
- Base of sand bag barrier should be at least 48 inches wide.
- Height of sand bag barrier should be at least 18 inches high.
- 4 inch PVC pipe may be installed between the top layer of sand bags to drain large flood flows.
- Provide area behind barrier for runoff to pond and sediment to settle. size according to sediment trap BMP criteria (ESC55).
- Place below the toe of a slope.
- Use sand bags large enough and sturdy enough to withstand major flooding.

REQUIREMENTS

- Maintenance
  - Inspect after each rain.
  - Reshape or replace damaged sand bags immediately.
  - Remove sediment when it reaches six inches in depth.
- Cost
  - Sand bag barriers are more costly, but typically have a longer useful life than other barriers.

LIMITATIONS

- Sand bags are more expensive than other barriers, but also more durable.
- Burlap should not be used for sand bags.

Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- **Protect Slopes/Channels**
- **Control Site Perimeter**
- **Control Internal Erosion**

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

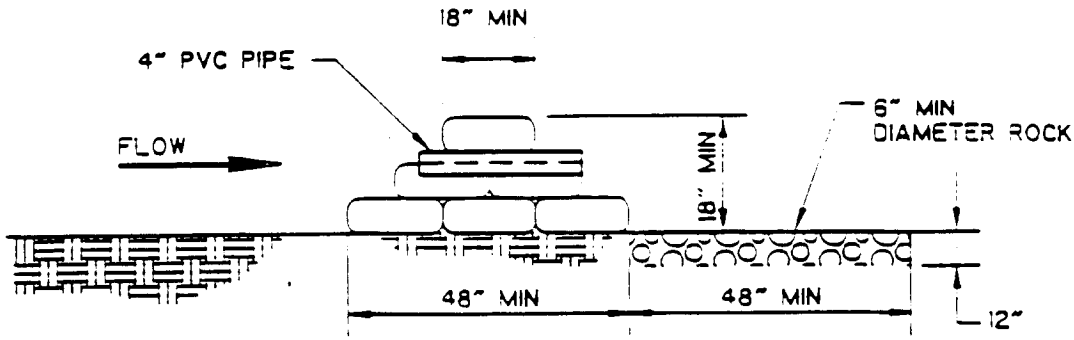
- ● Capital Costs
- ○ O&M Costs
- ○ Maintenance
- ○ Training
- ◒ Suitability for Slopes >5%

● High ○ Low

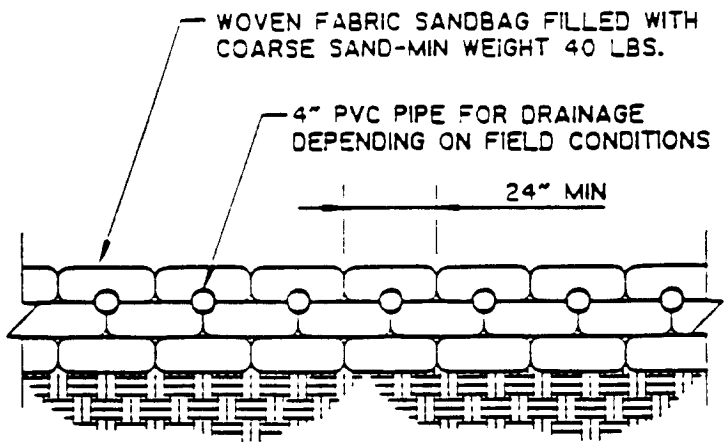
ESC52

Best Management Practices

Additional Information — Sand Bag Barrier



CROSS-SECTION



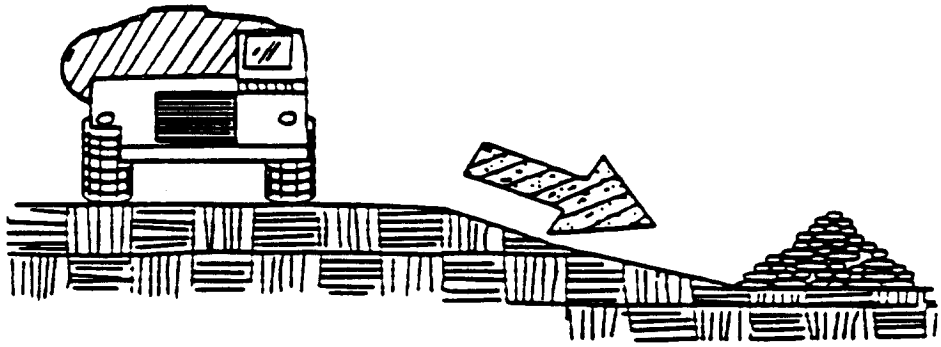
FRONT VIEW

SAND BAG BERM

ESC52

R0001023

BMP: BRUSH OR ROCK FILTER



Objectives

- *Housekeeping Practices*
- *Contain Waste*
- *Minimize Disturbed Areas*
- *Stabilize Disturbed Areas*
- *Protect Slopes/Channels* (●)
- *Control Site Perimeter* (●)
- *Control Internal Erosion* (●)

GENERAL DEFINITION

A rock filter berm is made of rock 3/4 to 3 inches in diameter and placed along a level contour where sheet flow may be detained and ponded, promoting sedimentation. A brush barrier is composed of brush (usually obtained during the site clearing) wrapped in filter cloth and anchored to the toe of the slope. If properly anchored brush or rock filters may be used for sediment trapping and velocity reduction. See Check Dam BMP (ESC41) for more information.

SUITABLE APPLICATIONS

- As check dams across mildly sloped construction roads.
- Below the toe of slopes.
- Along the site perimeter.
- Along streams and channels.
- Around temporary spoil areas.
- Below other small cleared areas.
- At sediment traps at culvert/pipe outlets.

INSTALLATION/APPLICATION CRITERIA

- Use principally in areas where sheet or rill flow occurs.
- For rock filter, use larger rock and place in a staked, woven wire sheathing if placed where concentrated flows occur.
- Install along a level contour.
- Leave area behind berm where runoff can pond and sediment can settle.
- Drainage area should not exceed 5 acres.

REQUIREMENTS

- Maintenance
  - Inspect monthly and after each rainfall.
  - If berm damaged, reshape and replace lost/dislodged rock.
  - Remove sediments when depth reaches 1/3 of berm height, or 1 ft.
- Cost
  - Brush filter: Low to moderate cost if debris from on-site clearing and grubbing is used.
  - Rock filter: Expensive, since off-site materials, hand construction and demolition/ removal are usually required.

Targeted Pollutants

- ● *Sediment*
- ○ *Nutrients*
- ○ *Toxic Materials*
- ○ *Oil & Grease*
- ○ *Floatable Materials*
- ○ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ◒ *Capital Costs*
- ◒ *O&M Costs*
- ○ *Maintenance*
- ○ *Training*
- ◒ *Suitability for Slopes >5%*

● *High* ○ *Low*

ESC53

Best Management Practices

Additional Information — Brush or Rock Filter

Rock Filter

A rock filter consists of open graded rock installed at the toe of a slope, along the perimeter of a developing or disturbed area, and as a checkdam across construction roads. Their purpose is to intercept sediment laden runoff from disturbed areas of the site, allow the runoff to pond, promote sedimentation behind the filter, and slowly release the water as sheet flow.

Rock filters are appropriate where a temporary measure is needed to prevent sediments from entering right-of-ways of traffic areas such as near the toe of slopes, incorporated into temporary stabilized construction entrances (ESC 26), or at other locations along the construction site perimeter. Rock filters may also be used as check dams across one or more lanes of construction traffic temporary roads, or unsurfaced rights of way subject to construction traffic.

Advantages of the rock filters are that they may be less costly than other temporary barriers, and are relatively efficient at sediment removal.

Installation/Application:

Planning:

- Rock filters should be placed along a level contour to intercept sheet flow.
- Allow ample room for ponding, sedimentation, and access by sediment removal equipment between the berm and the toes of slopes.
- Flow through the filter should occur as sheet flow into an undisturbed or stabilized area.
- Installation in stream beds requires large rock, staking of woven wire sheathing, and daily inspection.

Design & Sizing Criteria:

The following design criteria are commonly used to construct filters:

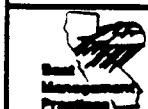
- In Non-Traffic Areas:
  - Maximum flow-through rate per square foot of filter = 60 gpm
  - Height = 18 inches minimum
  - Top width = 24 inches minimum
  - Side slopes = 2:1 or flatter
  - Woven wire sheathing (poultry netting) is recommended in areas of concentrated flow. The wire should be 1 inch diameter hexagonal mesh, galvanized 20 gauge.
  - Build the filter along on a level contour.
  - Rock: 3/4 to 3 inches open graded for sheet flow, 3 to 5 inches open graded for concentrated flow.

- In Construction Traffic Areas:
  - Height = 12" maximum
  - Provide multiple filters in series, spaced as shown.
    Every 300 ft on slopes less than 5 percent
    Every 200 ft on slopes 5 to 10 percent
    Every 100 ft on slopes greater than 10 percent.

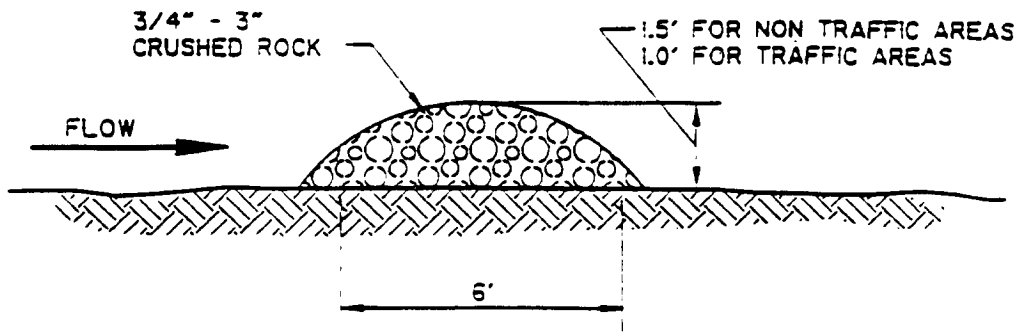
Brush Filter

Brush filters trap and filter sediments in a manner similar to other barriers in this handbook (e.g., silt fence, straw bale barrier, rock filter), but have the advantage of being constructed from brush cleared from the site and usually disposed off-site at a cost.

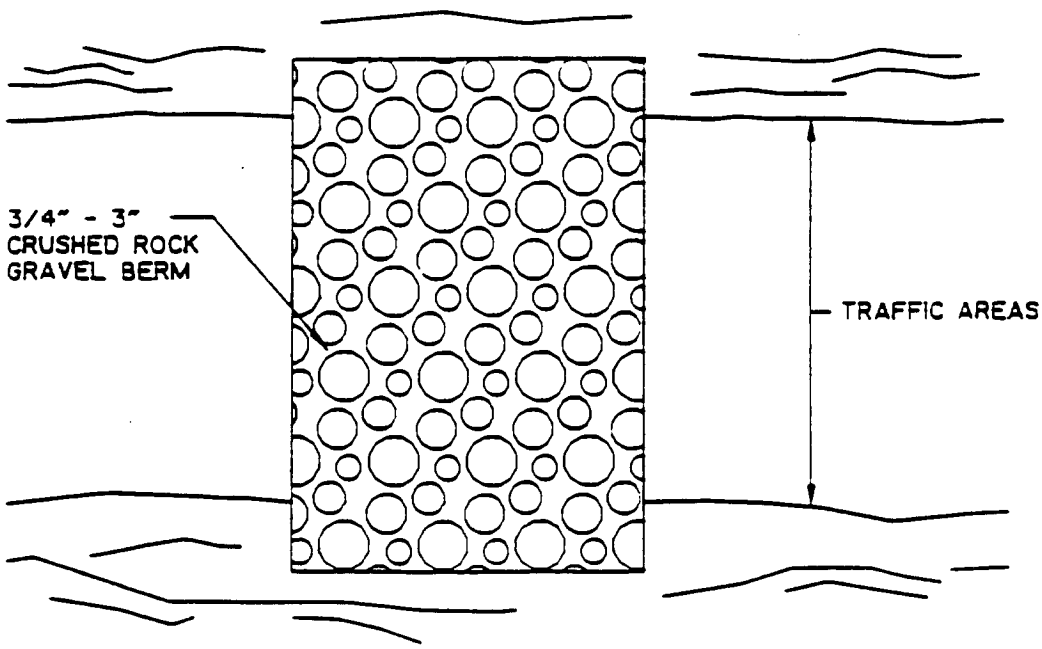
ESC53



Additional Information — Brush or Rock Filter



SECTION

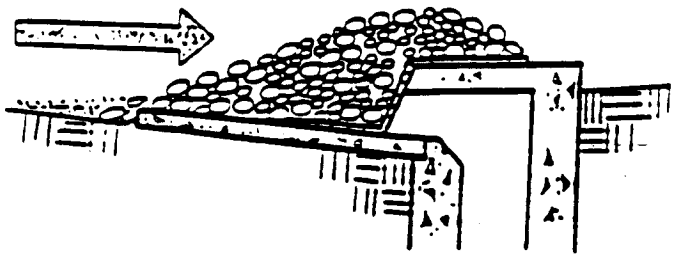


PLAN

GRAVEL FILTER BERM

ESC53

BMP: STORM DRAIN INLET PROTECTION



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- **Control Site Perimeter**
- **Control Internal Erosion**

GENERAL DEFINITION

Devices of various designs which detain sediment-laden runoff and allow the sediment it to settle prior to discharge into a storm drain inlet or catch basin.

SUITABLE APPLICATIONS

- Every storm drain inlet receiving sediment-laden runoff should be protected, either by covering the inlet or promoting sedimentation upstream of the inlet.

INSTALLATION/APPLICATION

- Five types of inlet protection are presented below, however, it is recognized that other effective methods and proprietary device, exist and may be selected:
  - Filter Fabric Fence: Appropriate for drainage basins less than one acre with less than a 5 percent slope.
  - Block and Gravel Filter: Appropriate for flows greater than 0.5 cfs.
  - Gravel and Wire Mesh Filter: Used on curb or drop inlets where construction equipment may drive over the inlet.
  - Sand bag barrier: Used to create a small sediment trap upstream of inlets on sloped, paved streets.
  - Excavated Drop Inlet Sediment Trap: An excavated area around the inlet to trap sediment (see Sediment Trap ESC 55).
- Select the appropriate type of inlet protection and design as referred to or as described in this fact sheet.
- Use only for drainage areas smaller than one acre unless a sediment trap first intercepts the runoff.
- Provide area around the inlet for water to pond without flooding structures and property.

REQUIREMENTS

- Maintenance
  - Inspect weekly and after each rain.
  - Replace clogged filter fabric or stone filters immediately.
  - Remove sediment when depth exceeds half the height of the filter, or half the depth of the sediment trap.
  - Remove as soon as upstream soils are stabilized and streets are swept.
- Cost (source: EPA, 1992)
  - Average annual cost for installation and maintenance (1 year useful life) is $150 per inlet.

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ◒ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ◒ Capital Costs
- ○ O&M Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

ESC54

Best Management Practices

Additional Information — Storm Drain Inlet Protection

Storm drain inlet protection consists of a sediment filter or an impounding area around or upstream of a storm drain, drop inlet, or curb inlet. This erosion and sedimentation control BMP prevents excessive sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

All on-site storm drain inlets should be protected. Off-site, inlets should be protected in areas where construction activity tracks sediment onto paved areas or where inlets receive runoff from disturbed areas.

Installation/Application Criteria

Planning

Large amounts of sediment may enter the storm drain system when storm drains are installed before the upslope drainage area is stabilized, or where construction is adjacent to an existing storm drain. In cases of extreme sediment loading, the storm drain itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the system at the inlets.

Inlet control measures presented in this handbook should not be used for inlets draining more than one acre. Runoff from larger disturbed areas should be first routed through a Temporary Sediment Trap (see ESC 56). Different types of inlet protection are appropriate for different applications depending on site conditions and the type of inlet. Inlet protection methods not presented in this handbook should be approved by the local storm water management agency.

General Design and sizing criteria:

- Grates and spaces around all inlets should be sealed to prevent seepage of sediment-laden water.
- Excavate sediment sumps (where needed) 1 to 2 feet with 2:1 side slopes around the inlet.

Installation procedures for filter fabric fence:

a. Place 2 inch by 2 inch wooden stakes around the perimeter of the inlet a maximum of 3 feet apart and drive them at least 8 inches into the ground. The stakes must be at least 3 feet long.
b. Excavate a trench approximately 8 inches wide and 12 inches deep around the outside perimeter of the stakes.
c. Staple the filter fabric (for materials and specifications, see Silt Fence ESC 50) to wooden stakes so that 32 inches of the fabric extends out and can be formed into the trench. Use heavy-duty wire staples at least one inch in length.
d. Backfill the trench with 3/4 inch or less washed gravel all the way around.

Installation procedure for block and gravel filter:

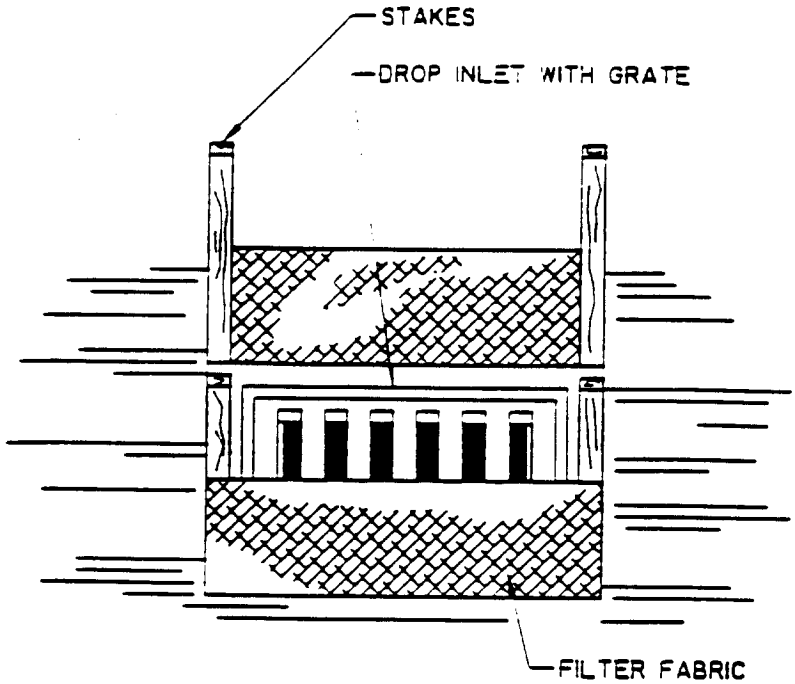
a. Place hardware cloth or comparable wire mesh with one-half inch openings over the drop inlet so that the wire extends a minimum of 1 foot beyond each side of the inlet structure. If more than one strip is necessary, overlap the strips. Place filter fabric over the wire mesh.
b. Place concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, so that the open ends face outward, not upward. The ends of adjacent blocks should abut. The height of the barrier can be varied, depending on design needs, by stacking combinations of blocks that are 4 inches, 8 inches, and 12 inches wide. The row of blocks should be at least 12 inches but no greater than 24 inches high.
c. Place wire mesh over the outside vertical face (open end) of the concrete blocks to prevent stone from being washed through the blocks. Use hardware cloth or comparable wire mesh with one half inch openings.
d. Pile washed stone against the wire mesh to the top of the blocks. Use 3/4 to 3 inch gravel.

Installation procedure for gravel and wire mesh filters:

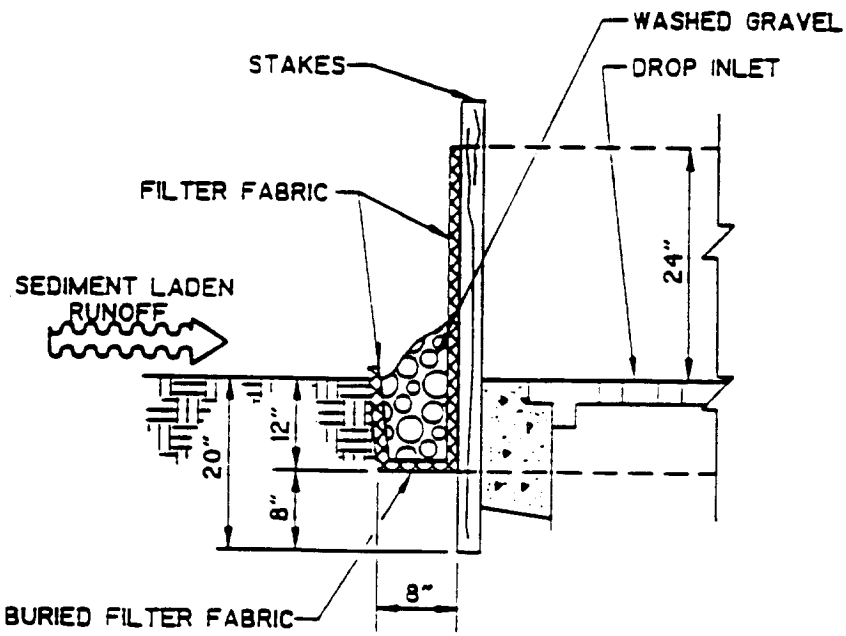
a. Place wire mesh over the drop inlet so that the wire extends a minimum of 1 foot beyond each side of the inlet structure. Use hardware cloth or comparable wire mesh with one-half inch openings. If more than one strip of mesh is necessary, overlap the strips. Place filter fabric over wire mesh.

ESC54

Additional Information — Storm Drain Inlet Protection



ELEVATION



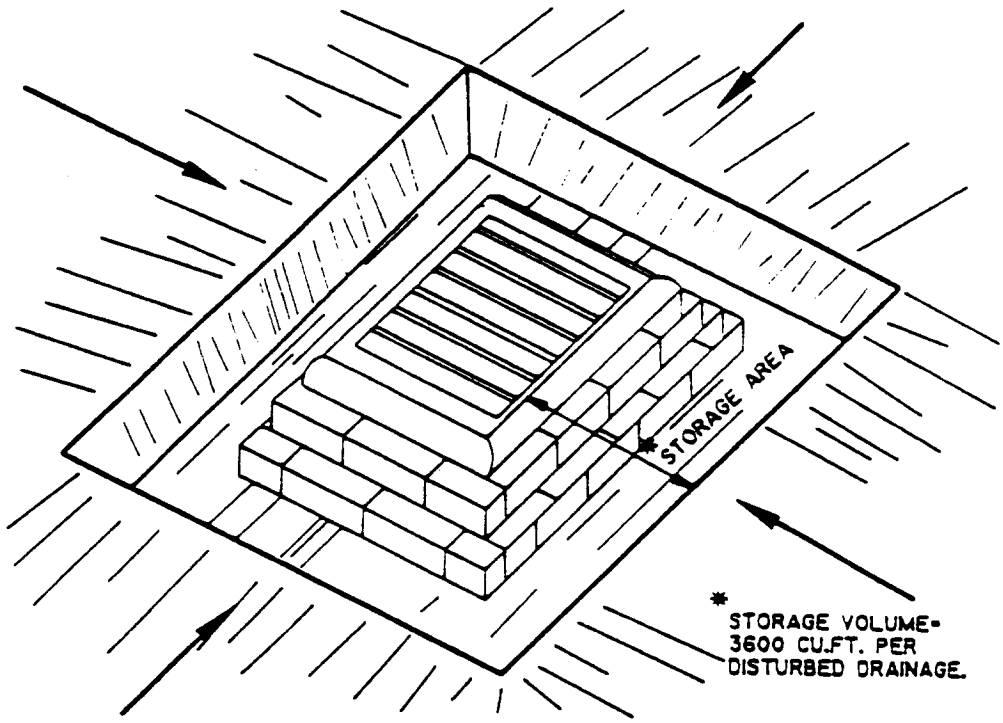
PROFILE

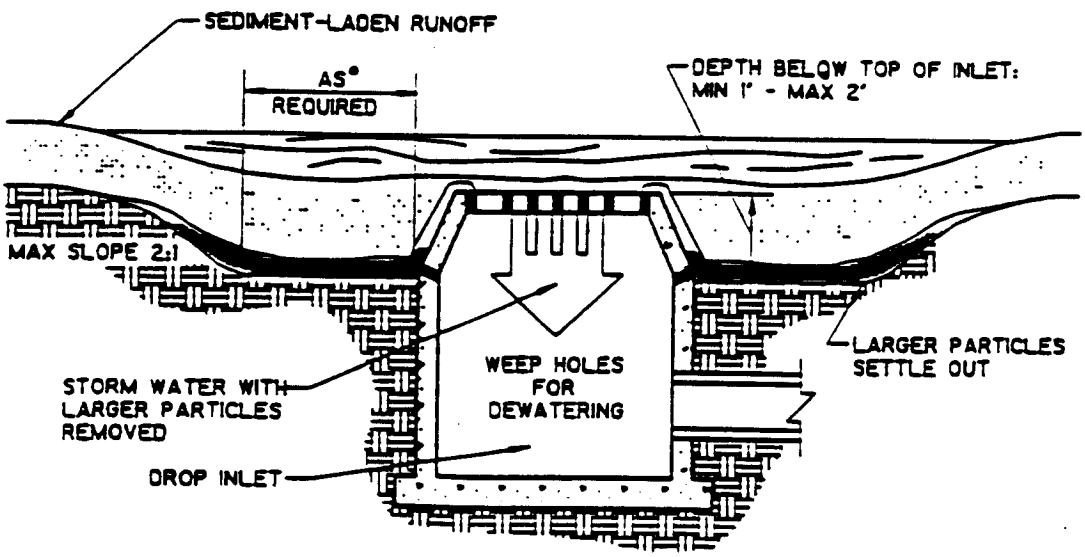
FILTER FABRIC FENCE DROP INLET FILTER

ESC54

R0001029

Additional Information — Storm Drain Inlet Protection





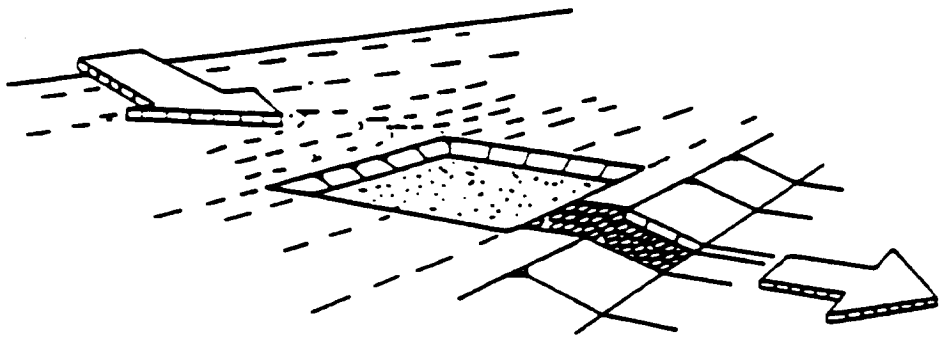
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPABILITY AND EASE OF MAINTENANCE ARE DESIRABLE.

EXCAVATED DROP INLET SEDIMENT TRAP

ESC54

BMP: SEDIMENT TRAP



Objectives

- *Housekeeping Practices*
- *Contain Waste*
- *Minimize Disturbed Areas*
- *Stabalize Disturbed Areas*
- *Protect Slopes/Channels*
- *Control Site Perimeter*
- *Control Internal Erosion*

GENERAL DEFINITION

A sediment trap is a small, excavated or bermed area where runoff from small drainage areas is detained and sediment can settle.

SUITABLE APPLICATIONS

- Any disturbed area less than 5 acres. (Sediment Basins, ESC56, must be used for drainage areas greater than 5 acres).
- Along the perimeter of the site at locations where sediment-laden runoff is discharged off-site.
- Around and/or upslope from storm drain inlet protection measures.
- At any point within the site where sediment-laden runoff can enter stabilized or natural areas or waterways.

INSTALLATION/APPLICATION CRITERIA

- Build outside the area to be graded before clearing, grubbing, and grading begin.
- Locate where the trap can be easily cleared of sediment.
- Trap size depends on the type of soil, size of the drainage area, and desired sediment removal efficiency.
- The larger the trap, the less frequently sediment must be removed.
- The outlet of the trap must be stabilized with rock, vegetation, or another suitable material.
- A stable emergency spillway must be installed to safely convey major floods (see your local flood control agency).

REQUIREMENTS

- Maintenance
  - Remove sediment when the sediment storage zone is no more than 1 ft. from being full.
  - Inspect weekly and after each rain.
- Cost (source: EPA, 1992)
  - Average annual cost per installation and maintenance (18 month useful life) is $0.70 per $ft.^3$ ($1,300 per drainage acre).

LIMITATIONS

- Only use for drainage areas up to 5 acres (see Sedimentation Basin BMP ST8 for larger areas).
- Only removes coarse sediment (medium silt size and larger) unless sized like a sedimentation basin.

Targeted Pollutants

- ● *Sediment*
- ○ *Nutrients*
- ◒ *Toxic Materials*
- ○ *Oil & Grease*
- ○ *Floatable Materials*
- ○ *Other Construction Waste*

- ● *Likely to Have Significant Impact*
- ○ *Probable Low or Unknown Impact*

Implementation Requirements

- ○ *Capital Costs*
- ◒ *O&M Costs*
- ○ *Maintenance*
- ○ *Training*
- ○ *Suitability for Slopes >5%*

● *High* ○ *Low*

ESC 55

Best Management Practices

Additional Information — Sediment Trap

3. The trap is removed and the area stabilized when the upslope drainage area has been properly stabilized.
4. All cut-and-fill slopes should be 3:1 or flatter.
5. When a riser is used, all pipe joints must be watertight.
6. When a riser is used, at least the top two-thirds of the riser shall be perforated with 1/2-inch diameter holes spaced 8 inches vertically and 10 to 12 inches horizontally. (See Sediment Basin, ESC56)
7. When an earth or stone outlet is used, the outlet crest elevation should be at least 1 foot below the top of the embankment.
8. When a crushed stone outlet is used, the crushed stone used in the outlet should meet AASHTO M43, size No. 2 or 24, or its equivalent such as MSHA No. 2. Gravel meeting the above gradation may be used if crushed stone is not available.

REFERENCES

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Rough Draft - July 1992.

"Draft - Sedimentation and Erosion Control, An Inventory of Current Practices", U.S.E.P.A., April, 1990.

"Environmental Criteria Manual", City of Austin, Texas.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, June 1981.

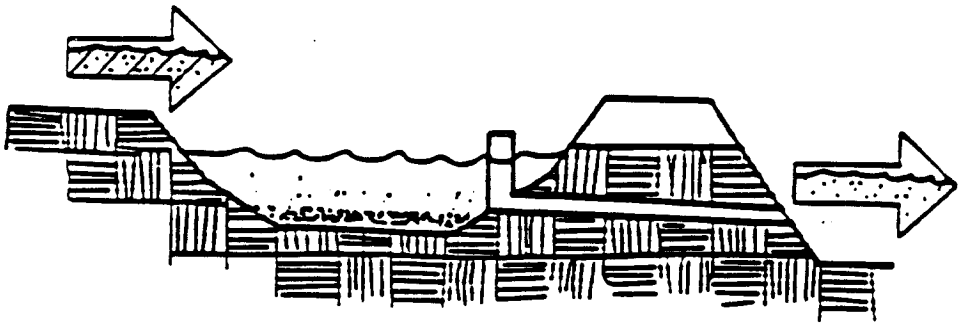
Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April, 1992.

Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC55

BMP: SEDIMENT BASIN



Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabalize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- **Control Internal Erosion**

GENERAL DEFINITION

A pond created by excavation or constructing an embankment, and designed to retain or detain runoff sufficiently to allow excessive sediment to settle.

SUITABLE APPLICATIONS

- At the outlet of all disturbed watershed 10 acres or larger.
- At the outlet of smaller disturbed watersheds, as necessary.
- Where post construction detention basins will be located.
- Should be used in association with dikes, temporary channels, and pipes used to divert disturbed areas into the basin and undisturbed areas around the basin.

INSTALLATION/APPLICATION

- Construct before clearing and grading work begins.
- Do not locate in a stream.
- All basin sites should be located where failure of the embankment would not cause loss of life/property damage.
- Large basins are subject to state/local dam safety requirements.
- Securely anchor and install an anti-seep collar on the outlet pipe/riser, and provide an emergency spillway for passing major floods (see local flood control agency).
- The basin volume should be sized to capture runoff from a 2-year, 24-hour storm, or other appropriate design storms specified by the local agency. A detention time of 24 to 40 hours should allow 70 to 80 percent of sediment to settle.
- The basin volume consists of two zones:
  - A sediment storage zone at least 1 foot deep.
  - A settling zone at least 2 feet deep.
- The length to settling depth ratio (L/SD) should be less than 200.
- The length to width ratio should be greater than 6:1, or baffles are required to prevent short circuiting.

REQUIREMENTS

- Maintenance
  - Inspect weekly and after each rain.
  - Remove sediment where the sediment storage zone is half full.
- Cost: Average annual cost for installation and maintenance (2 year useful life, source: EPA, 1992)
  - Basin less than 50,000 $ft.^3$: $0.40 per $ft.^3$ ($700 per drainage acre)
  - Basin size greater than 50,000 $ft.^3$: $0.20 per $ft.^3$ ($350 per drainage acre)

Targeted Pollutants

- ● Sediment
- ○ Nutrients
- ◒ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Waste

- ● Likely to Have Significant Impact
- ○ Probable Low or Unknown Impact

Implementation Requirements

- ○ Capital Costs
- ◒ O&M Costs
- ○ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

● High ○ Low

ESC56

Best Management Practices

Additional Information — Sediment Basin

A sediment basin is a controlled storm water release structure formed by excavation or by constructing an embankment of compacted soil across a drainageway, or other suitable location. Its purpose is to collect and store sediment from sites cleared and/or graded during construction or for extended periods of time before reestablishment of permanent vegetation and/or construction of permanent drainage structures. It is intended to trap sediment before it leaves the construction site. The basin is a temporary measure (with a design life of 12 to 18 months) and is to be maintained until the site area is permanently protected against erosion or a permanent detention basin is constructed.

Sedimentation basins are suitable for nearly all types of construction projects. Whenever possible, construct the sedimentation basins before clearing and grading work begins.
Basins should be located at the stormwater outlet from the site, but not in any natural or undisturbed stream. A typical application would include temporary dikes, pipes, and/or channels to divert runoff to the basin inlet.

Many development projects in California will be required by local ordinances to provide a storm water detention basin for post-construction flood control, desiltation, or storm water pollution control. A temporary sediment basin may be constructed by rough grading the post-construction control basins early in the project.

Sediment basins trap 70-80 percent of the sediment which flows into them if designed according to this handbook. Therefore, they should be used in conjunction with erosion control practices such as temporary seeding, mulching, diversion dikes, etc., to reduce the amount of sediment flowing into the basin.

Installation/Application Criteria
Planning:
To improve the effectiveness of the basin, it should be located to intercept runoff from the largest possible amount of disturbed area. The best locations are generally low areas below disturbed areas. Drainage into the basin can be improved by the use of diversion dikes and ditches. The basin must not be located in a stream but should be located to trap sediment-laden runoff before it enters the stream. The basin should not be located where its failure would result in the loss of life or interruption of the use or service of public utilities or roads.

Design:
- The sedimentation basin volume consists of two zones:
  - The sediment storage zone (at least 1 foot in depth).
  - A settling zone at least 2 feet in depth.
- The sedimentation basin may be formed by partial excavation and/or by construction of a compacted embankment. It may have one or more inflow points.
- A securely anchored riser pipe with an anti-seep collar is the principal outlet, along with an emergency overflow spillway. A solid riser pipe with two 1-inch diameter dewatering holes located at the top of the sediment storage volume on opposite sides of the riser pipe usually provides sufficient detention time for basins draining about 10 acres. Rock, rip-rap, or other suitable outlet protection is provided to reduce erosion at the riser pipe outlet.
- Settling Zone Volume

ESC56

Additional Information — Sediment Basin

REFERENCES

A Current Assessment of Urban Best Management Practices: Techniques for Reducing Nonpoint Source Pollution in the Coastal Zones, Metropolitan Washington Council of Governments, March, 1992.

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Rough Draft - July 1992.

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Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, Jun 1981.

Proposed Guidance Specifying Mnangement Measures for Sources of Nonpoint Pollution in Coastal Water, Work Group Working Paper, USEPA, April, 1992.

Stormwater Management Water for the Puget Sound Basin, Washington State Department of Ecology, The Technical Manual - February 1992, Publication # 91-75.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency - November 1988.

ESC56

Check "Yes" or "No" or "N/A" if not applicable.

YES	NO	N/A		
_____	_____	_____	10	Are all external discharge points reasonably free of any significant erosion or sediment transport?
_____	_____	_____	11.	Are all BMPs identified on the Plan installed in the proper locations and according to the specifications for the Plan?
_____	_____	_____	12.	Are all structural control practices in good repair and maintained in functional order?
_____	_____	_____	13.	Are all on-site traffic routes, parking, and storage of equipment and supplies restricted to areas designated in the Plan for those uses?
_____	_____	_____	14.	Are all locations of temporary soil stockpiles or construction materials in approved areas and properly contained?
_____	_____	_____	15.	Are all seeded or landscaped areas properly maintained?
_____	_____	_____	16.	Are sediment controls in place at discharge points from the site?
_____	_____	_____	17.	Are slopes free of significant erosion?
_____	_____	_____	18	Are all points of ingress and egress from the site provided with stabilized construction entrances?
_____	_____	_____	19.	Is sediment, debris, or mud being cleaned from public roads at intersections with site access roads?
_____	_____	_____	20.	Does the Plan reflect current site conditions?

If you answered "no" to any of the above questions (except Number 1), describe any corrective action(s) that must be taken to remedy the problem and when the corrective action is to be completed:

Checklist Item	Corrective Action(s) Needed	Date to be Completed

Stormwater Quality Management Plan (SQMP)

Public Agency Activities Program

URS Corporation
Camp Dresser & McKee Inc.
Consensus Planning
Psomas and Associates
Larry Walker Associates
Geoff Brosseau

FEBRUARY 2001

Stormwater Quality Management Plan (SQMP)

Public Agency Activities Program

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FEBRUARY 2001

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ES.1 OVERVIEW

On July 15, 1996, the Los Angeles Regional Water Quality Control Board (Regional Board) issued a municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit (Permit) to the County of Los Angeles and 85 cities (Permittees). This Permit contains a requirement for Permittees to develop and implement within their jurisdiction a Storm Water Management Program (SWMP). The Countywide Storm Water Management Plan (CSWMP) is the unified plan consisting of model programs developed under the Storm Water Management Program requirements as established by the Permit. These model programs are aimed to reduce pollutant discharges to the maximum extent practicable for attaining water quality objectives and protecting beneficial uses of receiving waters in Los Angeles County.

In the 2001 NPDES permit, the CSWMP has been renamed to the Stormwater Quality Management Plan (SQMP). For the remainder of this document, the acronym SQMP is used.

The Permit required the Permittees to develop a model program to address each of the following:

- Illicit Connections and Illicit Discharges,
- Development Planning,
- Development Construction,
- Public Agency Activities, and
- Public Information and Participation

Each model program is a "stand-alone" document that describes one of these five elements of the SQMP. Record-keeping and reporting requirements are also associated with each model program. This Executive Summary describes the primary requirements of each of the model programs comprising the SQMP. The remainder of this document is the SQMP element referred to as the Public Agency Activities Program, which was approved by the Regional Board in July 1998.

ES.2 MODEL ILLICIT CONNECTIONS / ILLICIT DISCHARGE ELIMINATION PROGRAM

Part 2.II of the Permit contains requirements specifically for the identification and elimination of illicit connections and illicit discharges to the municipal separate storm sewer system (MS4), generally referred to in this document as "storm drain system." The Permit requirements include

five components for the elimination of illicit connections and illicit discharges. Those five components are:

- Illicit connection elimination,
- Illicit discharge elimination,
- Best management practices (BMPs) program for designated non-stormwater discharges,
- Public reporting of illicit discharge and disposal practices, and
- Hazardous waste reporting program.

Illicit Connection Elimination

The goal of this component is to detect and eliminate illicit connections in order to reduce pollutants discharged through such connections to the maximum extent practical. The objectives are to:

- Conduct storm drain system field screening for illicit connections during scheduled infrastructure maintenance by maintenance personnel.
- Determine the source and nature of suspected illicit discharges by investigating connections to the storm drain system.

The model program also describes a methodology that Permittees may use in prioritizing areas of their jurisdiction for investigation. Once the illicit connection/discharge has been investigated, one of the following actions must occur:

- If the discharge is determined to consist only of exempted non-stormwater, the connection will be allowed to remain and will no longer be considered an illicit connection. Permittees may elect to issue a permit for the connection or allow the connection to remain if information on the connection is documented; or
- The discharger will be required to obtain an NPDES permit; or
- The connection will be terminated through voluntary action or enforcement proceedings.

Permittees may prioritize potential problem areas for detection and investigation efforts under this program component, using the methodology defined in this model program.

Illicit Discharge Elimination

The goal of this component is to detect and eliminate illicit discharges from entering the storm drain system to reduce pollutants from such discharge to the maximum extent practicable. The objectives are to:

- Investigate, contain, and clean up incidental spills reported by the public, other agencies or observed by Permittee field staff during the course of their normal daily activities,
- Eliminate through voluntary termination or enforcement action prohibited non-stormwater discharges to the storm drain system, and
- Investigate to determine the nature and source of the discharge and eliminate through voluntary termination or enforcement action suspected prohibited non-storm discharges in the storm drain system.

BMPs for Designated Non-Stormwater Discharges

The Permit required the City of Los Angeles to conduct a study on pollutants entering storm drains from street and sidewalk washing operation to:

(i.) Characterize discharges from municipal street washing and sidewalk washing

(ii.) Assess the impacts of such activities and

(iii.) Recommend appropriate BMPs to control any adverse impacts.

The City of Los Angeles completed the study and prepared a report entitled, "A Study of Pollutants Entering Storm Drains from Street and Sidewalk Washing Operations in Los Angeles, California." The Regional Board approved recommended BMPs for street and sidewalk washing activities.

Public Reporting

The goal of this component is to promote, publicize and facilitate public reporting of illicit discharges and illicit disposal practices. Permittees must implement a system for complainant documentation and a follow up response for calls received from the public regarding potential illicit discharges and illicit disposal practices.

Reporting Hazardous Substances Entering the Storm Drain System

The goal of this component is to facilitate appropriate reporting of hazardous substances entering the storm drain system as a result of an illicit discharge. The Permittees must implement a reporting program to document quantities of hazardous substances entering the storm drain system.

ES.3 MODEL DEVELOPMENT PLANNING PROGRAM

"Development" Projects encompass those projects that are subject to a planning and permitting review process by a Permittee. A "Development" Project may be new development, redevelopment, renovation, remodeling, rehabilitation, infill, or other terms that may be used in a Permittee's ordinances and/or building code. The planning and design of public facilities have similar requirements described in the Model Public Agency Activities Program, another component of the Countywide Storm Water Management Plan.

The fundamental concept of this program component is to identify development that may significantly impact stormwater quality and to then to include permanent BMPs in the project's design. Development projects that may significantly impact stormwater quality are Planning "Priority" Projects. Other projects are deemed "Exempt" from these program requirements.

Each Permittee will implement a development-planning program that includes the following components:

- System for determining the appropriate category (Priority or Exempt) for a Development Project;
- Recommended list of BMPs to be considered, and as appropriate, implemented for Development Projects;
- Process to ensure that Planning Priority Projects incorporate the Standard Urban Storm Water Mitigation Plans using the recommended list of BMPs;
- Guidelines for California Environmental Quality Act (CEQA) compliance;
- Guidelines for the revision of General Plan elements to include watershed and stormwater quality management considerations, when General Plan elements are being significantly rewritten; and
- Developer information program that provides general guidance on the Permittee's development planning program, and specific guidance on BMP selection and the Standard Urban Storm Water Mitigation Plans.

A checklist and flowchart are included in the Model Development Planning Program to assist Permittees in determining whether a project is Priority or Exempt.

ES.4 MODEL DEVELOPMENT CONSTRUCTION PROGRAM

Permittees must also implement a program to manage stormwater and urban runoff associated with construction activities within their jurisdictions. The Model Development Construction Program addresses:

- Development and implementation of construction site BMPs;
- Implementation of procedures to verify Notice of Intent (NOI) filing with the State Water Resources Control Board (SWRCB) and completion of stormwater pollution prevention plan (SWPPP) for projects subject to the California General Construction Permit, and
- Implementation of a construction inspection program.

Construction Site BMPs

A Development Construction Project is defined as projects for which site activities such as clearing, grading, excavation, road construction, structure construction, or structure demolition results in the disturbance of soil.

In certain situations, where impact to stormwater quality is a greater threat, Development Construction Projects should be given greater scrutiny to ensure that minimum requirements are met. These projects which present a greater threat to water quality, *but are not subject to the California General Permit for Storm Water Discharges Associated with Construction Activity*[1] are called Construction Priority Projects.

Unless specifically exempted, all Development Construction Projects will be required to implement BMPs to meet minimum water quality protection requirements. As a condition for issuing a grading or building permit, applicants for covered Development Construction Projects shall be required to certify that they understand and will comply with the minimum BMPs requirements related to construction site runoff.

Projects Subject to the General Construction Permit

Developers of construction sites subject to the General Construction Permit are required to prepare and implement a Storm Water Pollution Prevention Plan (state SWPPP). Before issuing building or grading permits, Permittees will require applicants to demonstrate that a Notice of Intent (NOI) has been filed with the SWRCB, and that a state SWPPP has been prepared for projects subject to the General Construction Permit.

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1 A project is subject to the General Construction Permit if it disturbs 5 acres or more of soil, or the project results in the disturbance of less than 5 acres but is part of a larger common plan of development or sale that exceeds 5 acres.

Requirements for Construction Priority Projects

Prior to receiving a building or grading permit, applicants for Construction Priority Projects must prepare a local stormwater pollution prevention plan (local SWPPP) covering construction materials and waste management control, and must certify that they will implement the local SWPPP year-round. Applicants for Construction Priority projects must also prepare and implement a Wet Weather Erosion Control Plan (WWECP) if the project will leave soil disturbed during the rainy season (November 1 through April 15).

Site Inspection and Enforcement

Each Permittee will implement site inspection procedures to assess whether the minimum requirements for Development Construction Projects are being achieved and appropriate BMPs are being implemented. Site inspections will also determine if local SWPPPs are being implemented at projects where they apply. Developers and/or contractors will also be required to conduct and document self-inspections of their construction site. Each Permittee will also develop and implement enforcement procedures to require that corrective actions be undertaken when the requirements are not met.

ES.5 MODEL PUBLIC AGENCY ACTIVITIES PROGRAM

Part IV.C of the Permit contains requirements specifically for public agency activities and facilities. Components of the Public Agency Activities Model Program describe measures to be taken by Permittees to reduce stormwater impacts from public agency activities and facilities such as sanitary sewer systems, public construction activities, vehicle maintenance and material storage facilities, recreation facilities, stormwater drainage systems, streets and roads, etc.

Sewage Systems Operations

This program component is applicable to all Permittees who own and operate a sewage collection system. Although sewage systems themselves are not a regular source of stormwater pollution, raw sewage contains pollutants that can pose a serious threat to both human health and the quality of receiving waters if they enter the storm drain system through incidents such as spills, leaks, or overflows. The goal of this program is to reduce the impact of Permittee-owned sewage system operations on stormwater quality.

The objectives of this program component are to:

- Keep any sewage overflows or leaks from entering the storm drain system or receiving waters.
- Identify and repair sewage system blockages, exfiltrations, overflows and implement procedures for investigating the causes.
- Notify public health authorities in cases where threats to public health exist.

Public Construction Activities Management

This program component is applicable to all Permittees who construct or contract to construct public facilities, including infrastructure. The program component requires the use of temporary best management practices (BMPs) to reduce the discharge of pollutants from public construction sites. In addition, public agency facilities with the potential for having a significant effect on stormwater quality when completed by virtue of their size, nature of on-site activities, or other factors must incorporate permanent BMPs in the planning and design of the project.

The objectives of this program component are to:

- Select and incorporate appropriate construction control measures for stormwater quality management from construction sites.
- Conduct and inspection program, including enforcement procedures as necessary, to verify that the construction control measures are implemented and performed effectively throughout the construction period.

Vehicle Maintenance / Material Storage Facilities Management

This program component is applicable to all Permittees who own and operate vehicle maintenance or materials storage facilities. Activities at these facilities may generate waste, spills and leaks that could potentially reach the storm drain system and receiving waters. The goal of this program is to make stormwater quality a consideration when conducting activities at municipal facilities.

The objectives of this program component are to:

- Identify and evaluate sources of pollutants from public vehicle maintenance/material storage facilities that may affect the quality of stormwater discharge from the facility.
- Identify and implement site-specific best management practices to reduce or prevent pollutants in stormwater discharges.

Landscape and Recreational Facilities Management

This program component is applicable to all Permittees who own and operate recreational facilities. Maintenance practices at parks and recreation facilities generally include fertilizer and pesticide applications, vegetation maintenance and disposal, swimming pool chemical maintenance and draining, and trash and debris management. All of these activities have the potential to contribute pollutants to the storm drain system. If improperly managed, potential pollutants can be transported in runoff (stormwater and non-stormwater discharges) to the storm drain system and subsequently to receiving waters. The goal of the program for landscape and recreational facilities management is to make the stormwater quality a consideration when conducting operation and maintenance activities.

The objectives of this program component are to:

- Minimize the discharge of pesticides, herbicides and fertilizers to the storm drain system and receiving waters.
- Prevent the disposal of landscape waste into the storm drain system.
- Minimize the trash, debris and other pollutants from entering Permitee-owned recreational water bodies.
- Discharge municipal swimming pool water in a manner that will not contribute pollutants to receiving waters.

Storm Drain Operation and Management

The storm drain system functions primarily to collect and convey surface runoff to receiving waters during storms in order to prevent flooding. A common municipal activity includes the maintenance of the storm drain system to maintain hydraulic function as intended during storms. The goal of this program is to reduce the impact of storm drain operation and maintenance activities on stormwater quality.

The objectives of this program component are to:

- Inspect and clean catch basins annually and keep appropriate records.
- Remove trash and debris annually from open channels and properly dispose of these materials to prevent them from being washed to receiving waters.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained and cleaned up, or eliminated.
- Review maintenance activities to verify that they minimize the amount of pollutants discharged to receiving waters.

Streets and Roads Maintenance

Streets and roads may collect litter and debris from nearby activities, as well as from vehicular traffic. During the course of routine maintenance waste materials are often generated. The goal of this component is to reduce the impact of Permittee street and road operations and maintenance on stormwater quality.

The objectives of this program component are to:

- Sweep curbed streets to reduce the discharge of pollutants associated with activities occurring in street and road rights-of-way.
- Minimize the discharge of pollutants associated with the maintenance of streets and roads.

Parking Facilities Management

Permittees who own parking lots with more than 25 parking spaces located in areas with potential exposure to stormwater must have a parking facilities management plan. The goal of this component is to reduce the impact of these parking facilities on the quality of stormwater discharges and receiving waters. The objective of this program component is to remove debris from parking facilities to reduce the amount of material that comes into contact with stormwater.

Public Industrial Activities

Industrial activities, whether private or public, have the potential to discharge pollutants to the storm drain system. Many industrial facilities are subject to the California General Industrial Activities Storm Water Permit (General Industrial Permit) for control of stormwater pollution. The goal of the General Industrial Permit is to reduce the impact of industrial facilities on stormwater quality. This provision of the Permit may procedurally simplify and reduce the cost of Permittees' compliance for their industrial facilities (Phase 1) by providing the option to obtain coverage under the Permit in lieu of the General Industrial Permit. The objective of this program component is to comply with all requirements and conditions contained in the General Industrial Permit.

Emergency Procedures

Each Permittee must consider the impact of discharges to the storm drain system during emergency repairs of essential public services and infrastructure, and response to natural disasters. The goal is to reduce the impact of emergency response activities on receiving waters, to the extent possible, without compromising public health and safety.

The objectives of this program component are to:

- Recognize that public health and safety are the highest priority when conducting emergency response activities.
- Protect surface water quality by incorporating appropriate BMPs into emergency response activities to the extent possible.

ES.6 MODEL PUBLIC INFORMATION AND PARTICIPATION PROGRAM

The purpose of the Public Information and Participation Program (Five-Year Public Education Plan) is to provide the framework for a comprehensive educational stormwater and urban runoff outreach approach that will reach as many Los Angeles County residents as possible. The Five-Year Public Education Plan is research-based, broad-based with overarching themes, flexible, adaptable, and simplistic in order to produce behavior change.

Groups of residents differ significantly in terms of the amount of pollution they contribute, their demographics and lifestyle, attitudes related to stormwater pollution, and probability of changing their behaviors. By better understanding the general County resident population, resources may be directed to those segments of the population that pose the greatest threat to stormwater quality and who represent the greatest opportunity to respond to a public education campaign.

Some key strategies developed for successful implementation of the education model include:

- Creating Overarching Approach – A unified overall public education approach sets a "tone" for the program and once established helps target audiences identify the program with its pollution prevention message.
- Building Partnerships – Integrate County and city programs, cooperate with environmental groups, co-Permittees, and other public and business groups to disseminate public education program materials and special events information.
- Unify Pollution Prevention Efforts – Link all pollution prevention efforts (such as recycling, used oil and household waste) under a single agenda rather than under multiple prevention splinter programs.
- Develop "How To" Instructions – Provide specific guidelines supported by simple easy to remember tasks and concise "how to" instructions for pollution prevention actions that residents and business may incorporate into their everyday routines.
- Monitoring and Evaluation System – Establish an evaluation system to measure program effectiveness by assessing the number of people who show increased awareness, intent and/or actions in reducing stormwater pollution. Re-evaluate and enhance program components on continually based on program effectiveness.

- Multiple Audience Impact – Develop program materials and activities that may be implemented and have impact on more than one audience at a time.

The Model Public Information and Participation Program also includes reporting requirements for Permittees to support the Annual Program Report to the Regional Board. These reporting requirements include the documentation of information such as:

- Number of media outlets contacted to run public service announcements (PSAs),
- Dollar value and number of media buys,
- Audience of the media PSAs,
- List of local businesses enlisted to place non-traditional advertising (point-of-purchase displays, product neck hangers, etc.)
- Numbers and types of stormwater pollution prevention materials distributed, and
- Whether there is an increase in the number of illicit discharge reports to the Permittee.

The municipal storm water National Pollutant Discharge Elimination System (NPDES) permit (Permit) issued to Los Angeles County and 85 cities by the Los Angeles Regional Water Quality Control Board (Regional Board) on July 15, 1996 contains a requirement for Permittees to develop and implement a Public Agency Activities Program. This document describes a model program that Permittees can use to develop and implement their own Public Agency Activities Program in compliance with the Permit.

Part IV.C of the Permit contains requirements specifically for public agency activities, as summarized in Table 1. A copy of the applicable Permit section is included as Appendix A and can be used to determine specific language. The Permit requirements are fully enforceable and can only be changed through action by the Regional Board. The model program contents will be reviewed and approved by the Regional Board staff (Executive Officer) and can be changed by approval of the Executive Officer.

Table 1

Permit Requirements - Public Agency Activities

Permit Section	*Requirement (Summary)*	*Compliance Date*
IV.B	Develop and implement a program to reduce storm water impacts from public agency activities. The program shall include, at a minimum, procedures for the following:	Four months after commencement of next fiscal year following Executive Officer approval of model program, but no later than 7/30/99.(1)
IV.C.1	Sewage systems operations	
IV.C.2	Public construction activities management	
IV.C.3	Vehicle maintenance/ material storage facilities management	
IV.C.4	Landscape and recreational facilities management	
IV.C.5	Storm drain operation and management	
IV.C.6	Streets and roads maintenance	
IV.C.7	Parking facilities management	
IV.C.8	Public industrial activities (optional)	
IV.C.9	Emergency procedures	

(1) Provided that such approval is issued not later than 90 days prior to the commencement of the Permittee's fiscal year.

Implementation activities for each of the nine program components are discussed in the first nine sections of this model program. Additionally, the Permit contains a requirement to "include a discussion of the ongoing investigation of the feasibility of dry weather flow diversion from the MS4 (municipal storm drain system) to municipal wastewater treatment plants, where appropriate." The discussion of dry weather flow investigations is included as Section 10. There are no requirements for Permittee implementation activities related to dry weather flow diversion.

1.1 INTRODUCTION

1.1.1 Program Goal and Objectives

This program component is applicable to all Permittees who own and operate a sewage collection system. Although sewage systems themselves are not a regular source of storm water pollution, raw sewage contains pollutants that can pose a serious threat to both human health and the quality of receiving waters if they enter the storm drain system through incidents such as spills, leaks, or overflows. The goal of this program is to reduce the impact of Permittee-owned sewage system operations on storm water quality.

Each Permittee's program must meet the requirements of the Los Angeles County municipal storm water permit (Permit), as summarized in Table 1-1.

Table 1-1

Permit Requirements - Sewage Systems Operations

Report Section	*Requirement (Summary)*	*Permit Section*
1.2.1	Implement procedures to keep sewage spills or leaks from facilities operated by a Permittee from entering the municipal storm drain system to the maximum extent practicable.	IV.C.1.a
1.2.1	Implement procedures to respond to overflows and investigate complaints.	IV.C.1.c
1.2.2	Implement procedures to identify, repair, and remediate sanitary sewer blockages, exfiltration, overflow, and wet weather overflows from sanitary sewers operated by a Permittee to the municipal storm drain system.	IV.C.1.b
1.2.3	Implement procedures to insure that the Permittee is able to investigate any suspected connections or cross-connections from the sanitary sewer systems to the municipal storm drain system.	IV.C.1.d
1.2.4	Implement procedures to notify public health agencies with discretionary decision authority on beach closures when there is a threat to public health.	IV.C.1.e

The objectives of this program component are to:

- Keep any sewage system overflows or leaks from entering the storm drain system or receiving waters to the maximum extent practicable.
- Identify, repair and remediate sewage system blockages, exfiltration, and overflows, and implement procedures for investigating suspected cross-connections.
- Notify public health authorities when there is a threat to public health.

1.1.2 Facilities Covered by the Permit

Facilities that are covered under this program include sanitary sewer pipes and pump stations owned and operated by the Permittee. The owner of the sanitary sewer facilities is the entity responsible for carrying out this prevention and response program.

1.2 PROGRAM IMPLEMENTATION ELEMENTS

1.2.1 Spill/Leak/Overflow Response and Containment

The following procedures will be implemented, where applicable, to contain spills, leaks and overflows from sanitary sewer pipes and pump stations.

- When a spill, leak, and/or overflow occurs, keep sewage from entering the storm drain system to the maximum extent practicable by covering or blocking storm drain inlets and catch basins, or by containing and diverting the sewage away from open channels and other storm drain facilities (using sandbags, inflatable dams, etc.).
- Remove the sewage using vacuum equipment or use other measures to divert it back to the sanitary sewer system.
- When disinfecting a sewage contaminated area, take every effort to ensure that the disinfectant or sewage treated with the disinfectant is not discharged to the storm drain system or receiving waters. Methods may include blocking storm drain inlets, containing and diverting disinfectant and sewage away from open channels and other storm drain fixtures, and removing the material with vacuum equipment.

General guidance on responding to overflows and investigating complaints is included in Appendix B, Section B.1, and detailed guidance is provided in the model Illicit Connection/Illicit Discharge Elimination Program.

1.2.2 Preventive and Corrective Maintenance

The following procedures will be implemented, where applicable, to identify, repair and remediate sanitary sewer blockages, exfiltration, and overflows.

- During routine maintenance and inspection, note the condition of sanitary sewer structures and identify areas that need repair or maintenance.
- Document suggestions and requests for repair and report the information to the appropriate manager or supervisor.
- Prioritize repairs based on the nature and severity of the problem.

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Guidance on identifying, reporting, and repairing potential sewage system problems is included in Appendix B, Section B.2.

1.2.3 Cross-Connections

The following procedures will be implemented, where applicable, to verify that suspected connections or cross-connections are investigated.

- Educate field staff to recognize suspected cross-connections to the sanitary sewer system during their daily activities.
- Maintain accurate records of both sewer connections and new sewer lines.

Guidance on maintaining records is included in Appendix B, Section B.3. Guidance on conducting cross-connection and other illicit connection investigations is provided in the model Illicit Connection/Illicit Discharge Elimination Program.

1.2.4 Public Health Agency Notification

The following procedures will be implemented, where applicable, to notify public health agencies with discretionary decision authority to close beaches when a sewage release may pose a threat to public health.

- Notify the County Department of Health Services, or other local health agency, of the spill location and potential discharge point to the receiving water. The County may be reached by calling the Hotline number (800) 303-0003 or (888) CLEANLA.
- Notify other agencies as needed to help determine the extent of the threat and document the release.

The 24-hour spill response telephone numbers for all Permittees are included in Appendix B, Section B.4.

2.1 INTRODUCTION

2.1.1 Program Goal and Objectives

This program component is applicable to all Permittees who conduct or contract out the planning, design, or construction of public facilities. One goal of this program component is that appropriate permanent BMPs are incorporated into the planning and design of public facility projects with the potential for having a significant effect on storm water quality when completed by virtue of their size, nature of on site activities, or other factors. The second goal of this program is that temporary best management practices (BMPs) are implemented to reduce the discharge of pollutants from the construction sites of public facility projects.

Each Permittee's program must meet the requirements of the Los Angeles County municipal storm water permit (Permit), as described in Table 2-1.

Table 2-1

Permit Requirements - Public Construction Activities Management

Report Section	*Requirement (Summary)*	*Permit Section*
2.2.1	Implement storm water management requirements for the design and construction of public facilities consistent with the requirements and time lines specified for private development in Part 2.III.A and III.B.	IV.C.2.a
2.2.2 (optional)	Implement procedures to seek coverage, as an option, under this Order for construction activity with a disturbed area of five acres or more (Phase 1, 40 CFR 122.26) which is undertaken by or on behalf of the Permittee.	IV.C.2.b

The objectives of this program component are to:

- Identify public facility projects that when completed (operational phase) have the potential for significantly effecting storm water quality.
- Select and incorporate appropriate permanent BMPs into the planning and design of public facility projects.
- Select and incorporate appropriate construction control measures for storm water quality management from construction sites.
- Conduct an inspection program, including enforcement procedures as necessary, to verify that construction control measures are implemented and performed effectively throughout the construction period.

2.1.2 Public Facilities Subject to the Model Program

This program element applies to all public works Development Construction Projects in Los Angeles County owned or operated by a Permittee including, but not limited to, site development, building, roadway, drainage, utility and other infrastructure projects, except for projects determined to be exempt from this program. Projects exempt from the planning and design requirements are discussed in Section 2.2.1, and projects exempt from temporary construction site requirements are discussed in Section 2.2.2.

A public works Development Construction Project is a site where construction activities such as clearing, grading, excavation, road construction, structure construction, or structure teardown results in soil disturbance. Construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility, nor does it include emergency construction activities required to immediately protect public health and safety."

2.2 PROGRAM IMPLEMENTATION ELEMENTS

2.2.1 Planning and Design Requirements

The Permit (Part 2.IV.C.2.a) requires that the stormwater management requirements for the design and construction of public facilities be consistent with the requirements for private development projects. A Standard Urban Storm Water Mitigation Plan (SUSMP) was adopted by the Regional Board for eight enumerated categories of private development projects. Although public agencies do not plan and design these eight categories of projects, public facilities may have similar functions or characteristics or may conduct similar activities after construction is completed.

The planning, design, approval, and oversight of public facility projects differ from private development projects. For example, private development projects are regulated through a process of a development plan approval (i.e., conditions of approval), building or grading permit applications, and permit conditions. Public facility projects undergo design review by the contracting agency; are issued permits or similar administrative authorizations; and are then regulated through the enforcement of contract terms and approved plans and specifications. Since the municipality is also the project owner, construction of public facilities according to approved plans and specifications is ensured through inspection and oversight by the project owner and enforcement of contract provisions. Review, approval, and inspection of public

facilities and private development projects are generally performed by different municipal departments.

Each Permittee shall implement a planning and design program for their public facility projects that includes the following components:

1) a system for determining the appropriate category (Priority or Exempt) for a public facility project;
2) a recommended list of BMPs to be considered during planning and design of public facility projects; and
3) a process to ensure that public facility projects incorporate appropriate BMPs into project plans or design.

The Permit defines Priority and Exempt projects as follows:

- Planning Priority Projects are development and redevelopment projects requiring discretionary approval which the Building Official (or equivalent municipal authority) determines may have a potential significant effect on storm water quality;" and
- Planning Exempt Projects are development and redevelopment projects which the Building Official (or equivalent municipal authority) determines will not have a potential significant impact on storm water quality." [Note: This definition of "exempt" projects differs from that found in the Public Agency Construction Model Program.]

The process for determining whether a public facility project is a Planning Priority Project or a Planning Exempt Project is shown on Figure 2-1 and is described in the remainder of this section.

2.2.1.1 *Projects Requiring Discretionary Approval*

The first factor in categorizing a public facility project as either a Planning Priority Project or a Planning Exempt Project is to determine if the project requires discretionary approval. If a proposed project does not require discretionary approval, the project is a Planning Exempt Project and is exempt from the requirements described herein.

Discretionary approval for purposes of this Model Program will be interpreted consistent with Section 15357 of the California Environmental Quality Act (CEQA) Guidelines. Section 15357 states:

> *"Discretionary project" means a project which requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity, as distinguished from situations where the public agency or body*

merely has to determine whether there has been conformity with applicable statutes, ordinances, or regulations.

Ministerial approvals are defined in Section 15369 of the CEQA Guidelines, which states:

"Ministerial" describes a government decision involving little or no personal judgment by the public official as to the wisdom or manner of carrying out the project. The public official merely applies the law to the facts as presented but uses no special discretion or judgment in reaching a decision. A ministerial action involves only the use of fixed standards or objective measurements, and the public official cannot use personal, subjective judgment in deciding whether or how the project should be carried out.

Ministerial approvals should not be confused with projects that are determined to be Categorically Exempt under CEQA. Categorically Exempt projects are a distinct type of exemption under CEQA. By definition, any type or category of project that is treated by a particular jurisdiction as typically being Categorically Exempt under CEQA, is a project requiring discretionary approval.

Consistent with Section 15268(d) of the CEQA Guidelines, "Where a project involves an approval that contains elements of both a ministerial action and a discretionary action, the project will be deemed to be discretionary..." Throughout the remainder of this Section 2.2.1, such a discretionary approval or discretionary action by a public agency or body will be referred to as a "discretionary action."

While the definitions of "discretionary" and "ministerial" as used in this section of the Model Program rely on language from CEQA Guidelines, the process outlined herein for public facility projects is independent of the CEQA determination.

2.2.1.2 Project Determination as Planning Priority or Planning Exempt

The second factor in categorizing whether a public facility project is a Planning Priority Project or a Planning Exempt Project shall be based upon the contemplated project characteristics. The model checklist provided in Figure 2-2, or a substantially similar checklist, shall be completed for the proposed project.

The model checklist lists project characteristics that may be used to identify potentially significant sources of storm water pollutants. Those project characteristics[2] are:

- A public facility greater than 100,000+ square feet?
- Vehicle or equipment maintenance areas or structures, including washing?
- Fuel dispensing?
- Food service facility?
- Waste handling or storage, excluding typical office waste?
- Outdoor handling or storage of hazardous materials or waste?
- Hillside location (as defined by the local jurisdiction)?
- Outdoor work areas for activities such as, but not limited to, welding; cutting; metal fabrication; assembly; application of paints, coatings, or finishes; pre-cast concrete fabrication; etc.?
- Parking lots ≥ 5,000 square feet or with ≥ 25 parking spaces and potentially exposed to stormwater?

For consistency across the various component programs of the Countywide Storm Water Management Plan:

- The determination of the number of square feet for a public facility will be based on total impermeable area as opposed to lot size or building footprint. This interpretation is used because storm water runoff from paved areas associated with buildings must be managed.
- Hillside is defined as a parcel (or parcels) located in an area with known erosive soil conditions, where the project plans include grading on any natural slope that is 25 percent or greater.

If in completing the Planning Priority/Exempt Checklist, no project characteristics are identified, the project is exempt from the requirements of this Model Program.

If one or more project characteristics are identified in completing the Planning Priority/Exempt Checklist, the project is a Planning Priority Project subject to the requirements of this Model Program.

2 Activities or materials potentially exposed to stormwater and not protected by storm-resistant sheltering. Such activities include public facilities operation and construction work. Such materials include material handling equipment, industrial machinery, raw materials, intermediate products, by-products, and waste products however packaged.

Figure 2-1. Flow Diagram for Determination of Project as Priority or Exempt

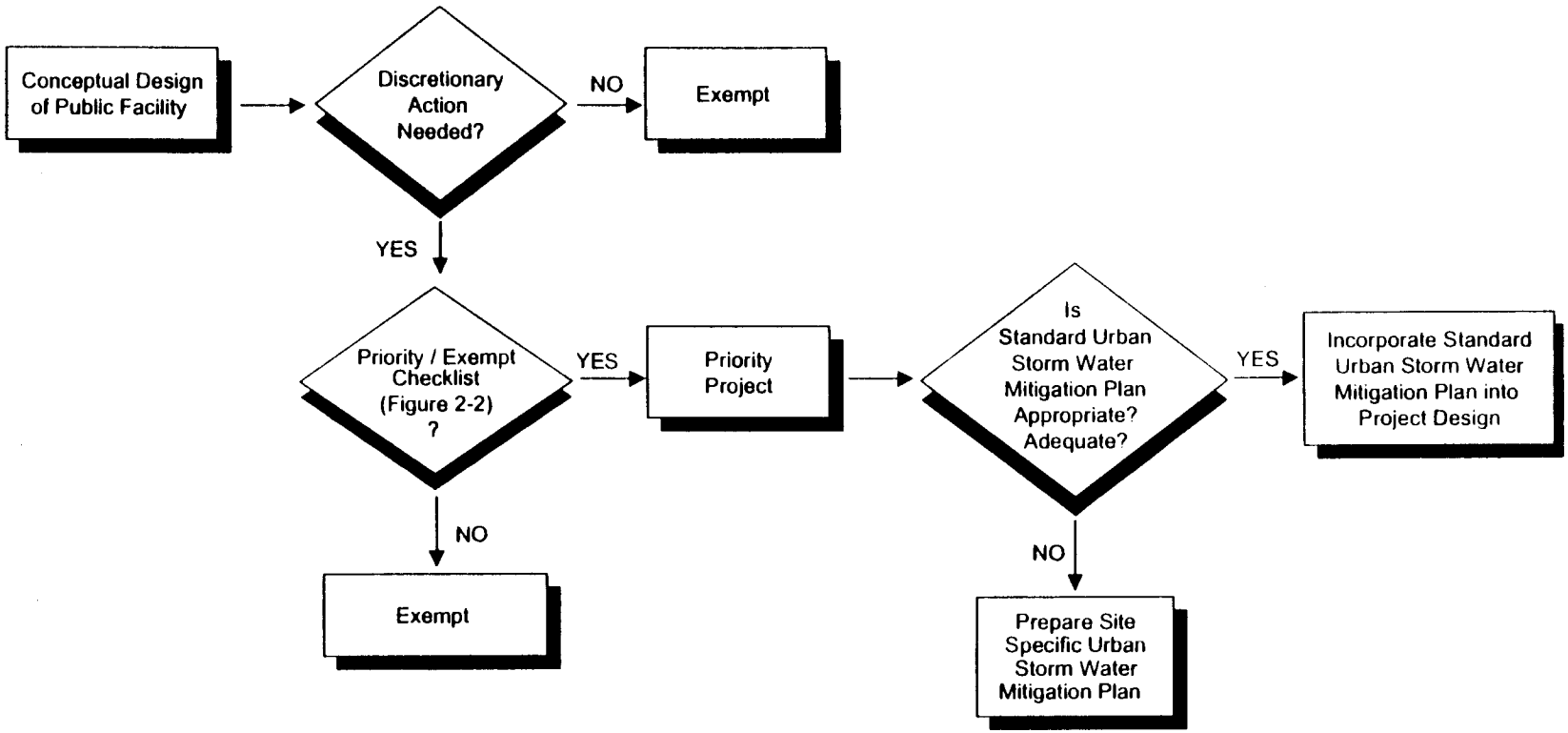

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Figure 2-2. Planning Priority / Exempt Checklist

MODEL CHECKLIST FOR CATEGORIZING DISCRETIONARY PUBLIC FACILITY PROJECTS[3] AS PRIORITY OR EXEMPT

Project Name: _____

Project Location: _____

Description of Project: _____

_____

PRIORITY PROJECT: Any question is answered "YES."

EXEMPT PROJECT: Every question is answered "NO."

Project Characteristics	Yes	No
A public facility greater than 100,000+ square feet?		
Vehicle or equipment maintenance areas or structures, including washing?		
Fuel dispensing?		
Food service facility?		
Waste handling or storage, excluding typical office waste?		
Outdoor handling or storage of hazardous materials or waste?		
Hillside location (as defined by the local jurisdiction)?		
Outdoor work areas for activities such as, but not limited to, welding; cutting; metal fabrication; assembly; application of paints, coatings, or finishes; pre-cast concrete fabrication; etc.?		
Parking lots ≥ 5,000 square feet or with ≥ 25 parking spaces and potentially exposed to stormwater?		
Outdoor animal confinement (e.g., stables, kennels, etc.)?		

3 This model checklist applies only to Public Agency Planning Projects as defined in Section 2.1.2 of this Model Program.

2.2.1.3 Storm Water Mitigation Plan

Prior to administrative authorizations or issuance of permits for Planning Priority Projects, the Permittee shall require that the pertinent requirements of the SUSMP be incorporated into the planning and design of the Planning Priority Project.

2.2.1.4 BMP Selection for Priority Projects

The Permittee should address the potential water quality impacts of storm water discharges associated with public facilities early in the project planning and design process. In general, the sooner potential storm water impacts are considered, the greater the opportunity to include efficient and effective BMPs into project design and plans. A recommended BMP selection process is described in the remainder of this Section 2.2.1.4, and the recommended BMPs for consideration in Planning Priority Projects are provided in Appendix C.

Goals and Objectives

Site-specific conditions for a public facility project determine which BMPs are most appropriate for a site. Prior to selecting BMPs, a good understanding of post-construction activities and potential sources of storm water pollutants is needed. The BMPs considered should address the potential pollutants reasonably expected at the site once the facility is occupied or operational. The permanent BMPs planned for a public facility should fulfill the following goals and objectives:

- be appropriate for the given site constraints;
- be feasible to implement and maintain;
- ensure no adverse storm water quality impacts;
- promote improved water quality;
- provide effective pollutant source control or removal capability;
- meet regulatory requirements; and
- be economically feasible.

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BMP Selection Criteria

Appropriate BMPs may be selected by using selection criteria that identify the capabilities and limitations of each BMP. Common criteria used in screening and selecting BMPs during the planning and design stage are:

- project characteristics (e.g., potential sources of storm water pollutants after construction is completed);
- site factors (e.g., slope, high water table, soils, etc.);
- pollutant removal capability;
- short-term and long-term costs;
- responsibility for maintenance;
- contributing watershed area; and
- environmental impact and enhancement.

The BMP selection criteria listed above should be applied in accordance with the overall objective of this Model Program, i.e., to reduce pollutants in discharges to the MEP to achieve water quality objectives and protection of the beneficial uses of receiving waters. Some BMPs will clearly be more appropriate and effective in some site-specific situations than others, and BMP selections should reflect this variability. These factors are described in more detail in Appendix D.

Select Best Alternatives

Using the list of recommended BMPs for Planning Priority Projects, the designer should use the selection criteria to select the best alternatives for the project conditions, characteristics, and concerns. This may be done numerically, by rating and then ranking the BMPs. Or the selection process may be done in a more subjective, non-numerical way using experience and professional judgment to select the best alternative BMPs. Either way, the designer should document the selection process to provide justification for the system of BMPs incorporated into project plans and designs.

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Design and Installation

After the appropriate BMPs are selected for a given project, the designer should design the BMPs and incorporate them into the project plans and specifications. It is important that the project plans and specifications include adequate information for the BMPs to be properly installed. Improper installation is one of the most common reasons for water quality controls to not function as designed.

Maintenance

Maintenance is crucial to the proper and continued functioning and effectiveness of the BMPs. Designers should provide guidance on the proper maintenance of the BMPs so that it may be provided to the entity responsible for BMP maintenance.

2.2.1.5 Changes in Project after Initiation of Construction

Prior to final administrative authorization or approval of project permits, projects previously designated as Planning Exempt may become subject to the requirements of Planning Priority Projects. If the proposed changes would add project characteristics included in the model Planning Priority/Exempt Checklist, the project shall be required to incorporate appropriate permanent BMPs into the project's revised design and plans.

2.2.2 Construction Activity Requirements

2.2.2.1 Overview of Development Construction Projects Subject to the Model Program

The overall process of determining what requirements are applicable to a public agency Development Construction Project is depicted in the flowchart shown in Figure 2-3.

Construction Priority Project

In certain situations, where impact to storm water quality is a greater threat, Development Construction Projects should be given greater scrutiny to ensure that minimum requirements are met. These situations are:

Projects where a greater threat to water quality exists, but which are not subject to the California General Permit for Storm Water Discharges Associated with Construction Activity are called Construction Priority Projects. Three conditions determine a Construction Priority Project:

1) The project is in or adjacent to an environmentally sensitive area, or

2) The project will disturb greater than two acres, or

3) The project is located in a hillside area (as defined by the local jurisdiction) where soil disturbance occurs during the rainy season.

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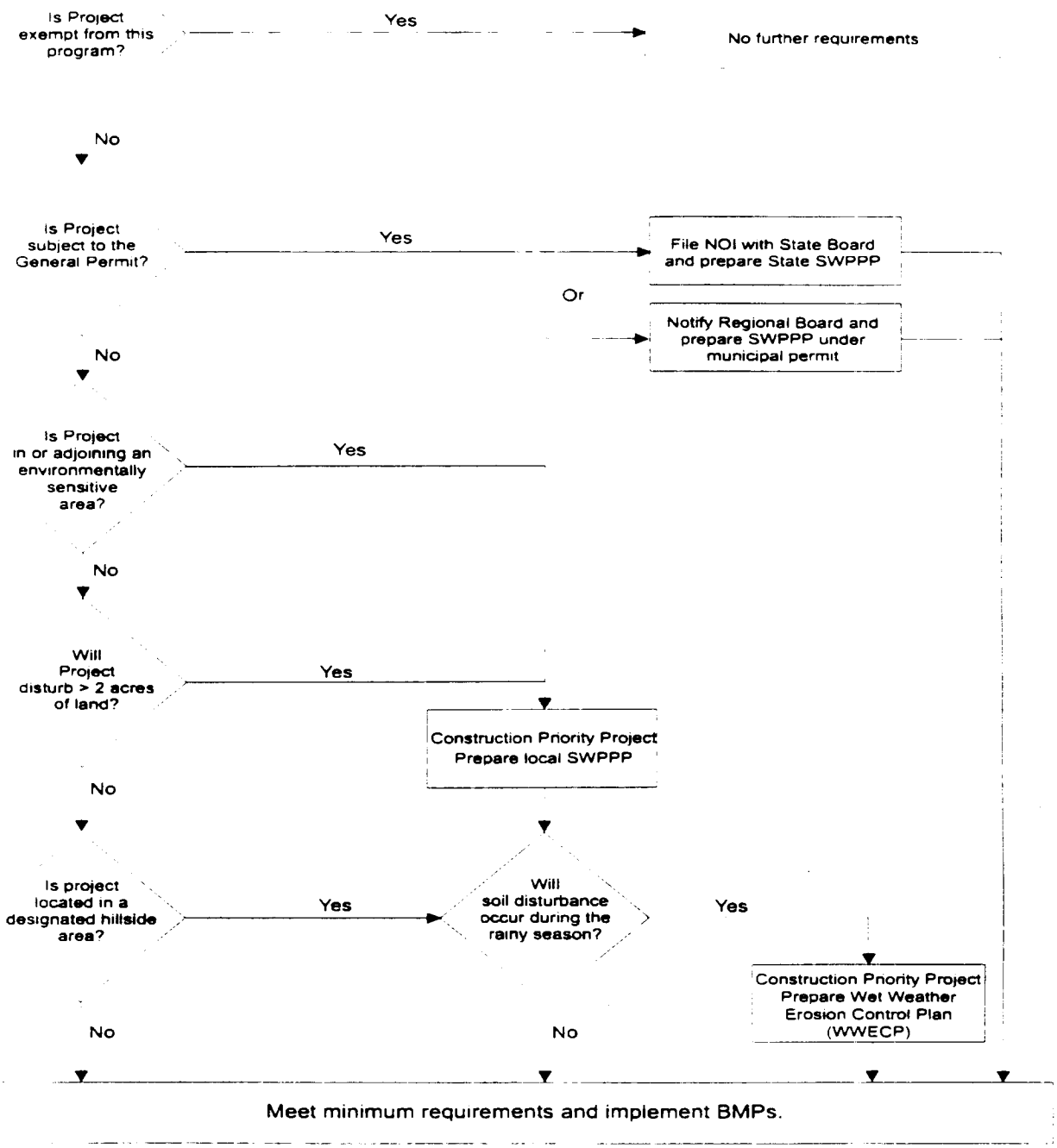
Figure 2-3. Construction Control Measures



Projects Subject to the General Construction Permit

A project is subject to the California General Permit for Storm Water Discharges Associated with Construction Activity (hereinafter referred to as the General Construction Storm Water Permit) if it disturbs 5 acres or more of soil, or the project results in the disturbance of less than 5 acres but is part of a larger common plan of development or sale that exceeds 5 acres.

Exempt Projects

Permittees may exempt certain types of Development Construction Projects that pose minimum risk of storm water pollution as defined in Section 2.2.2.1.4.

2.2.2.1.1 Minimum Requirements

All public agency Development Construction Projects covered under this program must implement BMPs as necessary to reduce pollutants to the Maximum Extent Practicable[4] (MEP) to meet the minimum water quality protection requirements as defined in Table 2-2. Construction contract documents (plans and specifications) for all covered projects will include these minimum requirements.

Table 2-2
Minimum Water Quality Protection Requirements for Development Construction Projects

Category	Minimum Requirements	BMPs(1)
Erosion and Sediment Control	Sediments from areas disturbed by construction shall be retained on site, using structural drainage controls to the MEP, and stockpiles of soil shall be properly contained to minimize sediment transport from the site to streets, drainage facilities or adjacent properties via runoff, vehicle tracking, or wind.	Sediment Controls
Construction Materials Control	Construction-related materials, wastes, spills or residues shall be retained on site to minimize transport from the site to streets, drainage facilities or adjoining properties via runoff, vehicle tracking, or wind. Runoff from equipment and vehicle washing shall be contained at construction sites unless treated to remove sediment and pollutants.	Site Management; Material and Waste Management

(1) BMPs that may be used to meet the minimum requirements are described in Section 2.2.2.1.5.

4 Maximum Extent Practicable (MEP) is the standard for implementation of storm water management programs to reduce pollutants in storm water. MEP refers to storm water management programs taken as a whole. It is the maximum extent possible taking into account equitable consideration and competing facts, including, but not limited to: the gravity of the problem, public health risk, societal concern, environmental benefits, pollutant removal effectiveness, regulatory compliance, public acceptance, implementability, cost and technical feasibility. Section 402(p)(3)(B)(iii) of the Clean Water Act requires that municipal permits "...shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and systems, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

2.2.2.1.2 Construction Priority Projects

Construction Priority Projects are projects that have the potential to significantly affect storm water quality during construction but which do not meet the criteria (i.e., acreage[5]) to be subject to the General Construction Storm Water Permit. Construction Priority Projects will be identified by the Permittee during the design process, using the following criteria:

- The project is not exempt from this program and not subject to the General Construction Storm Water Permit, and
- The project will result in soil disturbance of more than 2 acres of land; or
- The project is in or adjacent to an environmentally sensitive area[6], or
- The project is located in a designated hillside area and soil disturbance will occur at the project site in the rainy season.

Application of these criteria is depicted in the flow diagram in Figure 2-3.

Construction Priority Projects will require preparation of a Local Storm Water Pollution Prevention Plan (SWPPP) covering construction materials and waste management control prior to beginning construction and implementation of the Local SWPPP year-round. A copy of the Local SWPPP must be kept on the project site at all times after the start of construction. It shall include:

- The name, location, period of construction, and a brief description of the project
- Contact information for the Permittee and contractor
- Name, location, and description of any environmentally sensitive areas located in or adjoining the project
- A list of major construction materials, wastes, and activities at the project site
- A list of best management practices to be used to control pollutant discharges from major construction materials, wastes, and activities
- A site plan indicating the selection of BMPs and their location, where appropriate.

Construction Priority Projects will also require preparation and implementation of a Wet Weather Erosion Control Plan (WWECP) if the project will leave soil disturbed during the rainy

5 A construction project of 5 acres or more or that which is less than 5 acres but is part of a larger common plan of development or sale. This acreage criteria may be revised downward by the USEPA under Phase II storm water regulations.

6 Examples of such areas may be wetlands, habitats of endangered, threatened, or rare species, wildlife dispersal or migration corridors, areas of locally designated species such as heritage trees, or locally designated natural communities such as oak forest or coastal habitat.

season, defined as November 1 through April 15. The WWECP must be prepared not later than 30 days prior to the beginning of each rainy season (i.e., by October 1) during which soil will be disturbed, and implemented throughout the entire rainy season. The WWECP shall include the following information:

- The name, location, period of construction, and a brief description of the project
- Contact information for the Permittee and contractor
- A site map showing the location of erosion control and sediment control BMPs that will be implemented for the rainy season.

For Construction Priority Projects, Permittees may elect to prepare the Local SWPPP and the WWECP (if required) as part of the construction contract bid package, or they may include the requirement in the contract documents for the contractor to prepare these plans. In either case, the contract documents must require the contractor to implement the Local SWPPP throughout the duration of the construction project and the WWECP throughout the duration of the rainy season. Construction contract documents will require that:

(1) The Local SWPPP be prepared before any work can start on the project and be kept on the project site at all times after the start of construction, and

(2) The WWECP (if required) be prepared within 30 days of the start of the rainy season before any soil disturbing activity can start and be kept on the project site through the end of the rainy season.

2.2.2.1.3 Projects Subject to the General Construction Permit

A project is subject to the General Construction Storm Water Permit if it disturbs five acres or more of soil, or the project results in the disturbance of less than five acres but is part of a larger common plan of development or sale that exceeds five acres. Construction sites that result in soil disturbance of five acres or greater will require the preparation and implementation of a state SWPPP meeting the requirements of the General Construction Storm Water Permit. The state SWPPP must address all categories of control measures, and has specific documentation requirements. The General Construction Storm Water Permit can be viewed or downloaded from the SWRCB's web page: www.swrcb.ca.gov/stormwtr/construction.htm.[7] A properly prepared state SWPPP satisfies all requirements of a Local SWPPP and WWECP required under this model program.

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7 A copy of the General Construction Permit can also be obtained from the Los Angeles Regional Board at 320 W. 4th Street, Suite 200, Los Angeles, CA 90013; telephone 213.576.6600.

For public agency Development Construction Projects subject to General Construction Storm Water Permit, Permittees must file a Notice of Intent with the SWRCB and prepare the state SWPPP (or require the construction contractor to prepare it) before construction can begin. As an alternative, Permittees may seek coverage for such projects under the municipal Permit, as described in Section 2.2.3.

2.2.2.1.4 Exempt Projects

Permittees may exempt certain types of projects from the program that pose a minimum risk of storm water pollution as determined by the local building official or equivalent municipal authority. Exemptions established for public agency Development Construction Projects shall be the same as those established for private development construction projects.

A list of specific types of projects that are deemed to be exempt include:

- Routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility (permit definition)
- Emergency construction activities required to protect public health and safety (permit definition)
- Interior remodeling with no outside exposure of construction materials or construction waste to storm water
- Mechanical work
- Electrical work
- Sign work

The local building official (or equivalent municipal authority) may designate additional types of projects as exempt projects. Types of Development Construction Projects may be designated exempt if the project type meets all of the following criteria:

- No significant soil disturbing activity
- No outside storage or exposure of construction materials or construction wastes to storm water
- The activity poses a minimal risk of storm water pollution

2.2.2.1.5 Best Management Practices

BMPs that may be implemented for Construction Priority Projects to meet the minimum water quality protection requirements are summarized in Table 2-3. These BMPs have been organized into four major categories:

- ***Sediment Control.*** Feasible methods of trapping eroded sediment so as to prevent a net increase in sediment load in storm water discharges from the site.
- ***Erosion Control.*** Measures that prevent erosion and keep soil particles from entering storm water, lessening the eroded sediment that must be trapped, both during and after the completion of construction.
- ***Site Management.*** Methods to manage the construction site and construction activities in a manner that prevent pollutants from entering storm water, drainage systems or receiving waters.
- ***Materials and Waste Management.*** Methods to manage construction materials and wastes that prevent their entry into storm water, drainage systems, or receiving waters.

For non-priority projects any combination of BMPs that meet the minimum water quality protection requirements may be utilized. Construction Priority Projects must prepare a Local SWPPP and WWECP that considers all listed BMPs, and, at a minimum, must include the following BMPs:

- ***Sediment Control.*** At site perimeters, below significant slopes (at a minimum applied to grades of 1:5 V:H or greater), and at other similar locations, the use of at least one type of BMP such as silt fence, straw bale or sand bag barrier to minimize the transport of sediment. At interior storm drain inlets the use of at least one type of inlet protection BMP to minimize the transport of sediment offsite.
- ***Erosion Control.*** On completed disturbed surfaces, the use of at least one type of erosion control (soil stabilization) BMP during the rainy season.
- ***General Site Management and Materials and Waste Management.*** All BMPs applicable to specific construction operations, if such construction operations will occur at the site.

Guidance material about the BMPs that may be implemented to meet minimum water quality protection requirements will be provided by the Permittees to contractors. Similar guidance material will also be provided to site inspectors for use in assisting contractors to meet the minimum requirements. Three forms of guidance material are included in this model program:

- ***BMP Selection Matrix*** in Table 2-3 provides guidance for selecting BMPs for different types of construction activities. The columns on Table 2-3 list the types of

construction activities that pose a risk of causing storm water pollution. Each "x" within a column indicates a BMP that should be considered for this type of construction activity.

- ***BMP Selection Guidance*** is provided in Appendix E.
- ***BMP Fact Sheets*** describing each BMP are found in the California Storm Water Best Management Practice Handbooks. Construction Activities and are included in the model program for private Development Construction.

Additional informational materials will be developed and provided to developers/contractors through the Developer Information Program conducted under Part 2.III.A of the Permit and through the Five-Year Storm Water Public Education strategy, under Part 2.V.C. of the Permit.

R0001074

Table 2-3. Stormwater Pollution Controls for Construction

Storm Water Best Management Practices BMP [1]		Categories of Activities: Site Preparation/ Earthmoving — Clearing & Grubbing	Earthwork	Construction of Underground Structures — Foundations	Conduits (Open Cut)	Drilling	Tunnels	Construction of Above Ground Structures — Wood Frame	Structural Steel	Masonry & Concrete	Roofing & Coating	Construction of Roadways, Walkways & Parking Lots — Concrete	Asphalt	Base & Subgrade	Waterways — Channel Improvement	Water & Sediment Impoundment	Over Crossing	Under Crossing	Waterfront Construction	Planting & Landscaping — Irrigation Facilities	Seeding & Sodding	Mulching	Planting
General Site Management																							
Construction Practices																							
Dewatering Operations	CA01		X	X	X	X	X								X	X	X	X	X				
Paving Operations	CA02											X	X	X	X		X	X					
Structure Construction & Painting	CA03			X			X	X	X	X	X						X	X	X				
Vehicle & Equipment Management																							
Vehicle & Equipment Cleaning	CA30	X	X	X	X	X	X					X	X	X					X				
Vehicle & Equipment Fueling	CA31	X	X	X	X	X	X					X	X	X					X				
Vehicle & Equipment Maintenance	CA32	X	X	X	X	X	X					X	X	X					X				
Contractor Training																							
Employee/Subcontractor Training	CA40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Construction Materials & Waste Management [2]																							
Material Management																							
Material Delivery & Storage	CA10			X	X			X	X	X	X	X	X	X	X		X	X	X		X	X	X
Material Use	CA11			X	X			X	X	X	X	X	X	X	X		X	X	X		X	X	X
Spill Prevention & Control	CA12									X	X		X										
Waste Management																							
Solid Waste Management	CA20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hazardous Waste Management	CA21									X	X	X	X										
Contaminated Soil Management	CA22	X	X	X	X	X	X								X	X							
Concrete Waste Management	CA23			X	X		X			X		X			X		X	X		X			
Sanitary/Septic Waste Management	CA24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

(1) Numbers refer to California Best Management Practices Handbook
(2) Some practices are also covered under other regulatory programs.

R0001075

Table 2-3. Stormwater Pollution Controls for Construction (continued)

Storm Water Best Management Practices BMP [1]		Categories of Activities: Site Preparation/ Earthmoving — Clearing & Grubbing	Earthwork	Construction of Underground Structures — Foundations	Conduits (Open Cut)	Drilling	Tunnels	Construction of Above Ground Structures — Wood Frame	Structural Steel	Masonry & Concrete	Roofing & Coating	Construction of Roadways, Walkways & Parking Lots — Concrete	Asphalt	Base & Subgrade	Waterways — Channel Improvement	Water & Sediment Impoundment	Over Crossing	Under Crossing	Waterfront Construction	Planting & Landscaping — Irrigation Facilities	Seeding & Sodding	Mulching	Planting
Erosion Control																							
Site Plannning Considerations																							
Scheduling	ESC01	X	X		X							X	X	X	X	X	X	X	X	X	X	X	X
Preservation of Existing Vegetation	ESC02	X	X		X		X					X	X	X	X	X	X	X	X	X		X	
Vegetation Stabilization																							
Temporary Seeding & Planting	ESC10	X	X												X	X	X		X				
Temporary Mulching	ESC11	X	X												X	X	X		X				
Physical Stabilization																							
Geotextiles & Mats	ESC20	X	X												X	X	X	X	X				
Dust Control	ESC21	X	X		X							X	X	X	X	X	X	X	X	X	X	X	X
Temporary Stream Crossing	ESC22	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X		X	X	X	X
Construction Road Stabilization	ESC23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Diversion of Runoff																							
Earth Dike	ESC30	X	X		X										X	X		X	X		X	X	
Temporary Drains & Swales	ESC31	X	X		X										X	X		X	X				
Slope Drain	ESC32	X	X		X										X	X		X	X				
Velocity Reduction																							
Outlet Protection	ESC40	X	X		X										X	X			X				
Check Dams	ESC41	X	X		X										X	X			X				
Slope Roughening/Terracing	ESC42	X	X		X										X	X			X				

(1) Numbers refer to California Best Management Practices Handbook
(2) Some practices are also covered under other regulatory programs.

R0001076

Table 2-3. Stormwater Pollution Controls for Construction (continued)

Storm Water Best Management Practices BMP [1]		Categories of Activities																					
		Site Preparation/ Earthmoving		Construction of Underground Structures				Construction of Above Ground Structures				Construction of Roadways, Walkways & Parking Lots			Waterways					Planting & Landscaping			
		Clearing & Grubbing	Earthwork	Foundations	Conduits (Open Cut)	Drilling	Tunnels	Wood Frame	Structural Steel	Masonry & Concrete	Roofing & Coating	Concrete	Asphalt	Base & Subgrade	Channel Improvement	Water & Sediment Impoundment	Over Crossing	Under Crossing	Waterfront Construction	Irrigation Facilities	Seeding & Sodding	Mulching	Planting
Sediment Control																							
Silt Fence	ESC50	X	X		X										X	X		X	X				
Straw Bale Barrier	ESC51	X	X		X										X	X		X	X				
Sand Bag Barrier	ESC52	X	X		X										X	X		X	X				
Brush or Rock Filter	ESC53	X	X		X										X	X		X	X				
Storm Drain Inlet Protection	ESC54	X	X		X										X	X		X	X				
Sediment Trap	ESC55	X	X		X										X	X		X	X				
Sediment Basin	ESC56	X	X		X										X	X		X	X				
Stabilized Construction Entrance	ESC24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

(1) Numbers refer to California Best Management Practices Handbook
(2) Some practices are also covered under other regulatory programs.

R0001077

2.2.2.2 Site Inspection

Permittees will implement a site inspection program will to evaluate if the minimum water quality protection requirements are being met and to evaluate if Local SWPPPs and WWECPs or state SWPPPs are being implemented. Permittees will adopt and implement enforcement procedures to require that corrective actions be undertaken when the minimum water quality protection requirements are not being met. The site inspection program will include the following elements:

- Contractor self-inspections
- Permittee inspections
- Enforcement procedures.

2.2.2.2.1 Inspection Procedures

Public agency development construction projects are routinely checked by municipal inspectors to verify that the construction work is being done in accordance with the contract documents and applicable municipal codes. When a project is not in compliance with the contract documents or municipal codes, the inspectors have the authority to enforce the contract by issuing verbal warnings, written notices, withholding progress payments, or suspending work. Additional contract remedies may be taken for extreme cases, such as contract termination, or assessing penalties. Inspections may be conducted for various reasons, and at various times, and include inspections by the Permittee and routine contractor self-inspections.

Permittee Inspections

During the rainy season Permittees (or their designated agent) must conduct at least one inspection of all Construction Priority Projects and all projects subject to the General Construction Storm Water Permit. Designated inspectors (municipal or contracted consultant staff) will verify compliance with storm water quality requirements in the construction contract documents as part of the regular inspection process for public agency projects. When conducting inspections, the inspector will verify that the contractor is conducting the required self-inspections and will observe whether storm water quality management requirements are being met using the criteria discussed below in Section 2.2.2.2.2.

R0001078

Contractor Self-Inspections

Permittee construction contract documents will require the contractor to perform self-inspections for Construction Priority Projects. (Contractor self-inspections are a requirement of the General Construction Storm Water Permit.) Construction is a dynamic operation where changes are expected. BMPs for construction sites are usually temporary measures that require frequent maintenance to maintain effectiveness and may require relocation and re-installation, particularly as project grading progresses. Therefore, contractor self-inspections are required, particularly during the rainy season.

There are two primary purposes of contractor self-inspections:

- To ensure that BMPs are properly implemented and functioning effectively, and
- To identify maintenance (e.g., sediment removal) and repair needs.

Self-inspection records must be kept on site and made available for review by municipal inspectors during all inspections. At a minimum, contractor self-inspection records must note the inspection date, time, and observed conditions. An example form is included in Appendix E that may be provided to contractors by the Permittee for use in recording contractor self-inspection results.

At a minimum, contractor self-inspections must be performed according to the following schedule:

- Before every rainfall event that is predicted to produce observable runoff and after every rainfall event that produces observable runoff, and
- At 24-hour intervals during extended rainfall events (except weekends or holidays when there is no ongoing site activity on those days).

More frequent inspections would be effective to verify that contractors are maintaining BMPs in good condition, and Permittees may elect to require additional inspections. Suggested frequencies for additional inspections include monthly during the dry season and weekly during the rainy season.

2.2.2.2.2 *Inspection Criteria*

Criteria for All Sites

When conducting inspections, the most important element of the inspection is to ensure that appropriate controls are in place that reduce pollutants from entering the storm drainage system. If the inspector cannot affirmatively find that the minimum water quality protection requirements are being achieved, the inspector shall require the contractor to conform with those requirements.

The inspector may utilize the following framework when conducting an inspection:

(1) Determine what BMPs are necessary to meet the minimum requirements;

(2) Determine if BMPs are being used;

(3) Determine whether BMPs are being implemented properly; and

(4) Review developer's self-inspection checklist to determine whether minimum self-inspections have been performed.

An example checklist for documenting deficiencies and identifying corrective actions when conducting Permittee inspections is provided in Appendix E. If BMPs are either lacking or being implemented improperly. Section 2.2.2.2.3 provides a discussion of appropriate enforcement actions.

Criteria for Construction Priority Sites or Sites Subject to the General Construction Storm Water Permit

During the rainy season Permittees must conduct at least one inspection of all active Construction Priority Projects and all active projects subject to the General Construction Storm Water Permit. If the inspected site is not meeting minimum water quality protection requirements, Permittee inspectors must immediately direct compliance with these requirements and conduct a follow-up inspection to confirm that compliance is attained.

When conducting inspections of Construction Priority Projects or projects subject to the General Construction Storm Water Permit, the inspector will use the inspection checklist (or an equivalent) to evaluate conformance with minimum requirements and required BMPs and to document deficiencies and corrective actions. Appendix E provides an example checklist for site inspections.

If BMPs are either lacking or improperly implemented, Section 2.2.2.2.3 provides a discussion of appropriate enforcement actions. For sites subject to the General Construction Storm Water

Permit, if the SWPPP is not being implemented, notification of the Regional Board may be necessary. Guidance regarding notification of the Regional Board is provided in Section 2.2.2.2.4.

2.2.2.2.3 Procedures for Corrective and Enforcement Actions

Enforcement of storm water pollution prevention requirements for public agency Development Construction Projects will be done by municipal inspectors or contract inspection staff. Any conditions observed that constitute non-compliance with the contract documents are subject to enforcement action. Municipal or contract inspectors will conduct a follow-up inspection to determine if corrective actions have been taken in accordance with minimum requirements. Escalating enforcement steps, leading up to the issuance of stop work orders and providing flexibility for the inspector to establish appropriate compliance time frames on a case-by-case basis, are to be used as needed to ensure compliance. Existing inspection/enforcement procedures should be used to achieve this result. Depending on the severity of the violation, enforcement can range from a verbal warning to a written notice, withholding payment or suspension of work.

If a significant and/or immediate threat to water quality is observed by an inspector, action should be taken to require the contractor to immediately cease the discharge. A threat to water quality shall be based on an assessment by the inspector that runoff from a construction site will not be reasonably controlled by the protective measures in place or if a failure of BMPs is resulting in the release of sediments or other pollutants to a degree that may be substantially degrading water quality.

The following subsections contain an overview of typical enforcement steps that each Permittee should consider. However, each Permittee's program should be consistent with existing contract enforcement mechanisms while generally conforming to the elements described below.

Verbal Warnings

The most common initial method of requesting corrective action and enforcing compliance is a verbal warning from the inspector to the contractor. Verbal warnings are often sufficient to achieve correction of the violation, often while the inspector is present at the site. The inspector will notify the contractor's project supervisor of the violation, and document the violation and the notification of the project supervisor in the inspection file. In judging the degree of severity, the inspector may also take into account past history of similar or repeated violations by the same contractor at other sites.

Written Notices

If the deficiency noted in the verbal warning is not corrected within the time given, a written notice of violation may be issued describing the condition that is to be corrected and the time frame for correction and the follow-up inspection. A copy of the written notice will be given to the contractor's project supervisor and placed in the project file.

Withholding Payment

If deficiencies noted in written notices are not corrected within the required time frame, monies may be withheld from monthly progress payments until the contractor corrects the deficiency and comes into compliance with the contract.

Suspension of Work

If a written notice of violation is not addressed within the required time frame and a major violation is observed, such as a failure of BMPs that results in a significant release of sediment or other pollutants off site, the work may be suspended. A suspension of work order prohibits further construction activity until the problem is resolved and provides a time frame for correcting the problem. The suspension order may describe the infraction and specify what corrective action must be taken. To resume work the inspector must verify that the deficiencies have been satisfactorily corrected.

2.2.2.2.4 Report of Non-Compliance to the Regional Board

For projects subject to compliance with the General Construction Storm Water Permit or for which the Permittee has elected optional coverage under the municipal Permit, significant violations of state SWPPP requirements or conditions that are producing an immediate impact on receiving waters may be observed. Such significant violations may include, but are not limited to, the absence of a SWPPP on site and negligence in BMP implementation. In this case, in addition to taking appropriate contract enforcement action against the contractor, a Notice of Non-Compliance must be submitted by the Permittee to the Regional Board via facsimile or telephone within the next 2 business days.

2.2.3 Procedures to Seek Coverage under the Municipal Permit (Optional)

For public agency Development Construction Projects subject to the General Construction Storm Water Permit (greater than five acres), coverage may be obtained under the Municipal Permit for public construction projects if the following procedures are followed:

- Notify the Executive Officer of the Regional Board of the construction activity.
- Use a checklist of construction activity BMPs using BAT/BCT criteria for public construction activity as defined by the General Construction Storm Water Permit.
- Verify implementation of construction activity BMPs.
- Require a state SWPPP to be prepared and retained on site for each project.
- Report annually to the Executive Officer of the Regional Board as part of the Permittee's Annual Report under the Municipal Permit on the effectiveness of State SWPPPs for public construction activity sites, and certify compliance with the requirements in this program.

Guidance on conducting these procedures is included in Appendix E.

3.1 INTRODUCTION

3.1.1 Program Goal and Objectives

This program component is applicable to all Permittees who own and operate certain vehicle maintenance/materials storage facilities described in the Permit and detailed in Section 3.1.2. Activities at these facilities may generate waste, spills and leaks that could potentially reach the storm drain system and receiving waters in storm water runoff or as non-storm water discharges. The goal of this program is to make storm water quality a concern when conducting activities at municipal facilities.

Each Permittee's program must meet the requirements of the Los Angeles County municipal storm water permit (Permit), as summarized in Table 3-1.

Table 3-1

Permit Requirements - Vehicle Maintenance/Material Storage Facilities Management

Report Section	*Requirement (Summary)*	*Permit Section*
3.2.1	Develop pollution prevention plans for public vehicle maintenance/material storage facilities which have the potential to discharge pollutants into storm water.	IV.C.3.a
3.2.2	Implement BMPs to improve site-specific pollutant control including but not limited to good housekeeping practices; material storage control; vehicle leaks and spill control; illicit discharge control; training for employees on proper outdoor loading/unloading of materials; vehicle and equipment washing area control; regular maintenance of treatment structures such as sumps, oil/water separators, or equivalent; and proper waste handling and disposal.	IV.C.3.b

The objectives of this program component are to:

- Identify and evaluate sources of pollutants from public vehicle maintenance/material storage facilities that may affect the quality of storm water discharges from the facility.
- Identify and implement site-specific best management practices to reduce or prevent pollutants in storm water discharges.

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3.1.2 Facilities Covered by the Permit

Section IV.C.3.a of the Permit defines public vehicle maintenance/material storage facilities as "...any Permittee-owned or operated facility or portion thereof that:

i. Conducts industrial activity, operates equipment, handles materials, and provides services similar to federal Phase 1 facilities;

ii. Performs fleet vehicle maintenance on ten or more vehicles per day including repair, maintenance, washing, and fueling;

iii. Performs maintenance and/or repair of heavy industrial machinery/equipment; and

iv. Stores chemicals, raw materials, or waste materials in quantities that require a hazardous materials business plan or a Spill Prevention, Control, and Countermeasures (SPCC) plan."

Guidance on determining covered facilities is provided in Appendix F.

3.2 PROGRAM IMPLEMENTATION ELEMENTS

3.2.1 Pollution Prevention Plan

A pollution prevention plan will be developed and implemented, where applicable, for public vehicle maintenance/material storage facilities, as defined in Section IV.C.3.a of the Permit, to minimize the potential for pollutant discharges to the storm drain system. A model pollution prevention plan and guidance on how to develop and implement the plan are provided in Appendix F.

3.2.2 Best Management Practices for Site Specific Control

As part of the pollution prevention plan, BMPs must be selected and implemented, where applicable, that are appropriate to prevent or mitigate pollution generated from the specific activities at the site. A list of appropriate BMPs and guidance for BMP selection are provided in Appendix F.

4.1 INTRODUCTION

4.1.1 Program Goal and Objectives

This program component is applicable to all Permittees who own and operate recreational facilities. Maintenance practices at parks and recreation facilities generally include fertilizer and pesticide applications, vegetation maintenance and disposal, swimming pool chemical maintenance and draining, and trash and debris management. All of these maintenance practices have the potential to contribute pollutants to the storm drain system. If improperly managed, potential pollutants can be transported in runoff to the storm drain system and subsequently discharged to receiving waters. The goal of the program for landscape and recreational facilities management is to make storm water quality a concern when conducting operation and maintenance activities.

Each Permittee's program must meet the requirements of the Los Angeles County municipal storm water permit (Permit), as summarized in Table 4-1.

Table 4-1

Permit Requirements - Landscape and Recreational Facilities Management

Report Section	*Requirement (Summary)*	*Permit Section*
4.2.1	Implement procedures for application of pesticides, herbicides, and fertilizers that will include: a list of approved pesticides and selective and environmentally responsible uses, product and application information, application equipment use and maintenance, and record keeping.	IV.C.4.a
4.2.1	Implement procedures to minimize storm water pollution by pesticides and fertilizers used for landscape maintenance, including the utilization of Integrated Pest Management (IPM) techniques to the maximum extent practicable.	IV.C.4.b
4.2.1	Implement BMPs to reduce exposure of fertilizers and pesticides to storm water during storage, to include as applicable: storage indoors or under cover on paved surfaces, secondary containment, reduction in storage and handling of hazardous materials, and regular inspection of storage areas.	IV.C.4.e
4.2.1	Implement guidelines to schedule irrigation and fertilization to minimize chemical application during the wet season, to terminate chemical application during storm events, and to minimize overwatering and nutrients/pesticides entrainment.	IV.C.4.f
4.2.2	Implement procedures to prevent the disposal of landscape waste into the municipal storm drain system.	IV.C.4.c
4.2.3	Implement procedures to encourage retention and planting of native vegetation to reduce water, fertilizer, and pesticide needs.	IV.C.4.d

Table 4-1
Permit Requirements - Landscape and Recreational Facilities Management

Report Section	Requirement (Summary)	Permit Section
4.2.4	Implement procedures to manage discharges of municipal swimming pool water into the municipal storm drain system, including: dechlorination practices, proper disposal of clean-out waters, and piping of filter backwash to the sanitary sewer.	IV.C.4.g
4.2.5	Implement BMPs to minimize trash, debris, and other pollutants from entering recreational water bodies, including: routine trash collection along, on, and/or in water bodies, where feasible; and public outreach to educate the public about the impacts of illicit disposal.	IV.C.4.h

The objectives of this program component are to:

- Minimize the discharge of pesticides, herbicides and fertilizers to the storm drain system and receiving waters.
- Prevent the disposal of landscape waste into the storm drain system.
- Minimize trash, debris and other pollutants from entering Permittee-owned recreational water bodies.
- Discharge municipal swimming pool water in a manner that will not contribute pollutants to receiving waters.

4.1.2 Facilities Covered by the Permit

Landscape and recreational facilities include, but are not limited to:

- Parks
- Golf courses
- Swimming pools
- Riding trails
- Recreational water bodies
- Picnic areas
- Sports fields
- Landscaped areas in parking lots

R0001087

4.2 PROGRAM IMPLEMENTATION ELEMENTS

4.2.1 Pesticide, Herbicide and Fertilizer Management

4.2.1.1 Application and Record Keeping

The following procedures will be implemented, where applicable, to ensure that pesticides, herbicides and fertilizers are properly applied and handled to minimize their exposure to storm water. Application and handling procedures will be in compliance with federal, state and county regulations, as follows:

- Apply and handle pesticides and herbicides and keep detailed records in accordance with existing state regulations (California Title 3, Division 6, Pesticides and Pest Control Operations). The regulations cover a list of approved chemicals, product and application information, equipment use and maintenance procedures, and record keeping.
- Apply and handle fertilizers in strict accordance with the label directions.

Guidance on applying and handling these materials and a summary of the state regulations are provided in Appendix G.

4.2.1.2 Minimizing the Use of Pesticides and Fertilizers

The following pest control strategies will be implemented, where applicable, to emphasize the use of a hierarchy of controls, with a preference for mechanical controls (e.g., mowing) and biological controls (e.g., beneficial insects, pheromones) before chemical controls (e.g., pesticides, herbicides). This practice is often referred to as Integrated Pest Management (IPM), a pest management practice that considers the entire ecosystem when determining potential pest control strategies.

- Use mechanical control of vegetation whenever possible, such as mowing with tractor-type or pushmowers and hand cutting with gas or electric powered weed trimmers.
- Use hand weeding where practical.
- Consider the use of beneficial insects to control pests as part of a Preventive Maintenance Program.
- Incorporate the above requirements into application contracts.

Guidance on minimizing product use is provided in Appendix G.

4.2.1.3 Storage and Inspection

The following procedures will be implemented, where applicable, to handle pesticides and fertilizers in a manner that minimizes their exposure to storm water. Storage and inspection will be in compliance with federal, state and county regulations.

- Store materials in enclosed sheds or buildings or under cover on an impervious surface.
- Provide secondary containment around materials if stored outdoors or if material from a spill could flow outdoors.
- Keep only the minimum amount of hazardous materials on site.
- Periodically check areas for spills, leaks, or unsafe storage methods.

Guidance on storage and a summary of the state regulations are provided in Appendix G.

4.2.1.4 Scheduling

The following procedures will be implemented, where applicable, to schedule irrigation and fertilization application to minimize the discharge of pollutants that enter the storm drain system:

- Do not overwater landscaped areas, especially when irrigating after fertilizer/pesticide applications. Adjust watering locations and amounts to minimize non-storm water runoff.
- Avoid chemical applications during the wet season to minimize the amount of pollutant runoff in storm water.
- Do not apply chemicals during storm events.

4.2.2 Landscape Waste

Landscape waste consists of clippings, cuttings and droppings of leafy and woody materials. The following procedures will be implemented, where applicable, to assure that exposed materials and accumulated sediment, trimmings and litter will be disposed of properly and not to the storm drain system:

- Require all employees and contractors who generate landscape waste to dispose of it at a Permittee-approved composting location or permitted landfill; include such provisions in landscape maintenance contracts.
- Place temporarily stockpiled material away from watercourses, and berm or cover stockpiles to prevent material releases to the storm drain system.

4.2.3 Native Vegetation

The following procedures will be implemented, where applicable, to retain and plant native vegetation when practical to reduce water, fertilizer and pesticide needs.

- Determine existing native vegetation features (location, species, size, function, importance) and consider the feasibility of protecting them.
- Consider elements such as their effect on drainage and erosion, hardiness, maintenance requirements, and possible conflicts between preserving vegetation and the resulting maintenance needs.
- Where feasible, retain and/or plant selected native vegetation whose features are determined to be beneficial.

4.2.4 Municipal Swimming Pools

The following procedures will be implemented, where applicable, to manage discharges of municipal swimming pool water:

- Discharge filter backwash water and chemically treated water to the sanitary sewer, unless not possible.
- If discharging to the storm drainage system, dechlorinate the water through mechanical means (such as letting the water sit for several days without adding chlorine) or chemical means (such as by adding sodium bisulfite).
- Neutralize all other chemicals in discharges, such as acid wash residue, before discharging to the storm drain system.
- Incorporate the above requirements into maintenance contracts.

Guidance on dechlorination practices is provided in Appendix G.

4.2.5 Recreational Water Bodies

Beaches, picnic areas, lakes, and ponds receive a large number of visitors and may collect a large amount of litter, debris and other pollutants. To minimize the amount of potential pollutants that reach the water body, the following procedures will be implemented, where applicable:

- Provide and maintain trash receptacles to hold refuse generated by the public.
- Collect trash and debris from bins and along water bodies to minimize the amount of trash and debris that may contact the water.
- Collect trash and debris from within waterbodies where feasible.
- When necessary, increase collection during peak visitation months (generally June, July and August).

5.1 INTRODUCTION

5.1.1 Program Goal and Objectives

This program component is applicable to all Permittees who own and operate a storm drain system. The storm drain system functions primarily to collect and convey surface runoff to receiving waters during storms in order to prevent flooding. It is a common activity to maintain the storm drain system so that it functions hydraulically as intended during storms. The goal of this program is to reduce the impact of storm drain operation and maintenance activities on storm water quality.

Each Permittee's program must meet the requirements of the Los Angeles County municipal storm water permit (Permit), as summarized in Table 5-1.

Table 5-1

Permit Requirements – Storm Drain Operation and Management

Report Section	*Requirement (Summary)*	*Permit Section*
5.2.1	Implement BMPs for inlet maintenance to the maximum extent practicable, including but not limited to: inspection and cleaning of catch basins between May 1 and September 30 of each year; additional cleaning of catch basins, as necessary, between October 1 and April 30; record keeping of catch basins cleaned; and recording of the overall quantity of catch basin waste collected.	IV.C.5.a
5.2.2	Implement BMPs for storm drain maintenance to the maximum extent practicable, including but not limited to: proper disposal of material removed; removal of trash and debris from open channel storm drains at least annually between May 1 and September 30 of each year; and surveillance for debris buildup in open channels during the rainy season.	IV.C.5.b
5.2.3	Implement a waste management program to include: procedures to identify problem areas of illicit discharges for regular inspection, procedures to minimize to the maximum extent practicable the discharge of contaminants during municipal storm drain system cleanup to maintain optimum channel capacity, and a review of current maintenance activities to assure that appropriate storm water BMPs are being utilized.	IV.C.5.c

The objectives of this program component are to:

- Inspect and clean catch basins annually and keep appropriate records.
- Remove trash and debris annually from open channels and properly dispose of these materials to prevent them from being washed to receiving waters.
- Report prohibited non-storm water discharges observed during the course of normal daily activities so they can be investigated, contained and cleaned up or eliminated.
- Review maintenance activities to verify that they minimize the amount of pollutants discharged to receiving waters.

5.1.2 Facilities Covered by the Permit

Facilities covered under this program include storm drain systems owned and operated by the Permittee.

5.2 PROGRAM IMPLEMENTATION ELEMENTS

5.2.1 Catch Basins

The following BMPs will be implemented for inspection and cleaning of catch basins and associated recordkeeping.

- Compile a list that provides the location of all catch basins.
- Inspect and clean catch basins at least once per year between May 1 and September 30.
- Compile a list of Priority Catch Basins, which are catch basins in areas that generate significant refuse. Between October 1 and April 30, Priority Catch Basins must be cleaned before the sump is 40 percent full.
- Between October 1 and April 30, conduct any additional cleaning as needed to minimize the amount of litter and debris that washes to receiving waters.
- Record the following minimum information when inspecting or cleaning catch basins:
  - Dates inspected or cleaned
  - Locations of catch basins inspected or cleaned
  - Overall amount of material removed (estimated in either volume or dry weight)

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Guidance on conducting maintenance activities is provided in Appendix H, Section H.1. Examples of forms that may be used to collect information and additional guidance are provided in Appendix H, Section H.2.

5.2.2 Storm Drains

The following BMPs will be implemented, where applicable, to remove trash and debris from improved open channels and properly dispose of material removed during storm drain maintenance activities, assuming the Permittee can get any necessary approvals and permits for channel maintenance.

- Remove trash and debris from open channels at least once per year between May 1 and September 30.
- Between October 1 and April 30, check open channels for debris buildup and conduct additional removal as needed.
- Properly dispose of all material removed during storm drain cleaning and maintenance at an approved landfill or recycling facility.

Guidance on conducting maintenance activities is provided in Appendix H, Section H.1.

5.2.3 Waste Management

5.2.3.1 Illicit Discharge Identification

Illicit discharges may be encountered in any part of the storm drain system. Implement procedures, where applicable, to identify problem areas of illicit discharge. Guidance on identifying, reporting and responding to illicit discharges are discussed in the model Illicit Connection/Illicit Discharge Elimination Program.

5.2.3.2 Minimization of Contaminant Discharge

The following procedure will be implemented to the maximum extent practicable, where applicable, to minimize the amount of contaminants discharged when conducting storm drain maintenance activities:

- Properly handle materials and dispose of waste removed during maintenance activities in a manner that will not release the material to the storm drain system, or in any other way contaminate storm water runoff.

Guidance is provided in Appendix H, Section H.3.

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5.2.3.3 Maintenance Activity Review

The following procedures will be implemented, where applicable, to verify that appropriate storm water best management practices are incorporated into maintenance activities:

- Review current maintenance activities.
- Evaluate if they directly or indirectly contribute pollutants to receiving waters.
- Revise procedures as necessary to reduce the contribution of pollutants to receiving waters.
- Educate employees on revised procedures during regular safety and tailgate meetings.

6.1 INTRODUCTION

6.1.1 Program Goal and Objectives

This program component is applicable to all Permittees who own and/or operate streets and roads. Streets and roads may collect litter and debris from nearby activities, as well as from vehicular traffic. They also require routine maintenance that may generate waste materials. The goal of this component is to reduce the impact of Permittee street and road operations and maintenance on storm water quality.

Each Permittee's program must meet the requirements of the Los Angeles County municipal storm water permit (Permit), as summarized in Table 6-1.

Table 6-1

Permit Requirements - Streets and Roads Maintenance

Report Section	*Requirement (Summary)*	*Permit Section*
6.2.1	Implement a program to sweep curbed streets at a targeted frequency of at least monthly, and where feasible, more frequently in areas generating significant refuse.	IV.C.6.a
6.2.2	Implement a streets and roads maintenance program of BMPs for existing saw-cut management and paving practices, to include but not be limited to: avoidance during wet weather to the extent feasible, and material storage away from drainage areas to prevent storm water pollution or other equally effective BMPs.	IV.C.6.b.i
6.2.2	Implement a streets and roads maintenance program for management of concrete materials and wastes, including but not limited to: washout of concrete trucks off or on site in designated areas and not into storm drains, open ditches, streets, or catch basins; material storage under cover, away from drainage areas or other equally effective BMPs; and avoidance of excess mixing of concrete or cement on site.	IV.C.6.b.iv
6.2.3	Implement a streets and roads maintenance program including good housekeeping practices to insure proper management of any wastes that are generated.	IV.C.6.b.ii
6.2.4	Implement a streets and roads maintenance program including collection, transport, and disposal of maintenance waste at appropriate disposal facilities in accordance with applicable federal, state, and local laws and regulations.	IV.C.6.b.iii
6.2.5	Implement a streets and roads maintenance program including employee training to promote a clear understanding of the potential for maintenance activities to pollute storm water, and to identify and select appropriate BMPs.	IV.C.6.b.v

The objectives of this program component are to:

- Sweep curbed streets to reduce the discharge of pollutants associated with activities occurring in street and road rights-of-way.
- Minimize the discharge of pollutants associated with the maintenance of streets and roads.

6.1.2 Facilities Covered by the Permit

Facilities covered under this program include streets and roads owned and operated by the Permittee.

6.2 PROGRAM IMPLEMENTATION ELEMENTS

6.2.1 Sweeping

The following procedures will be implemented, where applicable:

- Sweep curbed streets at a targeted frequency of at least monthly (or 12 times per year); and
- Where feasible, sweep areas that generate significant refuse more frequently than monthly.

Guidance for establishing a more frequent sweeping schedule in areas generating significant refuse is provided in Appendix I, Section I.1.1. In implementing the street sweeping program, Permittees must also comply with the South Coast Air Quality Management District (SCAQMD) Rule 1186, which addresses particulate matter emissions from paved and unpaved roads and livestock operations. Additional information on SCAQMD Rule 1186 is included in Appendix I, Section I.1.2.

The two common types of sweepers used by Permittees are vacuum sweepers and mechanical broom/brush sweepers. Permittees have flexibility to use either type of sweeper except as regulated by SCAQMD Rule 1186. Guidance on operating street sweepers at optimum efficiency is provided in Appendix I, Section I.1.3.

6.2.2 Material Management

Street and road maintenance operations may include saw cutting, paving, or the use of concrete materials. Source control BMPs will be implemented to address each of these activities individually, and are described below.

6.2.2.1 Saw-Cut Slurry

Saw-cut activities can be conducted either with (wet) or without (dry) water. In either case, to the extent feasible, care will be taken to prevent materials resulting from saw-cut activities from entering the storm drain system. The following procedures will be implemented, where applicable:

- Do not perform saw-cut activities during wet weather, to the extent feasible.
- Remove wet slurry from street or gutter and dispose of at an appropriate designated location.
- Prevent slurry material from entering catch basin openings, maintenance holes, and storm drain inlets to the extent possible during wet cutting and, where feasible, collect captured flow for proper disposal.
- Clean up spills from equipment and activities and dispose properly.
- Store sawcutting materials away from drainage areas to prevent storm water pollution, or implement other equally effective BMPs.

Other BMPs that may be implemented during saw-cut activities are listed in Appendix I, Section I.2.1.

6.2.2.2 Paving

The following procedures will be implemented, where applicable:

- Do not conduct paving activities during wet weather to the extent feasible.
- Prevent paving materials from entering catch basin openings, maintenance holes, and storm drain inlets to the extent possible during application of liquid or emulsified asphalt, seal coat, tack coat, slurry seal, fog seal, etc.
- Store paving materials away from drainage areas to prevent storm water pollution or implement other equally effective BMPs.
- Do not clean paving equipment on site; restrict equipment cleaning to an appropriate designated location.

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Other BMPs that may be implemented during paving activities are listed in Appendix I, Section I.2.2.

6.2.2.3 Concrete

The following procedures will be implemented, where applicable:

- Wash concrete trucks off site or in designated areas on site, such that there is no discharge of concrete washwater into storm drains, open ditches, streets, catch basins, or other storm water conveyance structures.
- When washing poured concrete areas to remove fine particles and expose the aggregate, contain the wash water for proper disposal.
- Store concrete materials under cover, away from drainage areas, or implement other equally effective BMPs.
- Avoid mixing excess amounts of concrete on site.

Other BMPs that may be implemented for the management of concrete materials and wastes are provided in Appendix I, Section I.2.3.

6.2.3 Good Housekeeping

Good housekeeping practices will be implemented to properly manage wastes that are generated during streets and roads maintenance activities. The following procedures will be implemented to the maximum extent practicable:

- Prevent debris from entering the storm drain.
- Clean up spills and leaks immediately using dry methods, whenever possible.
- Sweep up dry materials and residue from cleaning operations.
- Collect non-hazardous dry waste in designated, leak-proof containers and dispose properly.
- Do not wash materials into a storm drain or bury spilled dry material.
- Promptly clean up trash, debris, and litter from job sites and dispose properly.
- Inspect vehicles and equipment regularly for leaks.
- Place stockpiled materials away from catch basins, storm drain inlets, drainage paths, and natural waterways.
- Control stockpiled materials if windy or rainy weather is predicted (e.g., tarps, berming, sandbags, etc.).

- Prevent storm water from eroding loose soil and stockpiles.
- Inspect stockpiles regularly and after significant rain events.
- Keep paved areas adjacent to stockpiles and earthwork sites free from loose sediment and tracked materials.
- Apply and store all products in accordance with manufacturer's instructions and proper safety measures.
- Store products in labeled containers and with covers or lids.
- Do not clean or rinse equipment into a street, gutter, or storm drain.

Other good housekeeping BMPs that may be implemented are provided in Appendix I, Section I.3.

6.2.4 Maintenance Waste Disposal

Procedures will be implemented, where applicable, to collect, transport, and dispose of maintenance waste at appropriate disposal facilities in accordance with applicable federal, state, and local laws and regulations. Optional disposal options include the reuse and recycling of appropriate materials.

6.2.5 Employee Training

Employee training programs will be carried out such that staff who conduct streets and roads maintenance activities will:

- Be educated about the potential pollutants that may be released as a result of maintenance activities,
- Be educated regarding procedures and specific BMPs to be implemented during street sweeping, road maintenance, waste disposal, as well as regarding general good housekeeping practices, and
- Know how to effectively implement all applicable procedures and BMPs while conducting streets and roads maintenance activities.

Guidance for training employees who are charged with the responsibility for implementing streets and roads maintenance activities is provided in Appendix I, Section I.4.

7.1 INTRODUCTION

7.1.1 Program Goal and Objectives

As part of their storm water quality management plan, all Permittees who own parking lots with more than 25 parking spaces that are located in areas potentially exposed to storm water must have a parking facilities management plan. The goal of this component is to reduce the impact of these parking facilities on the quality of storm water discharges and receiving waters.

Each Permittee's program must meet the requirements of the Los Angeles County municipal storm water permit (Permit), as summarized in Table 7-1.

Table 7-1
Permit Requirement - Parking Facilities Management

Report Section	*Requirement (Summary)*	*Permit Section*
7.2	Implement a parking facilities management plan that includes sweeping or other equally effective measures to remove debris from Permittee-owned parking lots with more than 25 parking spaces that are located in areas potentially exposed to storm water.	IV.C.7

The objective of this program component is to remove debris from parking facilities to reduce the amount of material that comes into contact with storm water.

7.1.2 Facilities Covered by the Permit

Facilities covered by this section include any Permittee-owned parking lots with more than 25 parking spaces that are located in areas potentially exposed to storm water. This may include public parking areas and municipal parking lots at facilities such as City Hall.

7.2 PROGRAM IMPLEMENTATION ELEMENTS

The following procedures will be implemented to remove debris from parking facilities:

- Conduct regular sweeping or other equally effective measures to remove debris from Permittee-owned parking lots covered by this program.
- Sweep Permittee-owned parking lots covered by this program at least once between August 15 and October 15 of each year.

Additional information on sweeping, including types of sweeping equipment and guidance for sweeper operation, is provided in Appendix I. Additional guidance for cleaning parking lots and implementing other BMPs at parking facilities is included in Appendix J.

8.1 INTRODUCTION

8.1.1 Program Goal and Objectives

Industrial activities, whether private or public, have the potential to contribute pollutants to storm water runoff. Many industrial facilities (Phase 1 facilities) are subject to the California General Industrial Activities Storm Water Permit (General Industrial Permit) for control of storm water pollution. The goal of the General Industrial Permit is to reduce the impact of industrial facilities on storm water quality. The goal of this section of the program is to procedurally simplify and reduce the cost of Permittees' compliance for their own industrial facilities by providing the option to obtain coverage under the Los Angeles County municipal storm water permit (Permit) in lieu of the General Industrial Permit.

If a Permittee desires to obtain coverage under this Permit for a Phase 1 facility, the Permittee's program must meet the requirements of the Permit, as summarized in Table 8-1.

Table 8-1

Permit Requirements - Public Industrial Activities

Report Section	*Requirement (Summary)*	*Permit Section*
8.2 (optional)	Implement procedures to seek coverage, as an option, under this Order for Phase I industrial facilities which are owned or operated by a Permittee.	IV.C.8.a

The objective of this program component is to comply with all requirements and conditions contained in the General Industrial Permit.

8.1.2 Facilities Covered by the General Industrial Permit

Facilities subject to the General Industrial Permit are those facilities owned or operated by a Permittee that are listed by category in 40 Code of Federal Regulations (CFR) Section 122.26(b)(14):

i. Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR Subchapter N)

ii. Manufacturing facilities

iii. Mining and oil and gas facilities

iv. Hazardous waste treatment, storage, or disposal facilities

v. Landfills, land application sites, and open dumps that receive industrial waste

vi. Recycling facilities

vii. Steam electric generating facilities

viii. Transportation facilities

ix. Sewage treatment plants

xi. Certain facilities if materials are exposed to storm water

Typical publicly-owned industrial facilities include airports, POTWs, vehicle maintenance facilities, and landfills. The impact of the regulations will vary depending on the type of facility. Most, if not all, airports have obtained coverage under an individual or group NPDES permit. POTWs are affected only if the facility's storm water runoff is not directed to the treatment facility or contained in some other way on site. Landfills are affected only if they receive or have received waste from industrial facilities covered by the Phase 1 regulations.

Corporation yards and the associated vehicle maintenance activities are technically not covered by the General Industrial Permit except for certain major vehicle maintenance facilities servicing a transportation fleet (i.e., bus system). However, under the Los Angeles County Permit, Permittees must develop pollution prevention plans for these facilities. See Section 4 of this document for more information on a program for corporation yards.

8.2 PROGRAM IMPLEMENTATION ELEMENTS (OPTIONAL)

Some, if not all, publicly-owned or operated industrial facilities are likely already covered (if the municipality has filed for coverage) by the General Industrial Permit or USEPA's Multi-sector Permit. Rather than file for separate General Industrial Permit coverage or renewal, equivalent coverage may be obtained for these facilities under the Los Angeles County Permit if the following procedures are implemented:

- Notify the Executive Officer of public industrial facilities owned or operated by the Permittee as defined in the General Industrial Permit.
- Use a checklist of BMPs using BAT/BCT criteria for public industrial facilities.
- Use a procedure to verify implementation of industrial facility BMPs.
- Prepare and retain site-specific SWPPPs.
- Report annually, to the Executive Officer of the Regional Board as part of the Permittee's Annual Report under the municipal storm water Permit, on the

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effectiveness of the SWPPPs and the results of the facility monitoring programs at public Phase 1 industrial facilities.

Guidance is provided in Appendix K.

9.1 INTRODUCTION

As part of their storm water quality management program, each Permittee must include a component addressing emergency repairs of essential public services and infrastructure, and response to natural disasters. The goal is to reduce the impact of emergency response activities on receiving waters, to the extent possible, without compromising public health and safety.

Each Permittee's program must meet the requirements of the Los Angeles County municipal storm water permit (Permit), as summarized in Table 9-1.

Table 9-1

Permit Requirement - Emergency Procedures

Report Section	*Requirement (Summary)*	*Permit Section*
9.2	Implement procedures for addressing emergency repairs of essential public services and infrastructure and responding to natural disasters.	IV.C.9

The objectives of this program component are to:

- Recognize that public health and safety are the highest priority when conducting emergency response activities.
- Protect surface water quality by incorporating appropriate BMPs into emergency response activities to the extent possible.

9.2 PROGRAM IMPLEMENTATION ELEMENTS

While responding to emergency situations and natural disasters such as, but not limited to, earthquakes, fires, floods, landslides, or windstorms, it is recognized that the highest priority for Permittees is public health and safety. The following procedures will be implemented, where applicable, to address receiving water quality during emergency repairs: **R0001105**

- BMPs to reduce impacts to the storm drain system and receiving waters will be considered and implemented during emergency response and repair activities, to the extent that such measures do not compromise public health and safety.
- After initial emergency response or emergency repair activities have been completed and essential public services have been restored, implement all appropriate BMPs as described in Sections 2 through 8 when performing additional repairs, clearing conveyance structures, repairing or rebuilding infrastructure, etc.

- As needed, coordinate with governmental agencies including, but not limited to, the Los Angeles County Department of Public Health, Los Angeles Regional Water Quality Control Board, California Department of Toxic Substances Control, and the California Office of Emergency Services.

BMPs that may be considered and other guidance on emergency procedures are provided in Appendix L.

10.1 INTRODUCTION

In accordance with the Permit model program requirement, the following is a discussion of the ongoing investigation of the feasibility of dry weather flow diversion from the storm drain system to municipal wastewater treatment plants. No action is required by the Permittees under this section. Dry weather flow diversion is currently being used, or its feasibility is being investigated, in several coastal cities in Los Angeles County. The purpose of dry weather or low-flow diversion is to direct pollutants in dry weather flows to wastewater treatment plants instead of the receiving waters.

10.2 EXISTING PROGRAMS

10.2.1 Santa Monica

The City of Santa Monica currently maintains two low-flow diversions: Pico-Kenter Storm Drain and the Santa Monica Pier Storm Drain, as described below.

Ponding and stagnation at the Pico-Kenter Storm Drain prompted one of the first diversion activities in early 1993. The dry weather flow is diverted by means of a vault and pump and then eventually gravity flows to the Moss Avenue Pump Station and then to the Hyperion Treatment Facility.

The Santa Monica Pier Storm Drain empties a small, commercial watershed known as the Promenade. During dry weather flow, stagnation occurs due to the shallow slope of the drain, which results in high concentrations of pollutants. While no diversion system has been built, the low flow is manually pumped to the Hyperion Treatment Facility.

10.2.2 Manhattan Beach

The City of Manhattan Beach currently maintains one dry weather flow division at the Manhattan Beach Pier. Prior to the implementation of the diversion, runoff would accumulate and ponding would occur below the pier. Now in place, a rain switch diversion allows wet weather flow to runoff directly into the ocean and dry weather flow to be diverted to a treatment facility. This is achieved using a system involving a wet well, pump, vault, and weir.

10.2.3 Los Angeles City

The major storm drains that flow from the City of Los Angeles to Santa Monica Bay were evaluated to determine if storm drain runoff and adjacent beach water quality justify the need for dry-weather low-flow diversions. Twelve low-flow diversion projects were identified. As of January 2001, five projects have been completed or are under construction, as summarized below:

Construction Completed

1. Pico-Kenter Low-Flow Diversion - constructed and to be operated in equal partnership with the City of Santa Monica, and will flow to the Santa Monica Urban Runoff Recycling Facility (SMURRF, see below).
2. Thornton Avenue Low-Flow Diversion - flows to the Hyperion Treatment Plant.
3. Bay Club Low-Flow Diversion - flows to the Hyperion Treatment Plant.

In Construction

1. Santa Monica Urban Runoff Recycling Facility (SMURRF) - in construction and to be operated in equal partnership with the City of Santa Monica.
2. Palisades Park Low-Flow Diversion - will flow to the Hyperion Treatment Plant.

10.2.4 Los Angeles County Department of Public Works

The Los Angeles County Department of Public Works has completed or is in the process of constructing the following five dry weather flow diversion projects:

- Alamitos Bay Pump Station (City of Long Beach) – completed and operational;
- Ashland Avenue Drain (City of Santa Monica) – undergoing design modifications and expected to be operational in the summer of 2001;
- Brooks Avenue Drain (City of Los Angeles) – completed and operational;
- Herondo Drain (City of Redondo Beach) – completed and operational; and
- Pershing Drive Drain (City of Los Angeles) – undergoing design modifications and expected to be operational in the summer of 2001.

[Information updated 12/2000.]

10.2.5 Torrance, Hermosa Beach, and Redondo Beach

The cities of Torrance, Hermosa Beach, and Redondo Beach applied for state funding in a joint effort to divert the dry weather flow of the Herondo Drain. The problem was that sand

accumulated at the drain outlet and dry weather flow subsequently built up, overflowing onto the street and inducing street closures for cleanup and repair. The Los Angeles County Department of Public Works was the lead agency for this diversion project. The project has been completed and is operational. *[Information updated 12/2000.]*

10.3 FEASIBILITY STUDIES

10.3.1 Santa Monica

Both the Pico-Kenter and Santa Monica Pier Storm Drain low-flow diversions are temporary implementation measures to reduce bay pollution. The City of Santa Monica is currently in the process of designing the Pico-Kenter Storm Water reclamation plant to treat low-flow storm water. Feasibility studies have been performed and the design process will be completed in less than a year, with anticipated facility completion in 1999. This reclaimed water will be used for aquifer recharge, highway vegetation, and sold for reuse purposes such as irrigation.

10.3.2 Malibu

The City of Malibu recently received a 1992 Proposition A grant worth $1.3 million to remediate the Malibu Lagoon and study alternatives to prevent its future contamination. One such alternative is dry weather flow diversion. Approximately $150,000 has been allocated for preliminary engineering and environmental analyses to be performed over an 18-month period. The anticipated time of completion for the cleanup of the Malibu Lagoon is the summer of the year 2000.

APPENDIX A

EXCERPTS FROM THE PERMIT

IV. Public Agency Activities

Table 5 shows the summary of requirements under this section and their corresponding compliance dates.

Table 5
Public Agency Activities Requirements and Compliance Dates

Requirement	Permit Section	Principal Permittee	Permittees	Months from Effective Date of Order (Compliance Date)	For Approval By
Evaluate existing public agency activities and develop a model program to reduce storm water impacts	IV.A	✓		16 (December 1, 1997)	Executive Officer
Develop a program to reduce storm water impacts from public agency activities with a schedule for implementation	IV.B		✓	4 months after Executive Officer approval of model ≤ 36 months (July 30, 1999)	N/A

A. Public Agency Model Program

The Principal Permittee, in consultation with the Permittees, shall develop a model program to reduce the impact of public agency activities on storm water quality not later than December 1, 1997. The model program shall include a discussion of the on-going investigation of the feasibility of dry weather flow diversion from the MS4 to municipal waste water treatment plants, where appropriate. The model shall be submitted to the Regional Board for approval.

To minimize costs and avoid duplication of effort, it is encouraged to incorporate and recognize in the model program existing regulations, requirements and plans, such as waste minimization plans, spill prevention control and countermeasures, and business plans.

B. Permittee Public Agency Programs

Each Permittee shall develop and implement a Public Agency Program based on the model program developed by the Principal Permittee not later than four

months after commencement of its next fiscal year following approval of the model program by the Executive Officer, provided, however, that such approval is issued not later than 90 days prior to the commencement of the Permittee's fiscal year. If such approval is given within 90 days of the commencement of a Permittee's fiscal year, such program shall be implemented in the second fiscal year following approval but in no event shall implementation be later than July 30, 1999.

C. Program Requirements

Both the model program and the Permittee programs shall at a minimum include, where applicable:

1. Sewage Systems Operations

   a. Procedures to keep sewage spills or leaks from facilities operated by a Permittee from entering the MS4 to the maximum extent practicable;

   b. Procedures to identify, repair, and remediate sanitary sewer blockages, exfiltration, overflow, and wet weather overflows from sanitary sewers operated by a Permittee to the MS4;

   c. Procedures to respond to overflows and investigate complaints;

   d. Procedures to insure that the Permittee is able to investigate any suspected connections or cross connections from the sanitary sewer systems to the MS4; and

   e. Procedures to notify public health agencies with discretionary decision authority on beach closures when there is a threat to public health.

2. Public Construction Activities Management

   a. Storm water management requirements for the design and construction of public facilities consistent with the requirements and time lines specified for private development in Part 2.III.A and III.B.

   b. Procedures to seek coverage, as an option, under this Order for construction activity with a disturbed area of five acres or more (Phase 1, 40 CFR 122.26) which is under taken by or on behalf of the Permittee, if the Permittee develops:

i. A process for notifying the Executive Officer of Permittee's construction activity;

ii. A checklist of construction activity BMPs using BAT/BCT criteria for public construction activity;

iii. A procedure to verify implementation of construction activity BMPs;

iv. A requirement to prepare and retain site-specific SWPPPs;

v. A procedure to report annually on the effectiveness of SWPPPs at public construction activity sites, and certify compliance with the requirements in this Order.

3. Vehicle Maintenance/Material Storage Facilities Management

a. Model pollution prevention plan for public vehicle maintenance/material storage facilities which have the potential to discharge pollutants into storm water. A public vehicle maintenance/material storage facility is any Permittee-owned or operated facility or portion thereof that:

i. Conducts industrial activity, operates equipment, handles materials, and provides services similar to Federal Phase 1 facilities;

ii. Performs fleet vehicle maintenance on ten or more vehicles per day including repair, maintenance, washing, and fueling;

iii. Performs maintenance and/or repair of heavy industrial machinery/equipment; and

iv. Stores chemicals, raw materials, or waste materials in quantities that require a hazardous materials business plan or a Spill Prevention, Control, and Counter-measures (SPCC) plan.

b. BMPs to improve site specific pollutant control including but not be limited to:

i. Good housekeeping practices;

ii. Material storage control;

iii. Vehicle leaks and spill control;

iv. Illicit discharge control;

v. Training for employees on proper outdoor loading/unloading of materials;

vi. Vehicle and equipment washing area control;

vii. Regular maintenance of treatment structures such as sumps, oil/water separators, or equivalent; and

viii. Proper waste handling disposal.

4. Landscape and Recreational Facilities Management

a. Procedures for application of pesticides, herbicides, and fertilizers that will include:

i. List of approved pesticides and selective and environmentally responsible uses;

ii. Product and application information;

iii. Application equipment use and maintenance; and

iv. Record keeping.

b. Procedures to minimize storm water pollution by pesticides and fertilizers used for landscape maintenance, including the utilization of Integrated Pest Management (IPM) techniques to the maximum extent practicable;

c. Procedures to prevent the disposal of landscape waste into the MS4;

d. Procedures to encourage retention and planting of native vegetation to reduce water, fertilizer, and pesticide needs;

e. BMPs to reduce exposure of fertilizers and pesticides to storm water during storage, to include as applicable, the following:

i. Storage indoors or under cover on paved surfaces;

ii. Secondary containment;

iii. Reduction in storage and handling of hazardous materials;

iv. Regular inspection of storage areas;

f. Guidelines to schedule irrigation and fertilization to minimize:

i. Chemical application during wet season and to terminate chemical application during storm events; and

ii. Over-watering and nutrients/pesticides entrainment.

g. Procedures to manage discharges of municipal swimming pool water into the MS4, including dechlonnation practices, proper disposal of clean-out waters, and piping of filter backwash to the sanitary sewer;

h. BMPs to minimize trash, debris, and other pollutants from entering Permittee-owned recreational water bodies, to include:

i. Routine trash collection along, on, and/or in, water bodies, where feasible; and

ii. Public outreach to educate the public about impacts of illicit disposal.

5. Storm Drain Operation and Management

a. BMPs for Inlet Maintenance to be implemented to the maximum extent practicable, including but not be limited to:

i. Inspection and cleaning of catch basins between May 1 and September 30 of each year;

ii. Additional cleaning of catch basins, as necessary, between October 1 and April 30;

iii. Record keeping of catch basins cleaned; and

iv. Recording of the overall quantity of catch basin waste collected.

b. BMPs for Storm Drain Maintenance to be implemented to the maximum extent practicable, including but not be limited to:

i. Proper disposal of material removed;

ii. Removal of trash and debris from open channel storm drains at least annually between May 1 and September 30 of each year;

iii. Surveillance for debris buildup in open channels during the rainy season.

c. Waste Management program to include:

i. Procedures to identify problem areas of illicit discharge for regular inspection;

ii. Procedures to minimize to the maximum extent practicable the discharge of contaminants during MS4 cleanup to maintain optimum channel capacity; and

iii. A review of current maintenance activities to assure that appropriate storm water BMPs are being utilized.

6. Streets and Roads Maintenance

a. Program to sweep curbed streets at a targeted frequency of:

i. At least monthly; and,

ii. Where feasible, more frequently in areas generating significant refuse.

b. Streets and roads maintenance program including:

i. BMPs for existing saw-cut management and paving practices to include but not be limited to:

aa. Avoidance during wet weather to the extent feasible; and

bb. Material storage away from drainage areas to prevent storm water pollution or other equally effective BMPs.

ii. Good housekeeping practices to insure proper management of any wastes that are generated;

iii. Collection, transport, and disposal of maintenance waste at appropriate disposal facilities in accordance with applicable federal, state, and local laws and regulations;

iv. Management of concrete materials and wastes including but not limited to:

aa. Washout of concrete trucks off- or on-site in designated areas and not into storm drains, open ditches, streets, or catch basins;

bb. Material storage under cover, away from drainage areas or other equally effective BMPs; and

cc. Avoidance of excess mixing of concrete or cement on-site.

v. Employee training to:

aa. Promote a clear understanding of the potential for maintenance activities to pollute storm water; and

bb. Identify and select appropriate BMPs.

7. Parking Facilities Management

Parking Facilities Management Plan to include sweeping or other equally effective measures to remove debris from Permittee-owned parking lots with more than twenty-five parking spaces that are located in areas potentially exposed to storm water.

8. Public Industrial Activities

a. Procedures to seek coverage, as an option, under this Order for Phase I industrial facilities which are owned or operated by a Permittee, if the Permittee develops:

i. A process for notifying the Executive Officer of public industrial facilities owned or operated by the Permittee;

ii. A checklist of BMPs using BAT/BCT criteria for public industrial facilities;

iii. A procedure to verify implementation of industrial facility BMPs;

iv. A requirement to prepare and retain site specific SWPPPs; and

v. A procedure to report annually on the effectiveness of SWPPPs and the results of the facility monitoring programs at public

Phase 1 industrial facilities, and certify compliance with the requirements of this Order.

9. Emergency Procedures

Procedures for addressing emergency repairs of essential public services and infrastructure and responding to natural disasters.

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APPENDIX B

SEWAGE SYSTEMS OPERATIONS GUIDANCE

B.1 SPILL/LEAK/OVERFLOW RESPONSE AND INVESTIGATION

Sewage incident response and investigation may involve a coordinated effort between staff from a number of different departments/agencies. These will include staff from sewer system maintenance and may involve street and road maintenance, if the incident is in the public right-of-way; storm drain maintenance, if the incident reaches the storm drain system; and LACDPW if the incident reaches the county storm drain system. When an incident is reported, staff shall at a minimum:

- Dispatch appropriate personnel to perform material cleanup.
- Contain the spill and minimize the release to the storm drain system or receiving waters.
- Record required information at the spill site.
- Perform field tests as necessary to determine the source of the spill.

Additional investigations of the sewer system should be conducted to determine the cause of the incident, and steps should be taken to prevent similar occurrences in the future.

Permittees who own and/or operate sanitary sewer facilities will be responsible for carrying out this prevention and response program. Therefore, Permittees who contract with the Los Angeles County Sanitation District (LACSD) or any other agency for collection, transmission and treatment of their wastewater flows should develop a cooperative policy with the agency, either formal or informal, that addresses similar spill/leak/overflow response procedures and protection of the storm drain system.

Any existing local standard operating procedures and spill response plans should be reviewed to confirm that the response to sewage overflows or spills contains the procedures discussed in Section 1 of this document. Where applicable, procedure changes should be made to protect the storm drain system from sewage spills.

B.2 PREVENTIVE AND CORRECTIVE MAINTENANCE

Routine preventive and corrective maintenance is one method to prevent sewage overflows from occurring. These procedures may reveal portions of the sewage system that have blockages or other problems. Existing sewer maintenance procedures and activities should be reviewed to make sure a procedure is documented and in place for identifying potential problems in the

sewer system, reporting potential problems to the appropriate supervisor, and having problems repaired.

B.2.1 Identifying Potential Problems

During routine maintenance and inspection, crews observe portions of the sewage system on a regular basis. To identify potential problems, crews should note the condition of various structures and identify areas that need repair. Items to note may include the following:

- Cracked/deteriorating pipes
- Leaking joints/seals at manhole
- Line plugs frequently
- Line generally flows at or near capacity
- Suspected exfiltration
- Other

B.2.2 Reporting and Repairing Potential Problems

Potential problems noted in B.2.1 should be documented and reported to the appropriate manager or supervisor in charge of sewer system repairs. This manager or supervisor should be responsible for prioritizing and coordinating repair work.

There are three general priorities that may be used: immediate repair, scheduled repair, and capital improvement. The priority of the repair depends on the nature and severity of the problem.

- Immediate repair is for overflow that is currently occurring, or for urgent problems which may cause an imminent overflow. This may be the case for pump station failures, sewer line ruptures, sewer line blockages, etc. These repairs may be temporary until scheduled or capital improvements can be completed.
- Scheduled repair is for problems that do not require immediate attention, and are relatively simple to repair within the capabilities of available maintenance personnel. Examples include lubricating pump motors, sealing cracks, flushing sewer lines, repairing manholes, etc.
- Capital improvements are for large scale repair or replacement projects. Examples include rehabilitating sewer lines, constructing or replacing new pump stations, installing new sewer lines, etc.

B.3 CROSS-CONNECTIONS

To ensure that suspected cross-connections are investigated, Permittees should consider keeping detailed records and/or issuing permits for all sewer and storm drain connections and lines. This would create a permanent record of all known facilities. Information on both sewer connections and storm drain connections should describe where and when the connection was made and to what pipe the connection was made. Information on new sewer lines or storm drain lines should describe the alignment of the new sewer or storm drain line and when the line was constructed.

B.4 PUBLIC HEALTH AGENCY NOTIFICATION

In addition to notifying the public health agency with discretionary decision authority to close beaches, Permittees should contact the spill response phone number of any municipality where a sewage spill may discharge. A list of spill response telephone numbers is included as Attachment B1.

ATTACHMENT B1

24-HOUR SPILL RESPONSE TELEPHONE NUMBERS

Attachment B1
24-Hour Spill Response Telephone Numbers

AGENCY	NUMBER	TIME	CONTACT
County of Los Angeles	(800) 303-0003	24 Hours	LACDPW
	(888) CLEANLA	24 Hours	LACDPW
Agoura Hills	(818) 597-7300	7am-6pm/M-Th	Public Works Department
	(818) 878-1808	Non-business Hours	Sheriff, Lost Hills Station
Alhambra	(626) 570-5070	7:30am-5:30pm/M-Th	Public Works
		8am-5pm/F	
	(626) 570-5168	24 Hours	Police Department
Arcadia	(626) 446-2111	24 Hours	Police Department
	(626) 446-6188	24 Hours	Fire Department
Artesia	(562) 865-6262	8am-5pm/M-F	Maria Lloyd or Code Enforcement
	(562) 866-9061 x290	Non-business Hours	Sheriff, Lakewood Station
Avalon	(310) 510-0174	24 Hours	Sheriff Dispatcher
Azusa	(626) 812-3200	24 Hours	Police Dept., Watch Commander
Baldwin Park	(818) 960-1955	24 Hours	Police Department, Dispatch
Bell	(213) 588-6211	7am-6pm/M-Th	Public Works or Development Serv.
	(213) 585-1245	24 Hours	Police Dept., Watch Commander
Bell Gardens	(562) 806-7770	7:30am-5pm/M-Th	Public Works Department
		7:30am-4pm/F	
	(562) 806-4573	Non-business Hours	Police Department
Bellflower	(562) 866-9061 x290	24 Hours	Sheriff, Lakewood Station
Beverly Hills	(310) 550-4985	24 Hours	Dispatch, Fire/Police
Bradbury	(626) 285-7171	24 Hours	Sheriff, Temple City Sta., Watch Sgt.
Burbank	(Streets, Gutters, Sidewalks, and Drains)		
	(818) 238-3800	6:30am-4pm/M-F	Public Works Street & Sewer Maint.
	(Parks, Trails, or Hillside Open Space)		
	(818) 238-5343	6:30am-6:30pm/M-F	Parks and Recreation
	(818) 238-3000	Non-business Hours	Police Dept., Duty Desk
Calabasas	(818) 878-4225	8am-5pm/M-F	Public Works
	(818) 591-9682	Non-business Hours	City Manager
Caltrans Communications Center	(213) 897-0383	24 Hours	
Carson	(310) 830-7600	7am-6pm/M-Th	City Hall/Street Maintenance
	(310) 830-1123	Non-business Hours	Sheriff, Carson Station
Cerritos	(562) 860-0311	8am-5pm/M-F	Rod Posada, Maint. Super.
	(562) 860-4018	Non-business Hours	Exchange
Claremont	(909) 629-9671	24 Hours	Fire Department, Dispatch

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Attachment B1
24-Hour Spill Response Telephone Numbers

AGENCY	NUMBER	TIME	CONTACT
Commerce	(213) 881-2455	24 Hours	Fire Department
	(213) 722-4805	8am-6pm/M-Th	Public Services
Compton	(310) 605-5600	24 Hours	Police Dept., Watch Commander
Covina	(626) 858-4413	24 Hours	Police Dispatcher
	(626) 331-3391	24 Hours	Police Front Desk
Cudahy	(213) 773-5146	8am-6pm/M-Th	Community Services Dept. or
		8am-5pm/F	City Manager's Office
	(213) 264-4151	24 Hours	Sheriff, East L.A., Complaint Desk
Culver City	(626) 458-3559	7am-5:30pm/M-Th	Joe Baiocco, LACDPW/illegal discharge
	(310) 839-1146	24 Hours	Fire Department, Dispatch
Diamond Bar	(909) 595-2264	24 Hours	Sheriff, Walnut Station, Watch Deputy
Downey	(562) 861-9221	24 Hours	Fire Department
Duarte	(626) 357-7931	7:30am-6pm/M-Th	Emergency Response
	(626) 451-2078	Non-business Hours	Beeper number
	(909) 860-4470	Non-business Hours	Bill Ornelas, home number
El Monte	(626) 580-2100	24 Hours	Police Department
	(626) 580-2150	24 Hours	Fire Department
El Segundo	(310) 322-4670 x363	24 Hours	Fire Department/Steve Tsumura
Gardena	(310) 323-7911	24 Hours	Fire Dispatch
Glendale	(818) 956-4800	24 Hours	Fire Department
Glendora	(626) 914-8250	24 Hours	Police Department
Hawaiian Gardens	(562) 420-2641	8am-5:30pm/M-Th	Public Works
	(562) 403-4406	24 Hours	Police Department
Hawthorne	(310) 970-7052	24 Hours	Police Dispatcher
	(310) 970-7968	24 Hours	Fire Department
Hermosa Beach	(31) 318-0313	24 Hours	Police Dispatcher
Hidden Hills	(213) 890-4317	8am-4:30pm/M-F	L.A. Co. Fire Department
	(213) 881-2455	Non-business Hours	Dispatch, Health HAZMAT
Huntington Park	(213) 584-6253	8am-5pm/M-Th	City Engineer Department
	(213) 587-5211	Non-business Hours	Police Department
Industry	(626) 333-2211	9am-5pm/M-F	John Ballas or City Engineering
	(626) 330-3322	Non-business Hours	Sheriff, Watch Commander
(Non-Business Hrs Complaints in Road & Sewer Maintenance Jurisdictions – Call LACDPW Yard)			
Inglewood	(310) 412-5491	6:30am-3:00pm	Sewer Department
	(310) 671-8233	24 Hours	Fire Dept. Communications Center
Irwindale	(626) 962-3601	24 Hours	Police Department

Attachment B1
24-Hour Spill Response Telephone Numbers

AGENCY	NUMBER	TIME	CONTACT
La Canada Flintridge	(818) 790-8880	7am-5pm/M-Th	City Hall/Public Works
	(818) 790-8880	8am-5pm/F	City Hall/Public Works
	(818) 248-3464	24 Hours	Sheriff, Crescenta Valley Station
(24 Hours Complaints in Road & Sewer Maintenance Jurisdictions – Call LACDPW Yard)			
La Habra Heights	(562) 694-6302	7:30am-6pm/M-Th	City Hall (Call First)
	(562) 694-1465	7:30am-6pm/M-Th	City Hall (No recorder)
	(562) 694-8283	Non-business Hours	City Volunteer Fire Department
Lakewood	(562) 866-9771 x2500	7:30am-5:30pm/M-F	Public Works
	(562-866-9061 x290	Non-business Hours	Sheriff, Lakewood Station
La Mirada	(562) 943-0131 x250	7am-5pm/M-F	Environmental Services Dept.
	(562) 690-3845	10am-8pm/M-Th	Public Safety
	(562) 690-3845	10am-9pm/F-Sat	Public Safety
	(562) 690-3845	12pm-8pm/Sun	Public Safety
	(562) 943-5512	Non-business Hours	L.A. County Fire Station 49
Lancaster	(805) 723-6211	7:30am-4:30pm/M-F	Maintenance Yard
	(805) 540-1579	Non-business Hours	Pager Number
La Puente	(626) 855-1500	8am-5pm/M-F	Dan Chadwick
	(626) 330-3322	24 Hours	Sheriff; Watch Commander
La Verne	(909) 596-8741	8am-6pm/M-Th	Public Works Dept. or Dan Keesey
	(909) 596-1913	Non-business Hours	Police Department
Lawndale	(310) 970-2160	7:30am-5:30pm/M-Th	Public Works Department
	(310) 671-7531	24 Hours	Sheriff, Dispatch
	(310) 679-1131	24 Hours	L.A. Co. Fire Dept., HAZMAT
Lomita	(310) 325-7110	8:15am-4:30pm/M-F	Gary Irwin or Code Enforcement
	(31) 539-1661	24 Hours	Sheriff-Complaint Desk
Long Beach	(562) 570-2722	7:30am-4:30pm/M-F	Street Maint./Storm Drains
	(562) 435-6711	Non-business Hours	Police Communication
Los Angeles	(213) 485-5500	Non-business Hours	City Hall Operator
	(800) 974-9794	7am-4:30pm/M-F	L.A. City Hotline
Lynwood	(310) 603-0267	7am-6pm/M-Th	Engineering – Ted Semaan
	(562) 861-9221	Non-business Hours	Fire Department
Malibu	(310) 456-2489 x247	9am-5pm/M-F	Public Works Department
			Rick Morgan (24-Hr. voice mail)
	(818) 878-1808	Non-business Hours	Sheriff-Emergency Only
Manhattan Beach	(310) 545-5621 x380	8am-4:30pm/M-F	Public Works Department
	(310) 545-5621 x222	Non-business Hours	Police Department
Maywood	(213) 562-5005	24 Hours	Police Department

Attachment B1
24-Hour Spill Response Telephone Numbers

AGENCY	NUMBER	TIME	CONTACT
Monrovia	(626) 359-3231	7am-6pm/M-Th	Public Works Department
	(626) 359-1152	Non-business Hours	Police Department, Dispatch
Montebello	(213) 887-1460	8am-5pm/M-F	Public Works Department
	(213) 887-4510	24 Hours	Charlie Ford, HAZMAT Fire Dept.
	(213) 887-1212	24 Hours	Cpt. Mike Knight, Police Dept.
Monterey Park	(626) 307-1320	8am-5pm/M-F	City Engineer
	(626) 573-1311	24 Hours	Police Department
Norwalk	(562) 929-5511	6am-6pm/M-Th	Public Services Department
	(562) 929-5700	8am-6pm/F	Public Services Department
	(562) 863-8711	Non-business Hours	Sheriff - Complaints Desk
Palmdale	(805) 267-5234	8:30am-5pm/M-F	Code Enforcement Division
	(805) 267-4300	Non-business Hours	Sheriff
Palos Verdes Estates	(310) 378-4211	24 Hours	Police Department
	(310) 378-0383	7am-3:30pm/M-F	Public Works Department
Paramount	(562) 220-2020	7:30am-5:30pm/M-Th	Public Works Department
	(562) 866-9061 x290	Non-business Hours	Sheriff, Lakewood Station
Pasadena	(626) 744-4501	24 Hours	Police Department
Pico Rivera	(562) 949-2421	24 Hours	Sheriff – Complaint Desk
Pomona	(909) 622-1241	24 Hours	Police Department Dispatch
Rancho Palos Verdes	(310) 539-1661	24 Hours	Lomita Sheriff – Complaint Desk
Redondo Beach	(310) 379-5416	24 Hours	Fire Dispatcher
Rolling Hills	(310) 377-1521	7:30am-5pm/M-F	Code Enforcement
	(310) 539-1661	24 Hours	Sheriff – Complaint Desk
Rolling Hills Estates	(310) 377-1577	7:30am-6:30pm/M-Th	City Hall
	(310) 377-1577	7:30am-4:30pm/F	City Hall
	(310) 539-1661	Non-business Hours	Sheriff- Complaint Desk
Rosemead	(626) 288-6671	7am-6pm/M-Th	Engineering Division
	(626) 285-7171	Non-business Hours	Sheriff, Temple City Sta., Watch Sgt.
San Dimas	(909) 394-6240	7:30am-5:30pm/M-Th	Department of Public Works
	(909) 394-6240	8am-5pm/F	Department of Public Works
	(909) 595-2264	Non-business Hours	Sheriff, Watch Deputy
San Fernando	(818) 898-1293	7am-5pm/M-F	Public Works Dept. Yard
	(818) 898-1267	Non-business Hours	Police Department
San Gabriel	(626) 308-2880	24 Hours	Fire Department (Call First)
	(626) 288-5050	24 Hours	Fire Department / Emergency
San Marino	(626) 300-0720	24 Hours	Police Department
	(626) 300-0735	24 Hours	Fire Department

Attachment B1
24-Hour Spill Response Telephone Numbers

AGENCY	NUMBER	TIME	CONTACT
Santa Clarita	(805) 222-7222	8am-5pm/M-F	Building & Safety
	(805) 255-1121	24 Hours	Sheriff
Santa Fe Springs	(562) 944-9713	8am-5pm/M-F	Fire Department, Santa Fe Springs
	(562) 868-1711	24 Hours	Fire Department, Downey Dispatch
Santa Monica	(310) 458-8533	6:30am-4:pm/M-F	Wastewater
	(310) 458-2210	6:30am-6pm/M-F	Industrial Waste
	(310) 458-8672	24 Hours	(Illegal Dumping) Fire Dept. Dispatch
Sierra Madre	(626) 355-1414	24 Hours	Police Department
Signal Hill	(562) 989-7200	24 Hours	Police Department
South El Monte	(626) 285-7171	24 Hours	Sheriff, Temple City Sta., Watch Sgt.
South Gate	(213) 563-5400	24 Hours	Police Department
South Pasadena	(626) 799-1121	24 Hours	Police & Fire Dispatcher
Temple City	(626) 285-2171	8am-6pm/M-Th	Public Services
	(626) 285-7171	24 Hours	Sheriff, Temple City Sta., Watch Sgt.
Torrance	(310) 618-5929	7:30am-5:30pm/M-Th	Environmental Health
	(310) 618-5641	24 Hours	Police Department – Complaint Desk
Ventura County	(805) 654-5051	7:30am-5:30pm/M-Th	Vicki Musgrove
Vernon	(213) 583-6331	24 Hours	Fire Department
Walnut	(909) 598-5241	7:30am-5:30pm/M-Th	Building & Safety Department
	(909) 598-5241	8am-5pm/F	Building & Safety Department
	(909) 594-7175	Non-business Hours	Answering Service/Emergency
West Covina	(626) 814-8500	24 Hours	Police / Fire Department
West Hollywood	(213) 848-6404	8am-6pm/M-F	Environ. Services Div., Code Enforce.
	(213) 855-8850	Non-business Hours	Sheriff, West Hollywood Station
	(213) 262-2111	Non-business Hours	L.A. Co. Fire Department
Westlake Village	(805) 653-6597	8am-5pm/M-F	Westlake Village Public Works
	(818) 878-1808	Non-business Hours	Sheriff, Lost Hills Station
Whittier	(562) 464-3561	8am-5pm/M-F	Public Works Department
	(562) 695-5214	Non-business Hours	Whittier Pumping Plant II

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APPENDIX C

RECOMMENDED BMPs for SITE PLANNING, POST-CONSTRUCTION, and REDEVELOPMENT/INFILL

Appendix C
Recommended BMPs for Site Planning, Post-Construction, and Redevelopment/Infill

Site Planning BMPs
Minimize Storm Water Runoff
Pervious Drainage System
Reduce Area of Impervious Surface
Site Layout

Post-Construction BMPs	
BMP Name	**BMP Identification No. and Name [a]**
Aboveground Tank Berms	SC41, Aboveground Tank Berms
Car Wash Facility	SC3, Vehicle and Equipment Washing and Steam Cleaning
Catch basin insert	Not applicable.
Catch-basin screen	Not applicable.
Cistern collection systems	Not applicable.
Clarifiers	Not applicable.
Constructed Wetlands	TC3, Constructed Wetlands
Continuous flow deflection/separation systems	Not applicable.
Control of Impervious Runoff	Not applicable.
Curb elimination on landscape areas	Not applicable.
Detention/Infiltration device maintenance	SC75, Has the developer/owner determined how detention/infiltration devices planned for the site will be maintained
Drip Irrigation systems	Not applicable.
Efficient Irrigation	Not applicable
Energy Dissipaters	ESC40, Outlet Protection
Extended Detention Basins	TC5, Extended Detention Basin
Facility design to divert wash-off to sanitary sewers	Not applicable.
Filtration systems	Not applicable.
Flow diversion to landscape or pervious areas	Not applicable.
Geotextiles and Mats	ESC20, Geotextiles and Mats
Illicit Connection Prevention	SC60, Illicit Connection Prevention – Will any planned connections to the storm drain carry non-storm water discharges
Infiltration Basins	TC1, Infiltration
Infiltration Trenches	TC1, Infiltration
Inlet Trash Racks	Not applicable.
Landscape Design	ESC2, Preservation of Existing Vegetation; ECS10, Seeding and Planting; ESC11, Mulching
Linings for Urban Runoff Conveyance Channels	Not applicable.
Materials Management	SC5, Outdoor Loading/Unloading of Materials; SC6, Outdoor Container Storage of Liquids; SC8, Outdoor Storage of Raw Materials, Products, and By-Products
Material storage management	SC20, Material storage control – Design site with bermed and covered storage areas for material storage located away from storm drains
Media Filtration	TC6, Media Filtration

[a] Corresponds to the BMP number and name as in the *California Storm Water Best Management Practice Handbooks* (1993).

Post-Construction BMPs (continued)	
BMP Name	**BMP Identification No. and Name [a]**
Motor Fuel Concrete Dispensing Areas	SC2, Vehicle and Equipment Fueling
Motor Fuel Dispensing Area Canopy	SC2, Vehicle and Equipment Fueling
Multiple treatment systems in combination	TC8, Multiple treatment systems in combination
Normal flow separation/storage systems	Not applicable.
Non-storm water discharges elimination	SC1, Eliminate non-storm water discharges to the storm drain collection system
Oil/Water Separators and Water Quality Inlets	TC7, Oil/Water Separators and Water Quality Inlets
Outdoor Process Equipment Operation and Maintenance	SC7, Outdoor Process Equipment Operation and Maintenance – Design site to include a canopy over outdoor processes
Outdoor Storage	SC6, Outdoor Container Storage of Liquids; SC8, Outdoor Storage of Raw Materials, Products, and By-Products
Pesticide and fertilizer use elimination or reduction	Not applicable.
Porous Pavement and Alternative Surfaces	TC1, Infiltration
Post signs to caution improper practices or to educate	Not applicable.
Primary waste-water treatment systems	Not applicable.
Protect Slopes and Channels	ECS40, Outlet Protection; ESC42, Slope Roughening and Terracing
Retention grading	Not applicable.
Scheduling	ESC1, Scheduling activity
Secondary waste-water treatment systems	Not applicable.
Self -Contained Areas for Vehicle or Equipment Washing, Steam Cleaning, Maintenance, Repair, or Material Processing	SC3, Vehicle and Equipment Washing and Steam Cleaning; SC4, Vehicle and Equipment Maintenance and Repair; SC7, Outdoor Process Equipment Operations and Maintenance
Storm Drain System Stenciling and Signage	SC30, Storm Drain System Signs
Trash Container Areas	SC9, Waste Handling and Disposal
Vacuum sweeping of parking lots	Not applicable
Vegetated buffer zones	Not applicable.
Vegetated Swales and Strips	TC4, Bio-filters
Wet Pond	TC2,Wet Pond

[a] Corresponds to the BMP number and name as in the *California Storm Water Best Management Practice Handbooks* (1993).

Redevelopment and Infill BMPs	
BMP Name	**BMP Identification No. and Name [a]**
Aboveground Tank Berms	SC41, Aboveground Tank Berms
Car Wash Facilities	SC3, Vehicle and Equipment Washing and Steam Cleaning
Catch basin insert	Not applicable.
Catch-basin screen	Not applicable.
Cistern collection systems	Not applicable.
Clarifiers	Not applicable.
Continuous flow deflection/separation systems	Not applicable.
Control of Impervious Runoff	Not applicable.
Curb elimination on landscape areas	Not applicable.
Detention/Infiltration device maintenance	SC75, Has the developer/owner determined how detention/infiltration devices planned for the site will be maintained
Drip Irrigation systems	Not applicable.
Efficient Irrigation	Not applicable.
Energy Dissipaters	ESC40, Outlet Protection
Facility design to divert wash-off to sanitary sewers	Not applicable.
Filtration systems	Not applicable.
Flow diversion to landscape or pervious areas	Not applicable.
Geotextiles and Mats	ESC20, Geotextiles and Mats
Illicit Connection Prevention	SC60, Illicit Connection Prevention – Will any planned connections to the storm drain carry non-storm water discharges
Landscape Design	ESC2, Preservation of Existing Vegetation; ECS10, Seeding and Planting; ESC11, Mulching
Linings for Urban Runoff Conveyance Channels	Not applicable.
Materials Management	SC5, Outdoor Loading/Unloading of Materials; SC6, Outdoor Container Storage of Liquids; SC8, Outdoor Storage of Raw Materials, Products, and By-Products
Material storage management	SC20, Material storage control – Design site with bermed and covered storage areas for material storage located away from storm drains
Media Filtration	TC6, Media Filtration
Motor Fuel Concrete Dispensing Areas	SC2, Vehicle and Equipment Fueling
Motor Fuel Dispensing Area Canopy	SC2, Vehicle and Equipment Fueling
Multiple treatment systems in combination	TC8, Multiple treatment systems in combination
Non-storm water discharges elimination	SC1, Eliminate non-storm water discharges to the storm drain collection system
Normal flow separation/storage systems	Not applicable.
Oil/Water Separators and Water Quality Inlets	TC7, Oil/Water Separators and Water Quality Inlets
Outdoor Process Equipment Operation and Maintenance	SC7, Outdoor Process Equipment Operation and Maintenance – Design site to include a canopy over outdoor processes

[a] Corresponds to the BMP number and name as in the *California Storm Water Best Management Practice Handbooks* (1993).

Redevelopment and Infill BMPs (continued)	
BMP Name	**BMP Identification No. and Name [a]**
Outdoor Storage	SC6, Outdoor Container Storage of Liquids; SC8, Outdoor Storage of Raw Materials, Products, and By-Products
Pesticide and fertilizer use elimination or reduction	Not applicable.
Porous Pavement and Alternative Surfaces	TC1, Infiltration
Post signs to caution improper practices or to educate	Not applicable.
Primary waste-water treatment system	Not applicable.
Protect Slopes and Channels	ECS40, Outlet Protection; ESC42, Slope Roughening and Terracing
Retention grading	Not applicable.
Scheduling	ESC20, Scheduling activity
Secondary waste-water treatment systems	Not applicable.
Self-Contained Areas for Vehicle or Equipment Washing, Steam Cleaning, Maintenance, Repair, or Material Processing	SC3, Vehicle and Equipment Washing and Steam Cleaning; SC4, Vehicle and Equipment Maintenance and Repair; SC7, Outdoor Process Equipment Operations and Maintenance
Storm Drain System Stenciling and Signage	SC30, Storm Drain System Signs
Trash Container Areas	SC9, Waste Handling and Disposal
Vacuum sweeping of parking lot	Not applicable.
Vegetated buffer zones	Not applicable.
Vegetated Swales and Strips	TC4, Bio-filters

[a] Corresponds to the BMP number and name as in the *California Storm Water Best Management Practice Handbooks* (1993).

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APPENDIX D

BMP SELECTION CRITERIA

The following criteria should be considered during the process of assessing the appropriateness (benefits and limitations) of BMPs for a particular project:

- project characteristics;
- site factors;
- pollutant removal capability;
- short-term and long-term costs;
- responsibility for maintenance;
- contributing watershed area; and
- environmental enhancement.

D.1 PROJECT CHARACTERISTICS

Selection of BMPs for a project is a function of project characteristics, such as type or size of project. Post-construction activities and operations that may be potential sources of storm water pollution are often the same for a given type of project. Projects developed on large sites provide the opportunity to incorporate a wider variety of BMPs, whereas smaller sites often have physical constraints precluding implementation of BMPs requiring large land areas.

D.2 SITE FACTORS

Site factors have common physical restrictions on BMPs and include:

Steep Slopes: Steep slopes restrict the use of several BMPs. Porous pavement must be situated in sites with slopes of 5 percent or less. Swales can only be used if their slope is less than 5 percent; however, swales often can be used perpendicular to the slope or with a drop structure. Also, because of slope stability concerns, infiltration trenches and filter strips are not practical when slopes exceed 20 percent.

High Water Table: The water table acts as an effective barrier to exfiltration and can sharply reduce the ability of an infiltration BMP to drain properly. If the height of the seasonally high water table extends to within 4 feet (1.2 meters) of the bottom of an infiltration BMP, the site is seldom considered suitable. Given the climate and geology of Southern California, this is typically not an issue, except for some areas adjacent to surface water bodies.

Soil Permeability: The type of soil is an important characteristic that can limit the applicability of a particular BMP at a particular site since the long term percolation rate is governed by soil type. This

soil permeability factor is particularly relevant to infiltration BMPs, which should not be applied to sites with infiltration rates of less than 0.27 inch per hour (0.686 centimeters), as defined by the least permeable layer in the shallow soil profile. This limiting rate excludes most "C" and "D" soils (Soil Classification System) which cannot exfiltrate enough runoff through the subsoil. In addition, extremely permeable sandy soils may not maintain adequate water levels in wet ponds.

Proximity to Foundations and Wells: Since infiltration BMPs divert runoff back into the soil, some development sites may experience difficulty with local seepage, especially if located near a building foundation. Another risk due to diverted runoff through infiltration may be contamination of groundwater supplies. Limited research has been performed to evaluate this risk, however, it is advisable to maintain infiltration BMPs at least 100 feet (30 meters) from drinking water wells. The risk is greater when shallow soils with organic materials are bypassed.

Climatic Region: BMPs should include appropriate designs to address issues of rainfall volume and intensity during wet weather seasons so as to consider the economic feasibility of using such BMPs and/or designs. Typically, the evaluation of long term rainfall records must be considered together with site conditions to properly size structural treatment BMPs. In addition, wet ponds require some continuous flow (dry weather water source) to keep them from stagnating or developing odor and mosquito problems.

Land Consumption: Some sites are too intensively developed or limited in area to allow for some BMPs, such as pond BMPs and porous pavement, which require a large surface area and buffer area.

Maximum Depth: To preserve storage capacity for subsequent rain events, keep water from stagnating, and provide optimal pollutant removal conditions, infiltration BMPs must be designed to completely drain within 2 to 3 days after a storm. If the infiltration rates of the underlying soils are slow, the available depth of the infiltration facility may be limited. These restrictions vary depending on whether the facility is a trench, basin, injection well, or porous pavement.

Restricted Land Uses: Certain BMPs can only be applied to particular land uses, and are not broadly applicable for all development sites. Porous pavement can only be used for sites with parking lots not expected to receive heavy car or truck traffic, or much sediment.

High Sediment Input: Most BMPs are unable to handle the large loads of sediment that may be generated during the construction phase of development. Infiltration BMPs are particularly susceptible to rapid clogging and subsequent failure if significant sediment loads are allowed to enter the structure. As a general rule, these BMPs should not be installed until all of the land to be disturbed by construction in the contributing watershed is effectively stabilized and will remain

stabilized. Contractors must often take unusual steps during the actual installation of the infiltration BMPs to prevent soil compaction or contamination by sediment. To prevent clogging of the infiltration BMPs after construction, many designs call for the use of a pre-treatment device to filter sediment and other coarse particles before they reach the infiltration BMP. In addition, in areas where large amounts of fine sediment may occur even in the absence of upstream construction, BMPs such as porous pavement are not recommended.

Landscape Enhancement: If properly designed, many BMP options have the potential to enhance the urban landscape. Wet ponds and wetlands are frequently used to create a waterfront effect in residential developments, and may actually increase the value of the adjacent property. Dry extended detention areas can serve as attractive parks, either manicured or natural in design, or sports fields. Given the typical rainfall patterns in Southern California, these open areas would be available for public use most of the year. Most infiltration BMPs or lined detention areas have a neutral or negative effect on landscape appearance. In general, BMPs may be visually attractive or aesthetically unappealing, depending upon the creativity of the project designer.

D.3 POLLUTANT REMOVAL CAPABILITY

The nature of the pollutant being removed and its concentration often sets an upper limit on the potential removal rate that can be achieved with a given BMP. The pollutant removal capability of a BMP is primarily governed by three interrelated factors: removal mechanisms as affected by the design of the BMP, fraction of the annual runoff volume that is effectively treated, and nature of the urban pollutant being treated.

Pollutants such as sediment and lead (which is typically bound to fine sediment) can be removed effectively by common BMP removal mechanisms, including settling and filtering. Soluble pollutants such as nitrate, phosphate, and some trace metals are more difficult to remove and require biological and/or chemical mechanisms, such as uptake by bacteria, algae, rooted aquatic plants, organic material, terrestrial vegetation, or soils.

D.4 SHORT-TERM AND LONG-TERM COSTS

The appropriateness of a BMP for a particular site can be affected by economic feasibility considerations that encompass short- and long-term cost factors. Short-term costs include installation costs for both materials and labor. Long-term costs include maintenance. To sustain proper function, some BMPs require low level maintenance on a regular and frequent basis, whereas other BMPs require infrequent maintenance of a more extensive nature. Maintenance costs will

include the proper disposal of accumulated material. In selecting a control method, cost considerations—construction, installation, and maintenance—associated with the BMP should be considered.

D.5 RESPONSIBILITY FOR MAINTENANCE

Improper maintenance is one of the most common reasons for water quality controls to not function as designed or to fail entirely. It is important to consider who will be responsible for maintenance of a permanent BMP, and what equipment is required to perform the maintenance properly.

D.6 CONTRIBUTING WATERSHED AREA

The feasibility of a particular BMP depends on the contributing watershed area. A BMP cannot be practically suitable for all urban area sizes. For instance, wet pond BMPs generally require a significant contributing watershed area of greater than 10 acres (4 hectares), and in locales such as Southern California, a dry weather source of water. By contrast, infiltration and vegetative BMPs are applicable for catchments less than 10 acres (4 hectares), due to space, economic, or flow volume constraints.

It should be noted that the contributing watershed area does not have to be limited to the development project site. By using local topography and drainage, the contributing watershed area may be increased or decreased to better accommodate a particular BMP. For example, additional runoff generated away from the development project may be routed to the BMP, thereby increasing total catchment area and making pond options more feasible. Conversely, various portions of the total runoff from a development project site may be diverted to smaller, individual BMPs, thereby decreasing the contributing watershed area and making infiltration and vegetative BMPs more practical.

D.7 ENVIRONMENTAL IMPACT AND ENHANCEMENT

Low Flow Maintenance: Downstream aquatic life may be jeopardized when the natural low flow levels experienced during the dry weather season decline even further because of reduced infiltration in urbanized watersheds. However, this is sometimes offset by irrigation return flows which may cause unnatural dry weather flow. Infiltration BMPs can contribute significantly to groundwater recharge and may be able to help the watershed better mimic its past hydrologic behavior. Vegetative BMPs such as swales and filter strips appear to have modest potential in this regard, while pond BMPs have little effect in maintaining low flows.

Streambank Erosion Control: Streambank erosion not only contributes large sediment loads to receiving waters, but also has an adverse impact on the habitat quality for downstream aquatic life. Some BMPs, including extended detention ponds, and full exfiltration BMPs, can reduce erosive storm flows enough to keep downstream channels and banks relatively stable, whereas most other BMPs have only marginal capabilities in this regard.

Aquatic/Wildlife Habitat Creation: Some BMP options create wetland or open water areas utilized by waterfowl, marsh birds, and other wildlife. Shallow marshes and wet ponds are particularly well suited for this role, if relatively small investments are made in landscaping design and plant selection. Consideration would have to be given to a dry weather source of water, unless a seasonally wet area is desired. Terrestrial wildlife habitat may be created through the incorporation of BMPs such as wet ponds, extended detention ponds, infiltration basins, and filter strips. Relatively diverse biological communities may further be enhanced through judicious planting of trees, shrubs, and grasses that provide food and cover for the target wildlife.

APPENDIX E

PUBLIC CONSTRUCTION ACTIVITIES MANAGEMENT GUIDANCE

E.1 CONSTRUCTION ACTIVITY MANAGEMENT REQUIREMENTS

E.1.1 Construction Control Measures

Guidance for preparation of a local Storm Water Pollution Prevention Plan (local SWPPP) and Wet Weather Erosion Control Plan (WWECP) for Construction Priority Projects is provided in Attachment E1. The General Construction Permit can be viewed or downloaded from the SWRCB's web page: www.swrcb.ca.gov/stormwtr/construction.htm.[8] BMP selection guidance is provided in Attachment E2.

E.1.2 Site Inspection

A construction site inspection checklist that can be used for contractor self-inspections for Construction Priority Projects and a Permittee construction site inspection checklist are provided in Attachments E3 and E4, respectively.

E.2 PROCEDURES TO SEEK COVERAGE UNDER THE MUNICIPAL PERMIT (OPTIONAL)

E.2.1 Notification

The Permittee will complete a Notice of Construction Activity and submit the notice to the Regional Board 30 days prior to the commencement of construction activity. A copy of the Notice of Construction Activity and the instructions for completing it are provided in Attachment E5. This form and the instructions may be obtained from the Regional Board.

If coverage is sought under the Permit for a construction activity program that deviates from the one described in this model program, a description of the alternative program must be submitted for consideration by the Executive Officer. The description of the alternative program may use the model program as a template, with changes noted by strikeout of text and insertion of new text, or may be a completely new document. In either case, the construction activity program description should explain how deviations from the model program address unique aspects of Permittee's public construction activity and satisfy the requirements of the Permit. The Regional Board will provide written notice of acceptance of the alternative program or provide a written response specifying the inadequacies of the alternative program.

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8 A copy of the General Construction Permit can also be obtained from the Los Angeles Regional Board at 320 W. 4th Street, Suite 200, Los Angeles, CA 90013; telephone 213.576.7700.

E.2.2 BMP Checklist

A BMP checklist is provided as Attachment E6. The categories of BMPs described in Sections E.2.2.1 through E.2.2.5 must be included.

E.2.2.1 Erosion Control (Soil Stabilization) Practices

Preserve existing vegetation where feasible and revegetate disturbed areas as soon as feasible after grading or construction. At a minimum, one or more erosion control practices must be implemented on all disturbed areas during the winter season.

E.2.2.2 Sediment Control Practices

Use control practices which, to the extent feasible, will prevent a net increase in sediment load in stormwater discharges. At a minimum, one or more sediment controls must be implemented for all significant sideslope and downslope boundaries of the construction site and at all internal storm drain inlets.

E.2.2.3 Tracking Control Practices

Use tracking control practices to reduce tracking of sediment onto public and private roads, and inspect and clean roads as necessary.

E.2.2.4 Wind Erosion Control Practices

Use control practices to reduce wind erosion. Practices are generally similar to those used for erosion control.

E.2.2.5 Non-Stormwater and Materials and Waste Management Practices

Use applicable control practices based on site activities year round to eliminate or reduce the discharge of materials other than stormwater.

E.2.3 Verification of Construction Activity BMPs

The inspection and enforcement procedures described in Section 2.2.2.2 of this document may be followed to verify that construction activity BMPs are properly implemented, maintained and effective.

E.2.4 Preparation of Site-Specific SWPPPs

A site-specific SWPPP that meets the criteria under the General Construction Permit must be prepared for each project for which coverage is sought under the municipal Permit.

E.2.5 Annual Reporting

For all projects covered under the Permit, the annual report to the Regional Board will include:

- Scheduled completion dates for active construction projects (five acres and greater).
- Actual completion dates of projects in the past year.
- Scheduled start and completion dates for projects in the next year.
- A summary evaluation of the effectiveness of SWPPPs at active project sites.
- A certification of compliance with this model program.

In addition, the Permittee should notify the Executive Officer in writing whenever a project schedule changes by more than 3 months from the schedule in the Annual Report.

ATTACHMENT E1

GUIDANCE FOR LOCAL STORMWATER POLLUTION PREVENTION PLAN AND WET WEATHER EROSION CONTROL PLAN

Section 2.2.2.1.3 of this model stormwater management program provided criteria for identifying Priority Projects: if the project is not exempt or subject to the General Construction Permit; if the project is in or adjoining, an environmentally sensitive area; or if the project results in soil disturbance of more than two acres. Section 2.2.2.1.3 also provided additional documentation requirements for these projects. Construction Priority Projects require the preparation of a:

- Local Stormwater Pollution Prevention Plan (SWPPP); and a
- Wet Weather Erosion Control Plan (WWECP) if the soil will be disturbed during the rainy season (November 1 to April 15).

The local SWPPP must be prepared before construction activities begin and must be implemented year-round throughout construction. A WWECP must be prepared prior to each rainy season, and must be implemented throughout that rainy season. This appendix provides guidance for preparing these plans, including sample forms that Permittees may use or provide to the construction contractor.

If a local SWPPP and WWECP is required, it may be prepared by the Permittee, the construction contractor or a consultant. Permittees may elect to determine who must prepare the local SWPPP and WWECP for specific project types. When developing a local SWPPP and WWECP, the preparer should assess site conditions, identify construction activities with the potential to cause stormwater pollution, and then identify the BMPs that will best suit the construction activities. A well-developed plan will provide sufficient detail to properly implement and maintain the BMPs, yet be sufficiently flexible to allow for minor field modifications without making formal plan amendments.

The local SWPPP and WWECP must include a site map of the project (a copy of the grading or drainage plan may be used) showing:

- The project boundary and/or limits of grading. (Permittees may elect to require site limit maps to extend 50 feet beyond property line and/or grading limits.)
- The footprint of existing facilities and facilities that will be built during construction.
- Specific locations where construction materials, vehicles, and equipment will be stored, handled, used, maintained, and disposed, along with locations of structural measures that will be used to contain these materials on site.
- The existing and final grades of the site, along with any intermediate grades during construction that will significantly affect site drainage patterns.

- The location(s) where runoff from the site may enter storm drain(s), channel(s), and/or receiving water(s).
- Specific locations where erosion and sediment control measures will be installed for each permanent or temporary site drainage pattern that will occur before, during and after construction.

The plan will provide information about the project location, owner, and contractor; and include a brief narrative description on the nature of the construction activity and special site conditions, and a list of BMPs for managing targeted construction activities. The plan will also include a BMP checklist with a discussion of the reasons for selecting or rejecting BMPs such as shown in the attached example.

Suggested formats for a local SWPPP and WWECP follow.

E1.1 LOCAL STORMWATER POLLUTION PREVENTION PLAN

E1.1.1 Project Description and Information

1. The name of the project:

   _____

2. The address or location of the project:

   _____

   _____

3. The owner's name, address, phone number and contact person:

   _____

   _____

4. Contractor's name, address, phone number and contact person:

   _____

   _____

   _____

   _____

5. What are the major features that the project will provide? (e.g., low density residential commercial development etc.)

   _____

   _____

   _____

   _____

6. What are the estimated construction start and finish dates?

   Project Start Date: _____
   Project Finish Date: _____

7. What are the estimated dates during which soil will be disturbed?

   Start Grading: _____
   Finish Grading: _____

8. Are there any unique features relating to adjacent water bodies (i.e., in or around a wetland, river, stream, or estuary)?

   _____

   _____

E1.1.2 Best Management Practices

Use the following tables to indicate the BMPs that will be used to control stormwater pollution. Attached additional written documentation if necessary.

E1.1.2.1 General Site Management

BMP Description	Will BMP Be Used?		If Yes, Explain How
	Yes	No	If No, State Reason
Site Planning Considerations			
Scheduling (ESC01)			
Preservation of Existing Vegetation (ESC02)			
Construction Practices			
Dewatering Operations (CA01)			
Paving Operations (CA02)			
Structure Construction & Painting (CA03)			
Dust Control (ESC21)			
Vehicle & Equipment Management			
Vehicle & Equipment Cleaning (CA30)			
Vehicle & Equipment Fueling (CA31)			
Vehicle & Equipment Maintenance (CA32)			
Tracking Control			
Stabilized Construction Entrance (ESC24)			
Contractor Training			
Employee/Subcontractor Training (CA40)			

E1.1.2.2 Construction Materials and Waste Management

BMP Description	Will BMP Be Used?		If Yes, Explain How
	Yes	No	If No, State Reason
Material Management			
Material Delivery and Storage (CA10)			
Material Use (CA11)			
Spill Prevention and Control (CA12)			
Waste Management			
Solid Waste Management (CA20)			
Hazardous Waste Management (CA21)			
Contaminated Soil Management (CA22)			
Concrete Waste Management (CA23)			
Sanitary/Septic Waste Management (CA24)			

E1.1.3 Site Map Checklist

____ The project boundary and/or limits of grading. *(option: 50 feet beyond property line or grading limits)*

____ The footprint of existing facilities and facilities that will be built during construction.

____ The existing and final grades of the site, along with any intermediate grades during construction that will significantly affect site drainage patterns.

____ The location(s) where runoff from the site may enter storm drain(s), channel(s), and/or receiving water(s).

____ Specific locations where construction materials, vehicles, and equipment will be stored, handled, used, maintained, and disposed, along with locations of structural measures that will be used to contain these materials on site.

E1.2 WET WEATHER EROSION CONTROL PLAN

E1.2.1 Project Description and Information

1. The name of the project:

   _____

2. The address or location of the project:

   _____
   _____

3. The owner's name, address, phone number and contact person:

   _____
   _____

4. Contractor's name, address, phone number and contact person:

   _____
   _____
   _____

5. What are the major features that the project will provide? (e.g., low density residential, etc.)

   _____
   _____
   _____
   _____

6. What are the estimated construction start and finish dates?

   Project Start Date: _____
   Project Finish Date: _____

7. What are the estimated dates during which more than 1 acre or 50,000 ft^3 of soil will be disturbed?

   Start Grading: _____
   Finish Grading: _____

8. Are there any unique features relating to adjacent water bodies (i.e., in or around a wetland, river, stream, or estuary)?

   _____
   _____

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E1.2.2 Best Management Practices

Use the following checklists to indicate the BMPs that will be used to control wet weather erosion and off site sedimentation. Attach additional written documentation if necessary.

E1.2.2.1 Erosion Control Practices

BMP Description	Will BMP Be Used?		If Yes, Explain How
	Yes	No	If No, State Reason
Site Planning Considerations			
Scheduling (ESC01)			
Preservation of Existing Vegetation (ESC02)			
Vegetative Stabilization			
Seeding & Planting (ESC10)			
Mulching (ESC11)			
Physical Stabilization			
Geotextiles & Mats(ESC20)			
Dust Control (ESC21)			
Temporary Stream Crossing (ESC22)			
Construction Road Stabilization (ESC23)			
Diversion of Runoff			
Earth Dike (ESC30)			
Temporary Drains & Swales (ESC31)			
Slope Drain (ESC32)			
Velocity Reduction			
Outlet Protection (ESC40)			
Check Dams (ESC41)			
Slope Roughening/Terracing (ESC42)			

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E1.2.2.2 Sediment Control Practices

BMP Description	Will BMP Be Used?		If Yes, Explain How
	Yes	No	If No, State Reason
Silt Fence (ESC50)			
Straw Bale Barrier (ESC51)			
Sand Bag Barrier (ESC52)			
Brush or Rock Filter (ESC53)			
Storm Drain Inlet Protection (ESC54)			
Sediment Trap (ESC55)			
Sediment Basin (ESC56)			

E1.2.3 Site Map Checklist

____ The project boundary and/or limits of grading. (Option: 50 feet beyond property line or grading limits)

____ The footprint of existing facilities and facilities that will be built during construction.

____ The existing and final grades of the site, along with any intermediate grades during construction that will significantly affect site drainage patterns.

____ The location(s) where runoff from the site may enter storm drain(s), channel(s), and/or receiving water(s).

____ Specific locations where erosion and sediment control measures will be installed for each permanent or temporary site drainage pattern that will occur before, during and after construction.

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ATTACHMENT E2

BMP SELECTION PROCESS FOR CONSTRUCTION PROJECTS

In planning a construction project, the Permittee/contractor must answer three key questions with respect to stormwater quality control: (1) what kind of water quality controls are needed?; (2) where should the controls be implemented?; and (3) how much control is enough? In order to answer these questions, the Permittee/contractor should use a documentable, defensible process to identify potential water quality problems, develop design objectives, formulate and evaluate alternatives, select the most appropriate alternatives, and design the plan. A suggested BMP selection process applicable particularly to Priority Projects and General Construction Permit projects is described below.

E2.1 DEVELOP GOALS AND OBJECTIVES

Site specific conditions of development construction projects determine which BMPs are most applicable for a site. The BMPs selected for a site should fulfill the following goals and objectives:

- Be appropriate for the given site constraints;
- Have a beneficial or neutral impact on the environment;
- Provide moderate to high pollutant source control and/or removal capability;
- Meet regulatory requirements;
- Minimize changes in hydrological conditions; and
- Be cost effective.

E2.2 BMP SELECTION CRITERIA

In order to fulfill the above goals and objectives, BMPs should be selected by using appropriate selection criteria that serve to identify the capabilities and limitations of each BMP. Criteria to be considered in screening and selecting BMPs during the planning stage are:

- Site factors (e.g., slope, high water table, soils, potential risks below or downstream of site, etc.)
- Project characteristics (e.g., type, size and duration of construction)
- Pollutant avoidance (source control) or removal capability (effectiveness)
- Cost of implementation
- Environmental compatibility

These criteria may be given equal weight during the BMP selection process, or they may be weighted differentially, depending on the relative importance of each factor for the particular project.

Several general principles that should be considered in selecting erosion and sediment control BMPs include:

- Prevention of pollutant release is superior to pollutant capture later. Select source control BMPs as a first step.
- Selection of BMPs must depend on site characteristics and the construction plan.
- The proper first step is a site drainage analysis. Determine where runoff will enter, cross and exit the site.
- Divert runoff from exposed areas wherever possible.
- Existing vegetation is the most effective erosion control.
- Limit and phase clearing.
- Incorporate natural drainage features whenever possible, using adequate buffers and protecting areas where flow enters the drainage system.
- Minimize slope length and steepness.
- Keep runoff velocities low.
- Reduce the tracking of sediment off site.
- Select and install controls that can be maintained.

E2.3 NOMINATE AND EVALUATE ALTERNATIVES

A number of applicable BMPs have been identified in Section 2.2.2.1.5 of this document for construction projects. The BMPs were nominated from the California Stormwater Best Management Practices Handbooks. Other BMPs from other manuals and sources were also considered.

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E2.4 SELECT BEST ALTERNATIVES

Based on the list of recommended BMPs for construction projects provided in this program, the contractor should use the selection criteria described above to select the best alternatives for the project conditions, characteristics, and concerns. This may be done numerically, by weighting the selection criteria, rating each BMP against each criteria, and summing up a weighted rating for each BMP, which then becomes a relative ranking. Or the selection process may be done in a

more subjective, non-numerical way using experience and professional judgment to select the best alternative BMPs. Either way, the contractor should document the selection process and provide support for the selected system of controls.

E2.5 DESIGN, IMPLEMENT, and MAINTAIN the BMPs

After the appropriate BMPs are selected for a given project, the contractor should document those selected on the standard checklist and show the selected BMPs on the plans, as discussed in Section 3 of this document. It is important that the control measures be properly installed and maintained. Improper installation and poor maintenance are the most common reasons for stormwater controls to not function as designed. Therefore, it is incumbent on the designer to provide sufficient information in the project plans and specifications for their proper installation, and to provide adequate guidance on their proper maintenance so that the installation and maintenance procedures may be incorporated into the project SWPPP or local stormwater pollution prevention plan/wet weather erosion control plan.

ATTACHMENT E3

CONTRACTOR SELF-INSPECTION FORM

E3.1 CONSTRUCTION SITE INSPECTION CHECKLIST

Inspected By: _____

Project: _____

Contractor: _____

Date: _____

Check "Yes" or "No" or "N/A" if not applicable.

YES	NO	N/A		
_____	_____	_____	1.	Has there been an absence of rain since the last inspection?
_____	_____	_____	2.	Are all sediment barriers (e.g., sandbags, straw bales, and silt fences) in place in accordance with the Plan and are they functioning properly?
_____	_____	_____	3.	If present, are all exposed slopes protected from erosion through the implementation of acceptable soil stabilization practices?
_____	_____	_____	4.	If present, are all sediment traps/basins installed and functioning properly (if applicable)?
_____	_____	_____	5.	Are all material handling and storage areas reasonably clean and free of spills, leaks, or other deleterious materials?
_____	_____	_____	6.	Are all equipment storage and maintenance areas reasonably clean and free of spills, leaks, or any other deleterious materials?
_____	_____	_____	7.	Are all materials and equipment properly covered?
_____	_____	_____	8.	Are all external discharge points (i.e., outfalls) reasonably free of any noticeable pollutant discharges?
_____	_____	_____	9.	Are all internal discharge points (i.e., storm drain inlets) provided with inlet protection?
_____	_____	_____	10	Are all external discharge points reasonably free of any significant erosion or sediment transport?

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Check "Yes" or "No" or "N/A" if not applicable.

YES	NO	N/A		
_____	_____	_____	11.	Are all BMPs identified on the Plan installed in the proper location and according to the specifications for the plan?
_____	_____	_____	12.	Are all structural control practices in good repair and maintained in functional order?
_____	_____	_____	13.	Are all on-site traffic routes, parking, and storage of equipment and supplies restricted to areas designated in the Plan for those uses?
_____	_____	_____	14.	Are all locations of temporary soil stockpiles or construction materials in approved areas?
_____	_____	_____	15.	Are all seeded or landscaped areas properly maintained?
_____	_____	_____	16.	Are sediment treatment controls in place at discharge points from the site?
_____	_____	_____	17.	Are slopes free of significant erosion?
_____	_____	_____	18.	Are all points of ingress and egress from the site provided with stabilized construction entrances?
_____	_____	_____	19.	Is sediment, debris, or mud being cleaned from public roads at intersections with site access roads?
_____	_____	_____	20.	Does the Plan reflect current site conditions?

If you answered "no" to any of the above questions (except Number 1), describe any corrective action(s) that must be taken to remedy the problem and when the corrective action is to be completed:

_____

_____

_____

_____

_____

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E3.2 INSPECTION LOG

The site shall be inspected before and after storm events with 0.25 inches or greater predicted or actual precipitation, and documented on the Construction Site Inspection Checklist. Incidents of noncompliance must be reported to the Engineer. A log of all inspections shall be kept current.

Date	Inspector	Type of Inspection			Observations (If post-storm inspection, note size of storm in inches)
		Routine	Pre-Storm	Post-Storm	

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ATTACHMENT E4

STANDARD PERMITTEE INSPECTION FORM REQUIREMENTS

E4.1 CONSTRUCTION SITE INSPECTION CHECKLIST

Inspected By: _____

Project: _____

Contractor: _____

Date: _____

Level I	Yes	No	N/A
1. Are all discharge points reasonably free of any noticeable pollutant discharges? If Yes, go to Question 2. If No, is the project a Priority Project? If Yes, go to Level II. If No, continue below.			
a. Are all material handling and storage areas reasonably clean, and free of spills, leaks, or other deleterious materials?			
b. Are all equipment storage and maintenance areas reasonably clean, and free of spills, leaks, or other deleterious materials?			
c. Are all materials and equipment properly covered?			

If you answered "no" to any of the above questions, describe on the next page any corrective actions that will be required to remedy the problem and when the corrective actions are to be completed.

2. Are all discharge points reasonably free of any significant deposition of sediment? If Yes, go to Question 3. If No, is the project a Priority Project? If Yes, go to Level II. If No, continue below.			
a. Are sediment control BMPs installed downslope of all disturbed areas of the site?			
b. Are sediment control BMPs in proper repair and free of excessive sediment buildup?			
c. Are site entrance and exit points free of tracked sediment?			
d. Are all discharge points (e.g., storm drain inlets) provided with inlet protection?			

If you answered "no" to any of the above questions, describe on the next page any corrective actions that will be required to remedy the problem and when the corrective action is to be completed.

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Level I	Yes	No	N/A
3. Are all discharge points, downstream channels, and slopes not actively under construction free of erosion? If Yes, inspection is complete. If No, is the project a Priority Project? If Yes, go to Level II. If No, continue below.			
a. Are erosion control BMPs in place at or upstream of these locations?			
b. Are erosion control BMPs in proper repair?			
c. Are areas not actively under construction stabilized and access properly restricted from these areas?			

If you answered "no" to any of the above questions, describe on the next page any corrective actions that will be required to remedy the problem and when the corrective action is to be completed.

Level II – Priority Projects			
4. a. Has a local SWPPP been prepared for the project?			
b. Has the local SWPPP been implemented?			
c. Are the BMPs implemented under the local SWPPP effective at meeting the minimum construction material and waste management requirements?			

If you answered "no" to any of the above questions, describe below any corrective actions that will be required to remedy the problem and when the corrective action is to be completed.

5. Are soil disturbing activities occurring during the rainy season? If Yes, continue below. If No, inspection is complete.			
a. Has a WWECP been prepared?			
b. Has the WWECP been implemented?			
c. Are the BMPs implemented under the WWECP effective at meeting the minimum sediment and erosion control requirements?			

If you answered "no" to any of the above questions, describe below any corrective actions that will be required to remedy the problem and when the corrective action is to be completed.

Corrective Action(s) Needed and Schedule for Completion:

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ATTACHMENT E5

NOTICE OF CONSTRUCTION ACTIVITY

State of California

Regional Water Quality Control Board - Los Angeles Region

NOTICE OF CONSTRUCTION ACTIVITY

and of Intent to Comply with the Terms of the NPDES Permit for Municipal Storm Water and Urban Runoff Discharges within the County of Los Angeles Los Angeles Region Order No. 96-054, NPDES No. CAS614001 (CI 6948)

I. MUNICIPAL CONSTRUCTION PROJECT (5 acres or more)

Mark One Category	[ ] New Construction	[ ] Reconstruction	[ ] Change of Information

II. MUNICIPAL OWNER

Name	Contact Person/Title	
Mailing Address	Contact Phone	
City	State	Zip

III. CONTRACTOR

Name	Contact Person/Title	
Mailing Address	Contact Phone	
City	State	Zip

IV. CONSTRUCTION PROJECT INFORMATION

Project Name	Site Contact Person:
Address/Location: Street/Road: City: Zip Code:	Telephone Number:
Project Limits: Mile Post Marker *(if applicable)*:	
Total Size of Construction Site (acres):	Total Area to be Disturbed: _____ acres _____ percent
Percent of Site Imperviousness, Including Rooftops: _____ % before construction _____ % after construction	
Project Start Date:	Projected Completion Date:
Type of Work: [ ] Road / Transportation [ ] Utility [ ] Flood Control [ ] Industrial [ ] Commercial [ ] Other (specify): Brief Description:	

V. RECEIVING WATER INFORMATION

A. Does the storm water runoff from the construction site discharge to: *(Check all that apply)*

[ ] Indirectly to waters of the United States

[ ] Storm Drain System - Provide the owner's name:

[ ] Directly to Waters of the United States (e.g. river, lake, creek, stream, bay, ocean)

B. The water body receiving the construction site's storm water runoff is (e.g. river, lake, creek, stream, bay, ocean):

C. Is this project subject to conditions imposed under a Clean Water Act Section 404 permit or a 401 Water Quality Certification: [ ] Yes [ ] No

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VI. PERMIT REQUIREMENTS

A Construction BMP Checklist and SWPPP: *(Mark One)*

[ ] The BMP Checklist and SWPPP have been prepared for this site

[ ] The BMP Checklist and SWPPP will be prepared before construction begins, by (date)

B Verification and Reporting Procedures *(Mark One)*

[ ] Verification and Reporting Procedures have been prepared for this site

[ ] Verification and Reporting Procedures will be prepared before construction begins, by (date)

C Compliance Responsibility

(1) Has a qualified person has been assigned responsibility for pre-storm and post-storm BMP inspections to identify effectiveness and necessary repairs or design changes?

[ ] Yes Provide person's name and telephone number:

[ ] No

(2) Has a qualified person been assigned responsibility to ensure full implementation of all elements of the SWPPP, including elimination of all unauthorized discharges and preparation of an annual compliance evaluation?

[ ] Yes Provide person's name and telephone number:

[ ] No

VII. SITE MAP

Attach a site map. *Do not submit blue print.*

VIII. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that this construction site will be in compliance with the provisions of Part 2.IV.C.2 of Order No. 96-054, including the development and implementation of a SWPPP and Verification and Reporting Procedures.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

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GENERAL INSTRUCTIONS

NOTICE OF CONSTRUCTION ACTIVITY

INTENT TO COMPLY WITH THE TERMS OF ORDER NO. 96-054 FOR THE DISCHARGE OF STORM WATER ASSOCIATED WITH PUBLIC AGENCY CONSTRUCTION ACTIVITY

Who Must Comply

Discharges of storm water associated with construction activity that results in the disturbance of 5 acres or more of total land area or which is a part of a larger common area of development or sale must be permitted. Construction activity includes clearing, grading, excavation, and reconstruction of existing facilities involving removal and replacement. Construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility.

As of July 31, 1996, discharges of storm water runoff from construction activity (as defined above) that are under the ownership and/or direct responsibility of a Permittee to the NPDES Permit for Municipal Storm Water and Urban Runoff Discharges within the County of Los Angeles, Order No. 96-054, NPDES No. CAS614001 (CI 6948), may be considered permitted under Order No. 96-054. Therefore, coverage under the state's General Construction Activity Storm Water Permit (General Permit) and the associated filing fee is not required if the Permittee chooses this option. However, the Permittee must notify the Regional Board prior to the start of construction activity and must comply with the provisions of Part 2.IV.C.2 of Order No. 96-054.

When and Where to Submit Notice of Construction

The Permittee shall notify the Regional Board of proposed construction activity 30 days prior to commencement of construction activities. The Notice of Construction must be complete and submitted to the Regional Board at the following address prior to start of construction.

Regional Water Quality Control Board
Los Angeles Region
Attn.: Carlos Urrunaga, LA County SW Program
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Completing the Notice of Construction

Section I - Municipal Construction Project: Indicate if the Notice of Construction is being submitted for new construction or reconstruction, or if it is being submitted due to a change of information regarding the construction project.

Section II - Municipal Owner: Enter the name of the construction site's owner (Permittee), address, contact person, and contact person's title and telephone number. The contact person should be the Permittee's staff person in charge of storm water permit compliance and erosion/sediment control for the project.

Section III - Contractor: Enter the contractor's name, address, contact person, and contact person's title and telephone number.

Section IV - Construction Project Information: Enter the name of the construction project, if any, or "Not Applicable." Provide the name of the site contact person that is, or will be, in charge of compliance and oversight of storm water permit requirements and erosion/sediment control. Provide the complete location of the project. If a project does not have a street address, the mile post markers or the limits of the project should be described and clearly delineated on a site map that must be attached to the completed form. Enter the estimated total size of the entire project site in acres. Indicate the total area to be disturbed in acres and as a percentage of the entire project site. Provide an estimate of the project site's impervious area (including rooftops) as a percentage of the entire project site before and after construction. Enter the construction start date and the projected completion date (month, day, year). Indicate the type of construction taking place by checking the appropriate category and provide a short description of the project.

Section V - Receiving Water Information: Indicate if the construction site's storm water runoff discharges indirectly to waters of the United States, to a storm drain system (note owner), and/or directly to waters of the United States. Indirect discharges are those that may flow over adjacent properties or rights-of-way prior to discharging to waters of the United States. Discharges to a storm drain system are those discharges that flow to a storm water runoff collection system operated by municipalities, flood control districts, utilities, or similar entities. Storm water discharges directly to waters of the United States will typically have an outfall structure directly from the facility to a creek, river, bay, ocean, etc.

Provide the name of the water body that receives storm water runoff from the construction site. Indicate if the project will require a Section 404 permit (Army Corps of Engineers) or a 401 Water Quality Certification (Regional Water Quality Control Board).

Section VI - Permit Requirements: Part 2.IV.C.2.b.ii–v of Order No. 96-054 requires:

ii. A checklist of construction activity BMPs using BAT/BCT criteria for public construction activity;

iii. A procedure to verify implementation of construction activity BMPs;

iv. A requirement to prepare and retain site-specific SWPPPs; and

v. A procedure to report annually on the effectiveness of SWPPPs at public construction activity sites, and certify compliance with the requirements of Order No. 96-054.

Indicate whether the BMP Checklist and the SWPPP have been prepared or if not yet completed, provide the date by which the documents will be completed. Indicate whether the Verification and Reporting Procedures have been developed or if not yet completed, provide the date by which the procedures will be completed. <u>These documents and procedures shall be completed prior to the start of construction.</u>

Indicate if a qualified person has been assigned responsibility for pre-storm and post-storm BMP inspections, and if "yes," provide the person's name and telephone number.

Indicate if a qualified person has been assigned responsibility for implementation of the SWPPP, and if "yes," provide the person's name and telephone number.

Section VII - Site Map: Provide a one page drawing of the construction site and its immediate surroundings. The map should delineate the boundaries of the entire project (i.e. for road or channel construction indicate beginning and end point of construction). At a minimum, show existing and proposed buildings, roadways, storm water collection and discharge points, a north arrow and the names of adjacent streets. A map page from a Thomas Guide may be submitted if the entire project is adequately delineated. *Do not submit blue prints.*

Section VIII - Certification: The certification provides an assurance that the Notice of Construction and site map were completed in an accurate and complete fashion and with the knowledge that penalties exist for providing false information. It also requires the Permittee to certify that construction activity at the site will be in compliance with the provisions of Order No. 96-054. The Notice of Construction must be signed by either a principal executive officer, ranking official, or duly authorized representative.

When Construction is Complete

Within 30 days of completion of the construction activity, written notification must be submitted to the Regional Board. Please reference the project name cited in Section III of the Notice of Construction.

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ATTACHMENT E6

BMP CHECKLIST

E6.1 EROSION CONTROL PRACTICES

BMP Description	*Will BMP Be Used?*		*If Yes, Explain How*
	Yes	*No*	*If No, State Reason*
Site Planning Considerations			
Scheduling (ESC01)			
Preservation of Existing Vegetation (ESC02)			
Vegetative Stabilization			
Seeding & Planting (ESC10)			
Mulching (ESC11)			
Physical Stabilization			
Geotextiles & Mats (ESC20)			
Dust Control (ESC21)			
Temporary Stream Crossing (ESC22)			
Construction Road Stabilization (ESC23)			
Diversion of Runoff			
Earth Dike (ESC30)			
Temporary Drains & Swales (ESC31)			
Slope Drain (ESC32)			
Velocity Reduction			
Outlet Protection (ESC40)			
Check Dams (ESC41)			
Slope Roughening/Terracing (ESC42)			

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E6.2 SEDIMENT CONTROL PRACTICES

BMP Description	*Will BMP Be Used?*		*If Yes, Explain How*
	Yes	*No*	*If No, State Reason*
Silt Fence (ESC50)			
Straw Bale Barrier (ESC51)			
Sand Bag Barrier (ESC52)			
Brush or Rock Filter (ESC53)			
Storm Drain Inlet Protection (ESC54)			
Sediment Trap (ESC55)			
Sediment Basin (ESC56)			

E6.3 TRACKING CONTROL PRACTICES

BMP Description	*Will BMP Be Used?*		*If Yes, Explain How*
	Yes	*No*	*If No, State Reason*
Tracking Control			
Stabilized Construction Entrance (ESC24)			

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E6.4 NON-STORMWATER AND MATERIAL AND WASTE MANAGEMENT PRACTICES

BMP Description	*Will BMP Be Used?*		*If Yes, Explain How*
	Yes	*No*	*If No, State Reason*
Construction Practices			
Dewatering Operations (CA01)			
Paving Operations (CA02)			
Structure Construction & Painting (CA03)			
Vehicle & Equipment Management			
Vehicle & Equipment Cleaning (CA30)			
Vehicle & Equipment Fueling (CA31)			
Vehicle & Equipment Maintenance (CA32)			
Material Management			
Material Delivery and Storage (CA10)			
Material Use (CA11)			
Spill Prevention and Control (CA12)			
Waste Management			
Solid Waste Management (CA20)			
Hazardous Waste Management (CA21)			
Contaminated Soil Management (CA22)			
Concrete Waste Management (CA23)			
Sanitary/Septic Waste Management (CA24)			
Contractor Training			
Employee/Subcontractor Training (CA40)			

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APPENDIX F

VEHICLE MAINTENANCE/MATERIAL STORAGE FACILITIES MANAGEMENT GUIDANCE

F.1 FACILITIES COVERED BY THE PERMIT

Facilities that meet the description in Item 3.a.i of the Permit are those that conduct activities similar to Phase 1 facilities but are not subject to the requirements of the California General Industrial Activities Storm Water Permit (General Industrial Permit). Examples may include portions of municipal yards that:

- Conduct vehicle and equipment repairs, painting, fueling, and lubrication.
- Serve as salvage yards to store or dismantle vehicles or equipment.
- Serve as temporary storage areas for waste oil and other materials discovered and removed from public areas.

Municipal facilities that are subject to the General Industrial Permit, and therefore are not covered under this Permit, generally include airports and large corporation yards that conduct activities such as servicing urban or suburban bus lines or public warehousing and storage. These facilities should have already filed for coverage under the General Industrial Permit. Additional information on obtaining coverage for these facilities is provided in Section 9.

Items 3.a.ii and 3.a.iii of the Permit cover many municipal corporation yards where vehicles and equipment are maintained on a regular basis.

Item 3.a.iv of the Permit describes storage facilities that are regulated by state laws for hazardous materials. These facilities should have already prepared hazardous materials business plans or Spill, Prevention, Control, and Counter-measure (SPCC) plans.

F.2 POLLUTION PREVENTION PLAN

Under this Permit, vehicle maintenance and material storage facilities, identified in Section IV.3.a of the Permit, are required to develop a plan to minimize the potential to discharge pollutants into stormwater, and implement best management practices (BMPs) to improve site-specific pollutant control. The pollution prevention plan is a method to help determine what the existing activities and potential pollutants are at facilities, and then select appropriate BMPs to improve pollutant control at those facilities. There are five suggested steps to preparing a pollution prevention plan:

- Planning and Organization
- Facility Assessment

- Best Management Practice Selection
- Documentation and Implementation
- Evaluation

These suggested steps are based on the guidance provided in the recently revised General Industrial Permit (April 1997). The guidance provided here does not include monitoring and reporting activities, as these are not required under this Permit.

Although a unique plan may be developed for each facility, if several facilities conduct similar activities, a general plan could be developed and then customized later for individual sites to help reduce cost and effort. An example of a written pollution prevention plan for a fleet maintenance facility is included as Attachment F1. Other pollution prevention plan formats may be used as long as they discuss the BMPs selected for implementation. The following sections detail the information that was used to complete the example pollution prevention plan.

F.2.1 Planning and Organization

The following planning and organizational activities may be considered:

- Identify a specific individual or individuals as members of a pollution prevention team to develop and implement the plan.
- Review any other regulatory requirements the facility has and any existing facility plans.

F.2.2 Facility Assessment

Facilities should be reviewed to determine existing conditions. The assessment may include the following steps:

- **Site Map**. Prepare a site map of the facility. This can be prepared from existing "as-built" or other construction plans of the yard, or similar drawings prepared for other programs. Features displayed on the map should include:
  - An outline of the entire property
  - Drainage areas on the property and direction of flow
  - Areas of soil erosion
  - Nearby water bodies and municipal storm drain inlets
  - Location of stormwater conveyance systems (ditches, inlets, storm drains, etc.)

- Location of existing stormwater controls (oil/water separators, sumps, etc.).
- Location of "impervious" areas--paved areas, buildings, covered areas
- Locations where materials are directly exposed to stormwater
- Locations where toxic or hazardous materials have spilled in the past
- Location of buildings and activity areas (e.g., fueling islands, garages, waste container area, wash racks, hazardous material storage areas, etc.)

- **Significant Materials**. Complete an inventory of materials at the site, indicating where they are stored or handled and the typical amount on site. The materials inventory can be built from existing similar inventories prepared for other programs.
- **Potential Pollutant Sources**. Write a description of activities that take place at the facility, the potential pollutant sources from the activities, and the pollutants that could be discharged. Activities that may be identified include: lubricating, fueling and washing vehicles/equipment; stockpiling materials; mixing fertilizers or pesticides; warehouse receiving/shipping; and sandblasting, stripping and painting. Any non-stormwater discharges should be recorded here (such as rinse water, wash water, boiler blowdown). A note should also be made about previous "significant" spills of toxic or hazardous materials including the type, quantity, cleanup methods used, amount of material remaining, and measures taken to be sure it does not recur.
- **Assessment of Potential Pollutant Sources**. For the activities and pollutant sources noted above, determine which areas are probable sources of pollutants and the corresponding pollutants that are likely to be present in stormwater discharges.

F.2.3 Best Management Practice Selection

BMPs must be selected that are appropriate to prevent or mitigate pollution generated from the specific activities at the site. They may be selected based on the information learned from the facility assessment. The Permit requires the BMPs to include, but not be limited to:

- Good housekeeping practices
- Material storage control
- Vehicle leaks and spill control
- Vehicle and equipment washing area control
- Proper waste handling and disposal
- Maintenance for treatment controls
- Illicit discharge control
- Employee training

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Attachment F2 includes lists of BMPs suggested for vehicle and equipment maintenance areas and material storage facilities that have been adapted from USEPA's *Storm Water Multi-Sector General Permit for Industrial Activities* (September 1995). Attachment F2 also includes several BMP fact sheets from the California Storm Water Best Management Practices Handbook. Although all of these suggested BMPs are for industrial facilities, they serve as good general guidance for all vehicle maintenance/material storage facilities.

F.2.4 Plan Documentation and Implementation

With the facility assessment and BMP selection complete, compile the information into a written document. This may be done in a format similar to the example pollution prevention plan in Attachment F1.

Once the pollution prevention plan is prepared, it must be implemented. This may be done by training employees in any new procedures, moving materials under cover, installing spill kits, and conducting any other activities necessary to implement all specified BMPs.

F.2.5 Evaluation

A copy of the pollution prevention plan should be kept at the site and should be reviewed periodically to see that the information is current and accurate. BMPs that have been implemented should be assessed to determine if they are working as planned, and any changes required should be noted in the pollution prevention plan.

ATTACHMENT F1

EXAMPLE POLLUTION PREVENTION PLAN FOR A FLEET MAINTENANCE FACILITY

F1.1 FACILITY

Maintenance Yard #3
1234 Facilities Way
XYZ, California 99999

Facility Owner: City of XYZ

Prepared By: C. Lin

Date Prepared: June 18, 1997

Updated: _____

F1.2 OBJECTIVES

The municipal stormwater permit for discharges in the County of Los Angeles requires those Permittees who own and operate facilities where vehicle maintenance and/or material storage activities occur, as defined in Section IV.3.a of the Permit, to implement a pollution prevention plan. The purpose of the regulations is to protect water quality by reducing the amount of pollutants that could potentially reach the storm drainage system and receiving waters.

The minimum objectives of the Vehicle Maintenance/Material Storage Facilities Management program are to:

- Identify and evaluate sources of pollutants from public vehicle maintenance/material storage facilities that may affect the quality of stormwater discharges from the facility.
- Identify and implement site-specific best management practices (BMPs) to reduce or prevent pollutants in stormwater discharges.

A copy of this plan should be kept at the facility. It should be reviewed periodically to assure all information and measures are current and accurate and should be updated as conditions change.

F1.3 PLANNING AND ORGANIZATION

F1.3.1 Pollution Prevention Team

Name	Function
C. Lin Public Works, Streets & Roads Division (999) 555-1212	Program Coordinator / Pollution Prevention Plan Development
A. Martinez Maintenance Staff (999) 555-1222	Pollution Prevention Plan Implementation
D. Jones Maintenance Staff (999) 555-1232	Pollution Prevention Plan Implementation

F1.4 SITE MAP

Figure 1 is a detailed site map of the Maintenance Yard #3 facility.

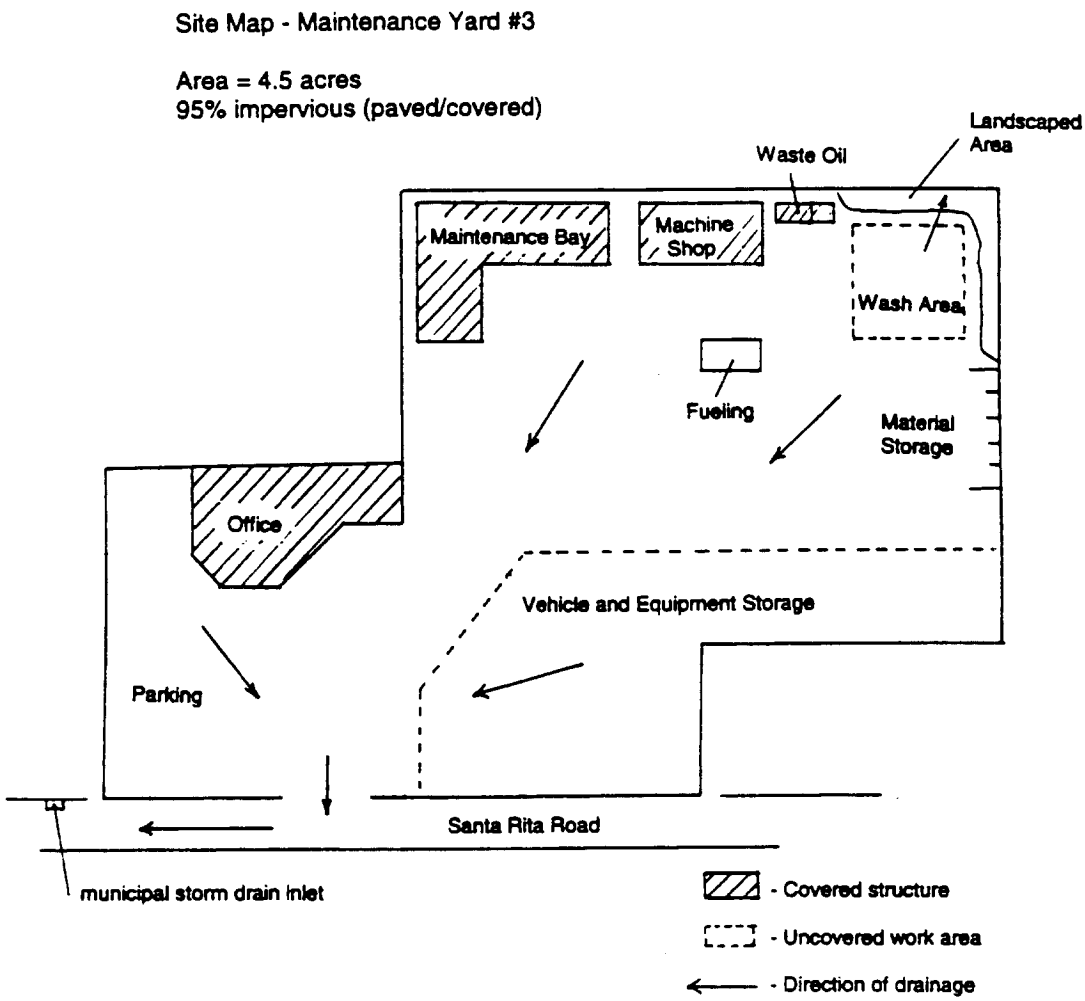

Figure 1
Site Map

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F1.5 LIST OF SIGNIFICANT MATERIALS

Table 1 describes materials that are handled and stored at the Maintenance Yard #3 facility:

Table 1: Significant Materials		
Material	***Handling and Storage Location***	***Typical Quantity/ Frequency***
Gasoline	Center of yard at fueling area	250 gal/day
Diesel fuel	Center of yard at fueling area	200 gal/day
Motor oil	North section of yard in Maintenance Bay	90 gal/wk
Used motor oil	North section of yard in Used Oil Storage Area	30 gal/wk
Lubricants	North section of yard in Maintenance Bay	15 gal/mo
Brake fluid	North section of yard in Maintenance Bay	40 gal/wk
Hydraulic fluid	North section of yard in Maintenance Bay	5 gal/day
Adhesives and sealants	North section of yard in Material Storage Area	10 gal/mo
Antifreeze	North section of yard in Maintenance Bay	30 gal/day
Used Antifreeze	North section of yard in the Used Antifreeze Storage Area	10 gal/day
Solvents	North section of yard in Chemical Storage Area	50 lb/wk
Detergents	North section of yard in Chemical Storage Area	40 lb/wk
Paint	North section of yard in Chemical Storage Area	20 gal/mo
Concrete	East section of yard in Raw Materials Area	1 ton/mo
Gravel	East section of yard in Raw Materials Area	200 lb/wk
Sand	East section of yard in Raw Materials Area	250 lb/wk
Aggregate	East section of yard in Raw Materials Area	100 lb/wk
Pesticides and herbicides	North section of yard in Chemical Storage Area	85 gal/mo
Fertilizers	North section of yard in Chemical Storage Area	100 lb/wk
Soil Amendments	North section of yard in Chemical Storage Area	50 lb/wk

F1.6 DESCRIPTION OF POTENTIAL POLLUTANT SOURCES

Table 2 describes potential pollutant sources at the Maintenance Yard #3 facility:

Table 2: Potential Pollutant Sources

Area / Activity	*Pollutant Source*	*Pollutant*
Vehicle and Equipment Fueling performed in the center of the yard at the fueling area; containing both unleaded and diesel fuel for smaller vehicles and large equipment. Both pumps in the fueling area are covered by a raised roof.	Spills caused by topping off fuel tanks	gasoline
	Spills and leaks during deliveries	fuel, oil
	Hosing or washing down fuel area.	fuel, oil
	Rainfall running onto and off of fueling area	fuel, oil
Vehicle and Equipment Maintenance performed at the Maintenance Bay Building in the northwest section of the yard. Activities include fluid changes, vehicle repairs, equipment repairs, and other necessary maintenance.	Vehicle fluid spills or leaks	transmission fluids, luring materials, radiator fluids, etc.
	Container spills or leaks	solvents, degreasers, other cleansers
Vehicle and Equipment Washing performed in the northeast section of the yard. Washing Area is uncovered and not bermed.	Washing particulates and debris off vehicles and equipment	sediment, metals, toxic materials, vehicle fluids
Material, Chemical, Vehicle and Equipment Storage located at the north and east sections of the yard. All areas are covered. See Table 1 for yard materials stored.	Container spills or leaks	antifreeze, oil, pesticides, herbicides, solvents, etc.
	Vehicle and equipment leaks	gasoline, oil

F1.7 ASSESSMENT OF POTENTIAL POLLUTANT SOURCES

Vehicle and Equipment Fueling is a potential source of stormwater pollution at the Maintenance Yard #3 facility. Stormwater run-on has the potential to wash away any spills or leaked fluids located at the fueling area and subsequently drain onto the street and into the storm drain. Pollutants located at the fueling area include oil and gasoline (unleaded and diesel). With the washing area currently northeast and upgrade of the fueling area, pollutants may be carried via wash water flows to the storm drain in a non-stormwater discharge.

Vehicle and Equipment Maintenance is a minimal potential source of stormwater pollution. Vehicle and equipment fluids are handled and changed in the Maintenance Bay and may

eventually flow into the storm drain only if staff cleans the bay area with the use of water hose. Maintenance pollutants include transmission and radiator fluids, solvents, degreasers, as well as gasoline.

Vehicle and Equipment Washing has a high pollutant potential as alluded to above. Without a bermed area or covered structure for this activity, non-stormwater discharges from washing may flow south-southwest, crossing the fueling area, concentrating pollutant flow even more. Pollutants from washing include sediment, metals, toxic materials, and vehicle fluids such as oil and gasoline.

Material, Chemical, Vehicle and Equipment Storage also has a potential for stormwater pollution. Particularly, vehicles and equipment, stored outside and uncovered, are susceptible to leaking. Rainfall at the facility has the potential to wash leaked fluids into the storm drain system. Material and chemical storage at the facility are covered and carefully protected, minimizing the potential for any stormwater pollution.

F1.8 STORMWATER BEST MANAGEMENT PRACTICES

Table 3 describes applicable best management practices for the Maintenance Yard #3 facility:

Table 3: Applicable Best Management Practices

Area / Activity	*Pollutant Source*	*Pollutant*	*Best Management Practice*
Vehicle and Equipment Fueling	Spills caused by topping off fuel tanks	gasoline	• Train employees in proper fueling and cleanup procedures • Discourage "topping off" of fuel tanks • Install "shut-off" valves on nozzles • Use adsorbent materials on spills as opposed to hosing down • Install covered spill kits next to fueling area
	Spills and leaks during deliveries	fuel, oil	
	Hosing or washing down fuel area.	fuel, oil	
	Rainfall running onto and off of fueling area	fuel, oil	
Vehicle and Equipment Maintenance	Vehicle fluid spills or leaks	transmission fluids, luring materials, radiator fluids, etc.	• Train employees in proper cleanup procedures of spills and leaks • Keep equipment clean, disallowing excessive grease/oil buildup • Use drip pans for any leaking vehicle/equipment • Complete all maintenance in proper location (covered) • Sweep up daily • Install spill kits in Maintenance Bay
	Container spills or leaks	solvents, degreasers, other cleansers	
Vehicle and Equipment Washing	Washing vehicle particulates and debris off	sediment, metals, toxic materials, vehicle fluids	• Wash vehicles and equipment at an off-site commercial washing location whenever possible • If on-site, direct wash water towards surrounding, existing vegetation • Evaluate the feasibility of constructing a bermed or covered wash area draining to the sanitary sewer
	Washing equipment particulates and debris off	sediment, metals, toxic materials, vehicle fluids	
Material, Chemical, Vehicle and Equipment Storage	Container spills or leaks	antifreeze, oil, pesticides, herbicides, solvents, etc.	• Store materials in enclosed or covered areas
	Vehicle and equipment leaks	gasoline, oil	• Use drip pans underneath leaking vehicles and equipment

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ATTACHMENT F2

SUGGESTED BMPs FOR VEHICLE MAINTENANCE/ MATERIAL STORAGE FACILITIES

The following best management practices (BMPs) were adapted from USEPA's *Storm Water Multi-Sector General Permit for Industrial Activities* (September 1995) and include additional guidance on using treatment controls. Although they were developed for industrial facilities, they serve as good general guidance for vehicle maintenance/material storage facilities.

F2.1 VEHICLE MAINTENANCE FACILITIES

F2.1.1 Fueling

- Use spill and overflow protection.
- Minimize run-on of stormwater into the fueling area by grading the area such that stormwater only runs off.
- Reduce exposure of the fuel area to stormwater by covering the area.
- Use dry cleanup methods for fuel area rather than hosing the fuel area down.
- Use proper petroleum spill control.
- Perform preventive maintenance on storage tanks to detect potential leaks before they occur.
- Inspect the fueling area to detect problems before they occur.
- Train employees on proper fueling techniques.

F2.1.2 Vehicle and Equipment Maintenance

- Maintain an organized inventory of materials used in the maintenance shop.
- Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers properly.
- Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries).
- Drain oil filters before disposal or recycling.
- Drain and contain all fluids from wrecked vehicles and "parts" cars.
- Store cracked batteries in a nonleaking secondary container.
- Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers.
- Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets.
- Plug floor drains that are connected to the storm or sanitary sewer. Alternatively, install a sump that is pumped regularly.

- Inspect the maintenance area regularly for proper implementation of control measures.
- Train employees on proper waste control and disposal procedures.

F2.1.3 Outdoor Vehicle and Equipment Storage and Parking

- Use drip pans under all vehicles and equipment waiting for maintenance.
- Cover the storage area with a roof.
- Inspect the storage yard for filling drip pans and other problems regularly.
- Train employees on procedures for storage and inspection items.

F2.1.4 Painting Areas

- Keep paint and paint thinner away from traffic areas to avoid spills.
- Spray paint in an Occupational Safety and Health Act (OSHA) approved hood.
- Use effective spray equipment that delivers more paint to the target and less over-spray.
- Avoid sanding in windy weather and collect and dispose of waste properly.
- Recycle paint, paint thinner, and solvents.
- Inspect painting procedures to ensure that they are conducted properly.
- Train employees on proper sanding, painting, and spraying techniques.

F2.1.5 Vehicle or Equipment Washing Areas

- Avoid washing parts or equipment outside.
- Use phosphate-free biodegradable detergents.
- Designate an area for cleaning activities.
- Contain and recycle washwaters.
- Ensure that washwaters drain well.
- Inspect cleaning area regularly.
- Train employees on proper washing procedures.

F2.1.6 Liquid Storage in Above Ground Storage

- Maintain good integrity of all storage containers.
- Install safeguards (such as diking or berming) against accidental releases at the storage area.
- Inspect storage tanks to detect potential leaks and perform preventive maintenance.
- Inspect piping systems (pipes, pumps, flanges, couplings, hoses, and valves) for failures or leaks.
- Train employees on proper filling and transfer procedures.

F2.1.7 Improper Connections to Storm Drain

- Plug all floor drains connected to storm drain or if connection is unknown. Alternatively, install a sump that is pumped regularly.
- Perform smoke or dye testing to determine if interconnections exist between sanitary sewer system and storm drain system.
- Update facility schematics to accurately reflect all plumbing connections.
- Install a safeguard against vehicle washwaters entering the storm drain unless permitted.
- Maintain and inspect the integrity of all underground storage tanks; replace when necessary.
- Train employees on proper disposal practices for all materials.

F2.1.8 Treatment Controls

- In areas where the concentration of oil and grease-related compounds are high, consider using treatment controls in addition to source controls. These areas may include marine ports, airfields, and fleet vehicle maintenance and washing facilities.
- Determine appropriate treatment controls based on the amount and type of potential pollutant. Controls may include oil/water separators, media filtration, biofilters, and retention basins.
- Implement appropriate maintenance schedules for all treatment controls to retain their pollutant removal effectiveness.

F2.2 MATERIAL STORAGE AREAS

F2.2.1 Outdoor Unloading and Loading

- Confine loading/unloading activities to a designated area.
- Consider performing loading/unloading activities indoors or in a covered area.
- Consider covering loading/unloading area with permanent cover (e.g., roofs) or temporary cover (e.g., tarps).
- Close storm drains during loading/unloading activities in surrounding areas.
- Avoid loading/unloading materials in the rain.
- Inspect the unloading/loading areas to detect problems before they occur.
- Inspect all containers prior to loading/unloading of any raw or spent materials.
- Consider berming, curbing, or diking loading/unloading areas.
- Install dead-end sumps where spilled materials could be directed.
- Place drip pans under hoses.
- Use dry clean-up methods instead of washing the areas down.
- Train employees on proper loading/unloading techniques and spill prevention and response.

F2.2.2 Outdoor Material Storage

- Confine storage of materials, parts, and equipment to designated areas.
- Consider secondary containment using curbing, berming, or diking all liquid storage areas.
- Train employees on proper waste control and disposal.
- Train employees in spill prevention and response.
- Consider covering tanks.
- Ensure that all containers are closed (e.g., valves shut, lids sealed, caps closed).
- Wash and rinse containers indoors before storing them outdoors.
- If outside or in covered areas, minimize run on of stormwater by grading the land to divert flow away from containers.
- Perform leak detection and container integrity testing.
- Direct runoff to onsite retention pond.
- Inventory all raw and spent materials.

- Clean around vents and stacks.
- Place tubs around vents and stacks to collect particulates.
- Inspect air emission control systems (e.g., baghouses) regularly, and repair or replace when necessary.
- Store wastes in covered, leak proof containers (e.g., dumpsters, drums).
- Consider shipping all wastes to offsite landfills or treatment facilities.
- Ensure hazardous waste disposal practices are performed in accordance with federal, state, and local requirements.

APPENDIX G

LANDSCAPE AND RECREATIONAL FACILITIES MANAGEMENT GUIDANCE

G.1 PESTICIDE, HERBICIDE AND FERTILIZER MANAGEMENT

G.1.1 Application and Handling

The federal Pesticide, Fungicide, and Rodenticide Act and California Title 3, Division 6, Pesticides and Pest Control Operations place strict controls over pesticide application and handling and specify training, annual refresher, and testing requirements. The regulations generally cover:

- A list of approved pesticides and selected uses, updated regularly
- General application information
- Equipment use and maintenance procedures
- Record keeping

The California Department of Pesticide Regulations and the County Agricultural Commission coordinate and maintain the licensing and certification programs. All public agency employees who apply pesticides and herbicides in "agricultural use" areas such as parks, golf courses, rights-of-way and recreation areas should be properly certified in accordance with state regulations. Contracts for landscape maintenance should include similar requirements.

Following is a brief summary of the regulations:

- Agricultural pest control businesses must be supervised by a Qualified Applicator Licensee and individuals who apply or supervise the application of restricted pesticides must have a current Qualified Applicator Certificate.
- Every two years, the Qualified Applicator Certificate holder must show proof that they have secured a minimum of 40 hours of continuing education as a prerequisite to reissuance of the license or certificate. Continuing education credits may be obtained by attending classes and seminars approved by the state as meeting the requirements for the license and certificate program.
- All Qualified Applicator Licensees and Qualified Applicator Certificate holders are required to report pesticide usage on a monthly basis to the Department of Agriculture. Each report must detail the specific locations where pesticides were used, the type and quantity of pesticides used, and other relevant information.
- The Qualified Applicator Certificate holder will conduct monthly inspections to monitor storage, handling and disposal of the pesticides.
- The Department of Agriculture will review the pesticide application programs of public agencies to verify that all applications are made in accordance with written recommendations, the appropriate personnel are properly certified, and the

recommendations are appropriate for the range of pests likely to have been encountered.

These and other environmental regulations also require all users of hazardous products to keep Material Safety Data Sheets (MSDS) for all products readily accessible. These are detailed application and handling sheets provided by the manufacturers and updated as necessary. All employees who handle pesticides should be familiar with the most recent MSDS files.

- Additional BMPs that should be considered include:
- Always use caution when handling any hazardous product.
- Read and follow use instructions.
- Use up all of the product before disposing or give the extra to other agencies or community groups.
- Do not dispose of product down storm drains, into creeks, onto the ground, or by burning.

G.1.2 Minimizing the Use

Consider specific alternative products in lieu of pesticides to control insects, fungi and weeds:

- Certain insects, such as lacewing and ladybugs, can be used against unwanted pests;
- A type of snail has been used successfully in Los Angeles County to control the common garden snail.
- Compost and soil amendments can be used as natural alternatives to fertilizers.

For more information on alternatives, contact agencies such as the Bio-Integral Resource Center (BIRC) in Berkeley, which conducts research and produces brochures and a newsletter on Integrated Pest Management. Modern gardening guides, such as the Sunset books, also include information on fertilizer and pesticide alternatives.

G.1.3 Storage and Inspection

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The same regulations that govern pesticide application and handling also cover storage and inspection. As discussed in G.1.1, these requirements apply to appropriate public agency staff and should be included in landscape maintenance contracts. Following is a brief summary of the applicable portions of the regulations:

- The Qualified Applicator Certificate holder will conduct monthly inspections to monitor storage, handling and disposal of the pesticides.

- At least quarterly, the County Agricultural Commissioner will consult with public agencies concerned with air and water quality, fish and wildlife, and others, to identify past or potential problems associated with the use of pesticides.
- The Commissioner may enter and inspect any fields, areas, structures and greenhouses where pesticides are handled, stored or applied to determine compliance.

Additional BMPs that should be considered include:

- Store products away from sources of heat, sparks, and flames.
- Store products in their original containers and keep them well labeled.
- Do not store chemicals in food containers.

G.2 MUNICIPAL SWIMMING POOL DECHLORINATION

There is no specific numeric limit on what constitutes a dechlorinated pool discharge to the storm drainage system. However, it should be safe to assume that pool water that meets the same chlorine requirements as wastewater discharges to a receiving water is adequately dechlorinated. Therefore, it is suggested that chlorine in pool water be reduced to 0.1 parts-per-million (ppm) before discharging the water to a storm drain system. This level can be easily achieved using chemicals available at pool-supply outlets or through private contractors, and can be measured with a standard pool test kit.

APPENDIX H

STORM DRAIN OPERATION AND MANAGEMENT GUIDANCE

H.1 BMPs FOR CATCH BASIN AND STORM DRAIN MAINTENANCE

There is no preferred method for cleaning catch basins as long as the method used is successful in removing accumulated sediment and debris. It should be satisfactory to use methods that have been in place for routine storm maintenance. This may include removal by shovel or by use of a vacuum truck. Similarly, storm drain (channel) maintenance may include use of a backhoe, vacuum truck, or shovel. Methods used should minimize the amount of material that escapes and is reintroduced to the storm drain system. This is discussed in more detail in Section H.3.

All catch basins must be inspected and cleaned at least once per year between May 1 and September 30. Priority Catch Basins (designated catch basins in areas generating significant refuse) must be cleaned before the sump is 40 percent full during the period October 1 and April 30. Additional cleaning may be done to minimize the amount of litter and debris that could wash to receiving waters. The following areas may be considered for additional cleaning:

- high vehicle or pedestrian traffic areas
- commercial areas
- industrial areas
- construction areas
- high density residential areas
- areas adjacent to vacant lots

The following BMPs may be considered:

- Consider cleaning all non-Priority Catch Basins at least twice a year
- Aggressively enforce anti-dumping ordinances and anti-littering ordinances

Additional BMPs to minimize contaminant discharge during cleaning activities is discussed in Section H.3.

H.2 RECORD KEEPING FOR CATCH BASINS

To implement this program, records must be kept of the catch basins cleaned and the overall quantity of waste removed. This can be done by logging the information on existing crew day cards or providing crews with an amended form. At a minimum the following information must be recorded when conducting inspections or cleaning of catch basins:

- dates inspected or cleaned
- locations of catch basins inspected or cleaned
- overall amount of material removed (estimated in either volume or dry weight).

Additional information may be collected, such as the type of material removed to help with other stormwater management programs.

An example of catch basin record keeping is shown in Table H-1. A sample form is included as Table H-2.

This information should be summarized regularly, either manually or by modifying an existing maintenance management system or other database. The information will allow staff to determine when all catch basins have been inspected and cleaned, and will help them recognize areas where the heaviest amount of debris collects.

Problems discovered while inspecting catch basins should be routed to the appropriate department for correction or repair. Unusual or potentially hazardous substances found in catch basins should be reported in accordance with the guidance provided in the model *Illicit Connection/Illicit Discharge Elimination Program*.

Permittees who do not have an accurate database of all catch basins may consider using the first-year inspection/cleaning process to inventory all facilities. This can be done using a form such as that shown in Table H-3. The results of the inventory should be compiled in a database or GIS system or in manual tables and maps. A complete record of facilities will allow staff to determine when all catch basins have been cleaned and schedule appropriate maintenance to keep the facilities performing properly. Detailed information such as this could also be kept annually and combined on one form with the catch basin cleaning results.

Table H-1 *Catch Basin Cleaning Recording Form*			
Date	***Location***	***Number of Catch Basins Cleaned***	***Total Amount Removed***
7/15/96	✓ Alameda St./15th	5	40 cu. ft.
	Alameda St./Washington	15	✱ 25 cu. ft.
	Alameda St./38th	5	

Notation

✓: Priority Catch Basin

✱: Total amount removed from Priority Catch Basins

Table H-2 *Catch Basin Cleaning Recording Form*			
Date	***Location***	***Number of Catch Basins Cleaned***	***Total Amount Removed***

Notation

✓: Priority Catch Basin

✱: Total amount removed from Priority Catch Basins

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Table H-3 *Drainage Inlet/Catch Basin Information*		
Location		
Street:	Cross Street:	Side (N,S,E,W):
Distance:	Direction (N,S,E,W):	Inlet Number:
Map Number:	Grid:	
Condition		
Length of Opening:	Height of Opening:	Stencil (Y/N):
Bicycle Bars (Y/N):	Grate Size:	Inlet Protection Bar (Y/N):
Repairs Required:		

H.3 MINIMIZATION OF CONTAMINANT DISCHARGE

Routine maintenance activities need to be conducted with care to avoid depositing waste material and other contaminants into the storm drain system. Suggested source control BMPs addressing general maintenance activities are provided below.

H.3.1 Housekeeping/Material Management

- Avoid maintenance activities during windy or rainy weather to minimize waste material transport to receiving waters.
- Place waste in watertight bags, containers, or bins. Keep containers and bins covered to prevent waste from being blown out by wind. Dispose of waste at a licensed sanitary landfill, recycling facility, or other approved location.
- If waste material must be stockpiled before disposal, place stockpiles away from drainage courses.
- Promptly pick up trash and debris from the job site and dispose in designated, leakproof containers.
- Replace leaking trash containers immediately.

H.3.2 Chemical Handling

Chemicals used in storm drain maintenance may include herbicides, disinfectants, and deodorizers. The following BMPs may be implemented as appropriate and feasible:

- Use mechanical means when possible to remove vegetation and odors in the system, thereby reducing or eliminating the amount of disinfectant, deodorizers, and herbicides.
- Chemicals should be safely and properly stored on maintenance vehicles to prevent spills and leaks.
- If chemical means are used to remove vegetation or odors, apply all products in strict accordance with label instructions.
- Avoid mixing products in the field or work in a bermed area to minimize product spills and leaks reaching receiving waters. Completely use up each container, rinse into another container and apply rinse water as product. Dispose of rinsed, empty containers in the trash.
- Any hazardous waste or waste suspected of being hazardous, encountered during maintenance activities must be handled and removed by qualified personnel, as discussed in local emergency response procedures manuals.
- Clean up spills and leaks immediately using appropriate tools such as shovels, brooms, dust pans, disposable gloves, and adsorbent for liquid spills. Sweep up spills of dry material and residue from cleaning operations rather than washing it into the storm drain system.

H.3.3 Surface and Subsurface Water Control

At times it may be necessary to divert the flow of a stream or dewater an excavation or trench to conduct maintenance activities. These waters may become contaminated with soil or pollutants and should not be discharged into the storm drain system. The following BMPs may be implemented as appropriate and feasible:

- Avoid dewatering or diverting water whenever possible if soils, sediment, and/or other pollutants might be detached and entrained.
- Do not divert dirty or contaminated water directly to a storm drain. Allow pollutants to settle out in a detention basin, temporary pit, or a bermed area before discharging the water.
- When water is contaminated with soil only, it may be discharged to the storm drain after settling so that only clear water is discharged. Clean up the settled soil and dispose of it away from drainage courses. Do not wash soil into the storm drain.

- If the water is contaminated with substances other than soil, remove the water using vacuum equipment, and dispose of the water properly.
- Contact your supervisor for directions before attempting any dewatering or diversion of water suspected to be contaminated with hazardous or unknown materials.
- Diverting water in a natural watercourse or drainage channel around a working area may require special permits. Contact your supervisor for specific directions before attempting diversion or dewatering in any channel or natural watercourse.

APPENDIX I

STREETS AND ROADS MAINTENANCE GUIDANCE

I.1 SWEEPING

I.1.1 Frequency of Street Sweeping

Curbed streets must be swept at a targeted frequency of once per month (12 times per year). In areas generating significant refuse, curbed streets may be swept more frequently, where feasible. Areas generating significant refuse may include the following:

- high vehicle (ADT above 20,000) or pedestrian traffic areas
- construction areas
- industrial areas

Where feasible, consider sweeping areas generating significant refuse at least bimonthly. If these areas continue to exhibit significant accumulations of refuse even when swept bimonthly, a more frequent sweeping schedule (e.g., weekly, daily) may be appropriate.

The timing of street sweeping may also need to be coordinated with streets and roads maintenance activities and the occurrence of special events such as fairs, parades, or green waste collection days. For example, where appropriate, street sweeping may be conducted immediately after such special events in addition to regularly scheduled sweeping.

I.1.2 SCAQMD Rule 1186

The SCAQMD adopted Rule 1186, PM10 Emissions From Paved and Unpaved Roads and Livestock Operations, in February 1997. The purpose of Rule 1186 is to reduce the amount of particulate matter (10 microns or less) entrained in the ambient air as a result of vehicular travel on paved and unpaved roads, and at livestock operations. A summary of the requirements of Rule 1186 for paved roads follows:

- Any owner or operator of a paved public road on which there are visible roadway accumulations shall begin removal of such material through street cleaning within 72 hours following any notification of the accumulations and shall completely remove such materials as soon as feasible. If removal cannot be completed within 10 days of notification, the owner/operator shall notify the Executive Officer of the SCAQMD and provide information on the location of the accumulation(s) and estimated removal completion date; and
- Any agency intending to purchase, lease, or otherwise contract for street sweeper equipment shall be required to procure PM10-efficient street sweeping equipment after January 1, 1999.

PM10 efficient street sweepers are street cleaning equipment designed to prevent the venting of particulate matter 10 microns or less that have been outfitted with a filter, bag house, cyclone, or other system. Some vacuum sweepers are considered PM10-efficient street cleaning equipment.

However, any owner or operator of a paved road shall be exempt from procuring PM10-efficient street sweeping equipment for exempt paved roads, which are defined as paved public roads that (1) have curbs or other paved shoulders in excess of four feet, and (2) are not within 1,000 feet of an unpaved road. This exemption requires annual submittal of documentation to the SCAQMD. Specific requirements regarding this or other exemptions are described in SCAQMD Rule 1186.

I.1.3 Guidance for Operating Street Sweepers

Permittees use two common types of street sweepers: vacuum sweepers and mechanical broom/brush sweepers. Vacuum sweepers are more effective at picking up finer particles (which heavy metals are often bound to) than mechanical sweepers but are noisier and more expensive to purchase. Mechanical sweepers are most effective at picking up large pieces of debris and in cleaning wet streets. However, if the streets are not wet, mechanical sweepers can create more airborne dust than vacuum sweepers.

For optimal sweeping efficiency when operating vacuum and mechanical sweepers, it is suggested that the following BMPs be implemented:

- Operate sweepers at speeds recommended by the manufacturer (typically 6 to 8 miles per hour or less);
- Replace worn parts as required and install brooms of the appropriate weight;
- Check sweepers weekly to maintain proper brush adjustment, rotation rate, and sweeping pattern;
- Periodically review maintenance and operation procedures to determine if procedures are being properly implemented;
- Keep maintenance records to note operational problems and ensure timely adjustments and repairs;
- Properly dispose of materials generated by street sweeping operations; sweepers or brushes are not to be washed in the street for discharge into the storm drain;
- Post sufficient signage to notify vehicle owners of parking restrictions on scheduled street sweeping days; and
- Patrol designated routes to ticket illegally parked cars.

I.2 MATERIAL MANAGEMENT BMPs

I.2.1 Saw-Cut Slurry

Other suggested BMPs for the management of saw-cut materials and wastes, which are effective at reducing stormwater pollution, include the following:

- Use dry cutting techniques when possible and sweep or vacuum up residue;
- Construct sediment barriers with low weirs of sandbags to protect storm drains from wet saw-cut runoff;
- Place drip pans or absorbent materials under saw-cut equipment when not in use.

I.2.2 Paving

Other suggested BMPs for the management of paving activities, which are effective at reducing stormwater pollution, include the following:

- Prevent paving materials and wastes from entering the storm drain system.
- Minimize the area of soils left exposed or graded.
- Collect any loose sand, gravel, asphalt, or other material as soon as possible after construction activities.
- When placing chip seals, limit spreading aggregate to the sealed surface and sweep up excess aggregate once cured and each day thereafter until aggregate loss is insignificant.

I.2.3 Concrete

Other suggested BMPs for the management of concrete materials and wastes, which are effective at reducing stormwater pollution, include the following:

- If an onsite area is to be used, construct a temporary pit or bermed area large enough for liquid and solid waste generated from washout;
- Wash wastes only into the temporary pit or bermed area;
- Collect washwater from concrete cleanup for offsite disposal;
- Properly dispose of waste materials;
- Have a planned use for excess concrete or dispose of waste as trash; and
- Schedule concrete pours as large as possible to minimize having to cleanup several "short loads."

I.3 GOOD HOUSEKEEPING BMPs

Other suggested good housekeeping BMPs, which are effective at reducing stormwater pollution include the following:

- Use the minimal amount of water possible when cleaning;
- Carry materials such as shovels, brooms, dust pans, disposable gloves, adsorbent, berming, and catch basin covers on maintenance vehicles;
- Replace leaking trash containers immediately;
- Place lids on all trash containers;
- Avoid dispatching leaking vehicles or equipment from the municipal yard;
- Avoid fueling, maintaining, or washing vehicles or equipment at the job site; if these activities must occur on site, they should be performed only in designated areas by trained personnel;
- Store vehicles and equipment at job sites on impermeable surfaces and place drip pans under stored equipment;
- Recycle and reuse thinners, solvents, and paints.

I.4 EMPLOYEE TRAINING

The following guidance may be used to develop and implement a streets and roads maintenance employee training program:

- Identify all appropriate departments and employees who should receive training. Applicable departments and employees are those involved in planning, contracting for, performing, or overseeing streets and roads maintenance activities, including some traffic control activities.

- Develop a training program that describes general stormwater program requirements and that establishes the relationship between streets and roads maintenance activities and the potential for stormwater pollution or non-stormwater discharges to the storm drain system and the associated impacts on receiving waters.

- Provide guidance on the selection of appropriate BMPs by referring to information in Sections 6.2.1 through 6.2.4 of this model program, and include examples or case studies to illustrate proper BMP selection and implementation for streets and roads maintenance activities.

- Provide employees with handouts, checklists, manuals, or other documentation that can be used later as reference information. These may include:

- California Storm Water Best Management Practices Handbook, Municipal Activities
- Storm Water Pollution Control for Road Maintenance, Caltrans District 7
- Storm Water Management Training Course for Caltrans Maintenance Personnel, Inspection Support and Field Services
- Los Angeles County's Public Employee Trainer Manual, Volume I (Municipal Activities)

APPENDIX J

PARKING FACILITIES MANAGEMENT GUIDANCE

J.1 CONSIDERATIONS FOR PARKING FACILITIES GENERATING SIGNIFICANT DEBRIS

Sweeping or other equally effective measures to remove debris must be conducted on a regular basis. This can be done in conjunction with regular curbed street sweeping/cleaning. Parking facilities that generate significant debris may be swept or otherwise cleaned more frequently, where feasible. Parking lots that may generate significant debris include the following:

- High vehicle or pedestrian traffic areas;
- Lots adjacent to construction areas;
- Lots in commercial districts or industrial areas;
- Lots adjacent to recreational facilities or municipal facilities (e.g., beaches, parks, fairgrounds, concert halls, and libraries); and
- Special events parking locations.

The timing of cleaning may also be scheduled to follow special events such as fairs, concerts, or municipal festivals.

J.2 OTHER BMPs for IMPLEMENTATION at PARKING FACILITIES

Other BMPs for the management of parking facilities that are effective at reducing stormwater pollution and may reduce the effort needed for debris removal, include the following:

- Signage/stenciling;
- Litter control; and
- Parking facility storm drain inlet/catch basin cleaning.

J.2.1 Signage/Stenciling

Signage and stenciling is the posting or painting of signs in key locations around a parking facility that inform users of pollution prevention techniques. Posted signs and stencils can be an effective pollution deterrent in any new or existing parking facility. Posted signs should prohibit any activity that leads to the dumping of unwanted materials. For example, signs prohibiting littering, as well as conveniently located trash cans, can help to reduce this problem. Storm drain stenciling tells users where the water that flows into the drain actually ends up. Stencils should use everyday language and be translated into the foreign languages of the community.

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J.2.2 Litter Control

Trash receptacles are used to reduce uncontrolled litter in parking facilities. Providing trash receptacles at parking facilities encourages users to dispose of litter properly and will help keep trash and debris out of the storm drain system. Signs prohibiting littering should be posted in conjunction with appropriately located trash receptacles.

J.2.3 Parking Facility Storm Drain Inlet/Catch Basin Cleaning

More detailed information on each of these BMPs is included in the *California Storm Water Best Management Practice Handbooks* (May 1993) and in the *Parking Lot BMP Manual* (Woodward-Clyde, 1996; for Santa Clara Valley Nonpoint Source Pollution Control Program).

APPENDIX K

PUBLIC INDUSTRIAL ACTIVITIES GUIDANCE

K.1 INTRODUCTION

Permittees who elect to follow these guidelines rather than continue to seek coverage under the General Industrial Permit will save the $250 annual General Industrial Permit fee for each public industrial facility. Facilities already covered by a stormwater NPDES permit or a WDR permit will not realize these savings because the General Industrial Permit waives the $250 annual fee in these cases. In addition, Permittees will interact with the Regional Board and not the SWRCB.

The General Industrial Permit was revised and re-issued in April 1997. The revisions have made the General Industrial Permit more understandable and workable for Permittees. Accordingly, the guidelines presented here reflect those of the revised General Industrial Permit.

K.2 EXECUTIVE OFFICER NOTIFICATION

Send a letter to notify the Executive Officer of the Regional Board of your intent to cover industrial facilities owned or operated by the Permittee under the Los Angeles County municipal stormwater permit (Permit), Order No. 96-054, NPDES No. CAS614001. Send it to:

Regional Water Quality Control Board, Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156
(213) 266-7500

The letter must include a certification to be signed by the public official responsible for overseeing public industrial activities for the Permittee. It should include information similar to that required in a Notice of Intent (NOI) for coverage under the General Industrial Permit. The Regional Board will send a notice of coverage within 30 days of receipt of this certification letter.

If coverage is sought under this Permit but deviations are sought from the program laid out in this model, submit a description of the desired program for consideration by the Executive Officer. The program description may use the model program as a template, with changes noted by strikeout of text and insertion of new text, or may be a completely new document. In either case, explain how deviations from the model program address unique aspects of the public industrial activities and satisfy the requirements of this Permit. The Regional Board will either

send a notice of coverage within 60 days of receipt of the alternative program, or provide a written description of why the alternative program is inadequate.

K.3 SITE-SPECIFIC SWPPPs

Prepare and implement a stormwater pollution prevention plan (SWPPP) for each industrial facility that will be covered by this Permit. The requirements are the same as those listed in the revised General Industrial Permit, and are summarized here. At a minimum, the SWPPP must cover the following areas:

- **Planning and Organization**
  - Identify the pollution prevention team members who will develop and implement the SWPPP
  - If applicable, incorporate or reference the appropriate elements of other regulatory requirements
- **Site Map**

  Features displayed on the map must include:
  - An outline of the entire property
  - Drainage areas on the property and direction of flow
  - Areas of soil erosion
  - Nearby water bodies and municipal storm drain inlets
  - Location of stormwater conveyance systems (ditches, inlets, storm drains, etc.)
  - Location of existing stormwater controls (oil/water separators, sumps, etc.)
  - Location of "impervious" areas--paved areas, buildings, covered areas
  - Locations where materials are directly exposed to stormwater
  - Locations where toxic or hazardous materials have spilled in the past
  - Location of buildings and activity areas (e.g., fueling islands, garages, waste container area, wash racks, hazardous material storage areas, etc.)
- **List of Significant Materials**

  List materials stored and handled at the site. Include the location and typical quantities handled.

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- **Description of Potential Pollutant Sources**
  - Provide a narrative description of the facility's industrial activities and list the potential pollutant sources and the potential pollutants that could be discharged in stormwater discharges from each activity.
  - List materials that have spilled or leaked in significant quantities since April 17, 1994.
  - List non-stormwater discharges including the source, quantity, frequency, and characteristics of the discharge and drainage area.
- **Assessment of Potential Pollutant Sources**

  Describe which activities are likely to be sources of pollution in stormwater and which pollutants are likely to be present in stormwater discharges.
- **Best Management Practices**

  Describe the BMPs that will be implemented at the facility for each potential pollutant and its source.

The SWPPP must be kept on site and made available upon request of a representative of the Regional Water Quality Control Board and/or the local stormwater management agency that receives the stormwater discharges.

K.4 CHECKLIST of BMPs

During SWPPP development, Permittees must assemble a list of BMPs applicable to the potential pollutants and their sources at each site. The matrix provided in Table K-1 can be used in conjunction with the *California Storm Water Best Management Practice Handbooks* (May 1993) to determine the range of applicable best management practices that could be considered for industrial activities at each public industrial facility. Additionally, BMPs listed in Attachment F2 of Appendix F are those suggested in USEPA's Multi-Sector Permit (September 1995) and can be used as a guide to selecting appropriate BMPs for public industrial facilities.

K.5 IMPLEMENTATION VERIFICATION

Conduct an annual comprehensive site compliance evaluation. The requirements are the same as those listed in the revised General Industrial Permit, and are summarized here.

- Review visual observation/inspection records and sampling and analysis results.
- Conduct a visual inspection of all potential pollutant sources.
- Evaluate BMP implementation and effectiveness. This includes a visual inspection of equipment and supplies needed to implement the SWPPP.
- Create a report of the results of the site compliance evaluation.

K.6 ANNUAL REPORT

Prepare and submit an Annual Report by July 1 of each year. The requirements are the same as those listed in the revised General Industrial Permit, and are summarized here. The Annual Report must include:

- A summary of visual observations and sampling results.
- An evaluation of the visual observation and sampling results.
- Laboratory reports.
- The annual comprehensive site compliance evaluation report.
- An explanation why a facility did not implement activities required under this Permit.

The Annual Report should be signed and certified by a duly authorized person using the certification statement as defined in the General Industrial Permit.

Table K-1. BMP/Activity Matrix for Phase 1 Industrial Facilities

Stormwater Best Management Practices (BMPs)	BMP Code	Categories of Activities												
		Vehicle/Equipment Operations							Industrial Processing					
		Vehicle and Equipment Washing	Fueling	Oil/Oil Filter and other Fluids Changing	Radiator Flushing	Engine Steam Cleaning	Parts Cleaning	Deicing	Heavy Equipment Storage	Mechanized (bailing, shearing, drilling)	Manual (stripping, bundling)	Excavation (mining, filling)	Composting	Chemical Treatment
Municipal Source Control BMPs														
Housekeeping Practices	SC10	X	X	X	X	X	X	X	X	X	X	X	X	X
Safer Alternative Products	SC11	X					X							X
Industrial/Commercial Source Control BMPs														
Non-Storm Water Discharges to Drains	SC1	X			X	X	X	X						X
Vehicle and Equipment Fueling	SC2		X							X				
Vehicle and Equipment Washing and Steam Cleaning	SC3	X				X		X		X				
Vehicle and Equipment Maintenance and Repair	SC4			X	X	X	X			X				
Outdoor Loading/Unloading of Materials	SC5													
Outdoor Container Storage of Liquids	SC6													X
Outdoor Process Equipment Operations and Maintenance	SC7	X	X	X						X				
Outdoor Storage of Raw Materials, Products, and By-Products	SC8													
Waste Handling and Disposal	SC9			X	X		X			X				X
Contaminated or Erodible Surface Areas	SC10											X	X	
Building and Grounds Maintenance	SC11													
Building Repair, Remodeling, and Construction	SC12													
Employee Training	SC14	X	X	X	X	X	X	X	X	X	X	X	X	X
Industrial/Commercial Treatment Control BMPs														
Infiltration	TC1												X	
Media Filtration	TC6	X										X	X	
Oil/Water Separators and Water Quality Inlets	TC7	X	X	X	X	X	X			X				

R0001218

Table K-1. BMP/Activity Matrix for Phase 1 Industrial Facilities (continued)

Stormwater Best Management Practices (BMPs)	BMP Code	Categories of Activities													
		Vehicle/Equipment Operations									Industrial Processing				
		Floor Cleaning	Building Exterior Cleaning	Grounds Maintenance	Painting	Carpentry	Concrete, Mortar Application	Metal/Grinding Finishing	Roof and Foundation Drain Cleaning	Storm Drainage System Cleaning	Used Oil Storage/Recycling	Hazardous Material Storage/Disposal	Used Tire Storage/Recycling	Materials Loading/Unloading	Other Maintenance Materials Storage
Municipal Source Control BMPs															
Housekeeping Practices	SC10	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Safer Alternative Products	SC11	X	X		X										
Industrial/Commercial Source Control BMPs															
Non-Storm Water Discharges to Drains	SC1	X	X	X	X		X		X	X					
Vehicle and Equipment Fueling	SC2														
Vehicle and Equipment Washing and Steam Cleaning	SC3														
Vehicle and Equipment Maintenance and Repair	SC4										X				
Outdoor Loading/Unloading of Materials	SC5													X	
Outdoor Container Storage of Liquids	SC6											X			X
Outdoor Process Equipment Operations and Maintenance	SC7														
Outdoor Storage of Raw Materials, Products, and By-Products	SC8										X	X	X		X
Waste Handling and Disposal	SC9		X	X	X	X	X	X	X	X	X	X	X		
Contaminated or Erodible Surface Areas	SC10			X											
Building and Grounds Maintenance	SC11	X	X	X					X	X					
Building Repair, Remodeling, and Construction	SC12				X	X	X	X							
Employee Training	SC14	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Industrial/Commercial Treatment Control BMPs															
Infiltration	TC1														
Media Filtration	TC6			X											
Oil/Water Separators and Water Quality Inlets	TC7							X							

APPENDIX L

EMERGENCY PROCEDURES GUIDANCE

L.1 BMPs FOR EMERGENCY REPAIRS AND RESPONSE TO NATURAL DISASTERS

Listed below are BMPs which, where applicable, may be implemented during emergency repair activities and response to natural disasters to the extent that such measures do not compromise public health and safety. Descriptions of the BMPs can be found in the *California Storm Water Best Management Practice Handbooks*, and the number appearing in parentheses corresponds to the BMP number used in the handbooks.

Municipal Handbook

- Housekeeping Practices (SC10)
- Material Storage Control (SC20)
- Street Cleaning (SC70)
- Catch Basin Cleaning (SC71)
- Storm Drain Flushing (SC73)
- Roadway/Bridge Maintenance (SC74)
- Storm Channel/Creek Maintenance (SC76)

Construction Handbook

- Paving Operations (CA02)
- Structure Construction and Painting (CA03)
- Material Delivery and Storage (CA10)
- Material Use (CA11)
- Spill Prevention and Control (CA12)
- Solid Waste Management (CA20)
- Hazardous Waste Management (CA21)
- Contaminated Soil Management (CA22)
- Concrete Waste Management (CA23)
- Sanitary/Septic Waste Management (CA24)
- Vehicle and Equipment Cleaning (CA30)
- Vehicle and Equipment Fueling (CA31)

L.2 POST-FIRE BMPs

For protection of public safety, storm drain systems, and receiving waters, the following early action BMPs may be implemented in areas that have been or may be impacted by areas damaged by fire. Early action BMPs are particularly important if the rainy season is imminent.

- Clean out storm drains and sweep streets.
- Remove debris from drainages
- Protect storm drain inlets.
- Construct temporary velocity reduction measures, check dams, and sediment traps.
- Construct sand bag diversions.

Additional BMPs to address temporary and long term sediment and erosion control include the installation or application of the following measures:

- Sediment traps and basins (e.g., detention and retention basins, check dams, weirs, debris basins, and catch basins);
- Barriers to retain sediment and debris;
- Gravel filters for storm drain inlet protection;
- Contoured benches, terraces, furrows, and soil roughening;
- Revegetation and biotechnical soil stabilization;
- Mulching/hydraulic seeding;
- Soil binders, bonded fiber matrices, and geocomposites;
- Erosion control blankets and grids; and
- Gabions, rockfall netting, rip rap, and retaining walls.

L.3 EMERGENCY COORDINATION WITH GOVERNMENTAL AGENCIES

Several governmental agencies may be contacted to coordinate emergency repairs to essential public services and infrastructure and to respond to natural disasters. Contact telephone numbers for these agencies are provided in the following table.

Agency	*Contact Telephone Number*
Army Corps of Engineers	(310) 452-3961
California Office of Emergency Services	(800) 852-7550
California Department of Fish and Game (Long Beach)	(310) 590-5132
California Department of Toxic Substances Control (Toxic Help Line)	(800) 698-6942
California Department of Transportation, District 7	(310) 897-3656
Los Angeles County Department of Environmental Health	(310) 881-4000
Los Angeles Regional Water Quality Control Board	(213) 266-7500

R0001223

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

TELECOPY COVER SHEET

DATE: 2/5/01

TO:

Name: Dan Radulescue

Agency: RWQCB

Telephone Number: (213) 576-6666

Telecopier Number: (213) 576-6660

FROM:

Name: Carolina Treviño

Division: **WATERSHED MANAGEMENT DIVISION** Section: NPDES

Telephone Number: (626) 458-3978

Telecopier Number: (626) 457-1526 or (626) 458-3534

NUMBER OF PAGES (including cover sheet) 10

REMARKS: Per your request, I have attached the Submittal letters for the ROWDs, (Both the County-wide and the Santa Clara River Watershed)

Please contact me if you have any questions.

Carolina

P:\...\ADMIN\CLERICAL\FORMS\FAXSHT

R0001224

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100

HARRY W. STONE, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE
REFER TO FILE WM-9

January 31, 2001

Mr. Dennis A. Dickerson, Executive Officer
California Regional Water Quality
Control Board - Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, CA 90013-1105

Dear Mr. Dickerson:

REPORT OF WASTE DISCHARGE FOR MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES IN THE COUNTY OF LOS ANGELES (ORDER NO. 96-054, NPDES NO. CAS614001)

Enclosed is the Report of Waste Discharge for the Los Angeles River, San Gabriel River, Dominguez Channel, Ballona Creek, and Malibu Creek Watersheds in Los Angeles County.

The Report consists of the following components:

- Permit Application
- Performance Standards
- Watershed Management Area Plans

We look forward to working with your staff to expedite the approval process of the Report. I have directed my staff to work with the Regional Water Quality Control Board in making any necessary modifications.

If you have any additional questions, please contact Mr. Mustafa Ariki at (626) 458-5948, Monday through Thursday, 7:30 a.m. to 6 p.m.

Very truly yours,

HARRY W. STONE
Director of Public Works

BRIAN T. SASAKI
Deputy Director

GH:kk
A:\ROWD-TRANSMITTAL-LETTER.WPD

Enc.

cc: All Permittees

January 31, 2001

REPORT OF WASTE DISCHARGE FOR MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES IN THE COUNTY OF LOS ANGELES (ORDER NO. 96-054, NPDES NO. CAS614001)

AN IDENTICAL ORIGINAL OF THE ATTACHED LETTER WAS SENT TO EACH OF THE FOLLOWING:

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ARTESIA CA 90701-5899

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AZUSA CA 91702-2514

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ALDWIN PARK CA 91706-4297

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P:\...\EPPUB\WATER\ADMIN\CLERICAL\
LABELS_ALL_PERMITTEES.WPD

Los Angeles County
Municipal NPDES Permit
Executive Advisory Committee
Wednesday, February 14, 2001 - 1:30 P.M.
Los Angeles County Department of Public Works
900 South Fremont Avenue, Alhambra
12th Floor Conference Room

1. Call to Order
2. Approval of January 10, 2001, Minutes
3. Presentation on the Proposed Los Angeles Basin Permit
   (Comparison Between the Ventura and Los Angeles County Permits)
4. Regional Board Update
5. Total Maximum Daily Load (TMDL)
   - Monitoring Plan
   - Task Force Report
6. Public Comments
7. Closed Session Discussion
8. Next Meeting - March 14, 2001
9. Adjournment

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2001 NPDES PERMIT

L.A.C.F.C.D., LOS ANGELES COUNTY AND INCORPORATED CITIES

COMPARISONS WITH THE 2000 NPDES VENTURA COUNTY FLOOD CONTROL DISTRICT PERMIT

R0001232

DPW

ITEM OF COMPARISON

EXECUTIVE ADVISORY COMMITTEE (EAC)

VENTURA PERMIT

No EAC

L.A. BASIN PERMIT

The Committee shall facilitate program compliance in each watershed and enhance consistency among Permittees by providing each Watershed Management Area with representation.

REASONING

The EAC voting process was developed to give all cities representation through their respective Watershed Management Area.

R0001233

DPW

ITEM OF COMPARISON

STREET SWEEPING

VENTURA PERMIT

Ventura County's permit has a tiered-street sweeping program with the highest frequency of street sweeping of at least four times per month.

L.A. BASIN PERMIT

Our permit does not have a tiered-street sweeping program. Instead, we require curbed streets to be swept approximately once per month.

REASONING

Studies conducted by EPA concluded that increased frequency of street sweeping produced only a marginal water quality benefit.

R0001234

DPW

ITEM OF COMPARISON

CATCH BASIN CLEANING

VENTURA PERMIT	*A catch basin must be cleaned anytime that it is 40% full.*
L.A. BASIN PERMIT	*Only priority catch basins must be cleaned once they are 50% full. All other catch basins need to be cleaned once per year.*
REASONING	*It is neither necessary nor cost-effective to require the cleaning of all catch basins. Particularly, since the County has identified the priority catch basins (basins that accumulate debris at a faster rate). Additionally, the County maintains approximately 73,000 catch basins and the City of Los Angeles maintains approximately 35,000 catch basins. It would be impractical to monitor all of the catch basins for cleaning requirements. Moreover, the Los Angeles River Trash Total Maximum Daily Load (TMDL) regulations will further the reduction of trash that otherwise would have accumulated in catch basins.*

DPW

ITEM OF COMPARISON

PUBLIC INFORMATION AND PARTICIPATION

VENTURA PERMIT

They provide a minimum of 2.1 million impressions per year (see NPDES permit).

L.A. BASIN PERMIT

We plan to have over 50 million impressions per year (see Performance Standards).

REASONING

We have a greater population in Los Angeles County.

DPW

ITEM OF COMPARISON

INDUSTRIAL/COMMERCIAL INSPECTION PROGRAM

VENTURA PERMIT

This is an inspection program that requires enforcement.

L.A. BASIN PERMIT

This is an educational site visit program that does <u>not</u> require enforcement.

REASONING

Assuming the role of a regulatory agency would contradict the current Permittees role as stewards of the environment. Additionally, we believe that enforcement is the responsibility of the State.

R0001237

DPW

ITEM OF COMPARISON

DEVELOPMENT PLANNING PROGRAM

VENTURA PERMIT	***The Stormwater Quality Urban Impact Mitigation Plan (SQUIMP) applies to all new projects.***
L.A. BASIN PERMIT	***The Standard Urban Stormwater Mitigation Plan (SUSMP) applies to discretionary projects only.***
REASONING	***The State Board revised SUSMP regulations are only applicable to new discretionary projects.***

R0001238

DPW

ITEM OF COMPARISON

DEVELOPMENT CONSTRUCTION PROGRAM

VENTURA PERMIT	*Storm Water Pollution Control Plans (SWPCPs) are required for construction projects that will result in soil disturbance of 1 acre or more.*
L.A. BASIN PERMIT	*Stormwater Pollution Prevention Plans (SWPPPs) are required for priority construction projects that will result in a disturbance of 2 acres or more.*
REASONING	*It is not cost effective to implement local SWPPPs for construction projects of less than 2 acres. Instead, construction projects of less than 2 acres are required to have minimum Best Management Practices (BMPs). We believe such BMPs are sufficient for controlling pollutants in stormwater runoff from these construction sites.*

DPW

ITEM OF COMPARISON

ILLICIT CONNECTION/ILLEGAL DISCHARGE
EXEMPTIONS

VENTURA PERMIT

The first five exempt discharges are the same as L.A Basin's permit.

L.A. BASIN PERMIT

This permit has one more exemption than Ventura's permit, discharges from fire-fighting activities.

REASONING

The primary objective of emergency fire-fighting activities is to protect public safety and thus should be exempt from stormwater runoff discharge requirements.

DPW

R0001240

ITEM OF COMPARISON

ILLICIT CONNECTION/ILLEGAL DISCHARGE (cont'd)

EXEMPTIONS SUBJECT TO CONDITIONS

VENTURA PERMIT

Ventura County permit lists eleven conditional exemptions. One of these conditional exemptions is an exemption in the L.A. Basin permit.

L.A. BASIN PERMIT

In addition to the Ventura County conditional exemptions L.A. Basin's permit lists the following ones:

1. *Landscape irrigation,*
2. *Grading drains*
3. *Emergency floor drains,*
4. *Non-profit car washing,*
5. *Street washing,*
6. *Wash water runoff from the cleaning of fire fighting vehicles,*
7. *Lake dewatering,*
8. *Wash water runoff of blood and other human tissues from the cleaning of accident sites or accidental spills.*

R0001241

DPW

ITEM OF COMPARISON

ILLICIT CONNECTION/ILLEGAL DISCHARGE (cont'd)
EXEMPTIONS SUBJECT TO CONDITIONS

REASONING

Four of these exemptions were granted to the City of Los Angeles. The remaining exemptions are either pending exemptions proposed under this permit or were granted in the 1996 L.A. Basin permit.

DPW

ITEM OF COMPARISON

MUNICIPAL AGENCY ACTIVITIES-FUELING AREAS & MAINTENANCE AREAS

VENTURA PERMIT	***Prohibition of untreated stormwater runoff from fueling areas and repair/maintenance areas for vehicle maintenance and repair facilities does not differentiate between new and existing facilities.***
L.A. BASIN PERMIT	***Prohibition of untreated stormwater runoff from fueling areas and repair/maintenance areas for vehicle maintenance and repair facilities only applies to new facilities.***
REASONING	***Instituting Best Management Practices for existing facilities might be cost-effective and could serve the same purpose.***

R0001243

DPW

ITEM OF COMPARISON

MUNICIPAL AGENCY ACTIVITIES
SAW-CUTTING

VENTURA PERMIT	*Prohibition of street saw-cutting and paving during a storm event of 0.25 inches or greater.*
L.A. BASIN PERMIT	*Avoidance of street saw-cutting and paving during storm events that will carry the debris.*
REASONING	*This standard will be easier for field staff to gage and implement. Furthermore, a rain depth of less than 0.25 inches could result in runoff.*

R0001244

DPW

ITEM OF COMPARISON

RECEIVING WATER LIMITATIONS

VENTURA PERMIT

Impairment of a receiving water body by MS4 discharges <u>need not</u> be substantiated with scientific research.

L.A. BASIN PERMIT

Impairment of a receiving water body by MS4 discharges <u>need to</u> be substantiated with scientific research.

REASONING

Scientific studies are necessary to provide bases for water quality objectives of receiving water bodies.

R0001245

DPW

ITEM OF COMPARISON

TRAINING

VENTURA PERMIT	*Generally requires Co-permittee's staff to be trained within six months of permit adoption.*
L.A. BASIN PERMIT	*Generally requires Permittee's staff to be trained within one year of permit adoption.*
REASONING	*Due to the large number of staff of some of the Permittees' agencies, it would be more manageable and less disturbing to the Permittees' daily activities if one year was allowed for training of their staff.*

DPW

ITEM OF COMPARISON

PESTICIDES/HERBICIDES

VENTURA PERMIT	***Application of pesticides/herbicides <u>cannot</u> be done during rain events.***
L.A. BASIN PERMIT	***Application of pesticides/herbicides <u>may not</u> be applied if storm event results in runoff.***
REASONING	***Herbicidal application is more effective during wet or damp conditions.***

R0001247

DPW

ITEM OF COMPARISON

TMDLs

VENTURA PERMIT

"The Permittee shall modify the Ventura County [Stormwater Quality Management Plan] SMP to comply with waste load allocations developed and approved pursuant to the process for the designation and implementation of Total Daily Maximum Loads (TMDLs) for impaired water bodies."

L.A. BASIN PERMIT

This permit does not contain language that requires the revision of the Stormwater Quality Management Plans (SQMPs) when a new TMDL regulation is adopted.

REASONING

We believe that TMDL regulation does not need to be included in the NPDES permit and could be addressed separately .

R0001248

DPW

2001 NPDES PERMIT

END OF PRESENTATION

R0001249

DPW

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

TELECOPY COVER SHEET

DATE: 2/21/01

TO:

Name: DAN RADULESCU

Agency: L.A. REGIONAL WATER QUALITY CONTROL BOARD

Telephone Number: (213) 576-6668

Telecopier Number: (213) 576-6660

FROM:

Name: CAROLINA TREVIZO

Division: **WATERSHED MANAGEMENT DIVISION**

Telephone Number: (626) 458-3978

Telecopier Number: (626) 457-1526 or (626) 458-3534

NUMBER OF PAGES (including cover sheet) 3

REMARKS: As requested, attached are the Sign-In sheets for the February 14, 2001, EAC meeting.

P:\...\ADMIN\CLERICAL\FORMS\FAXSHT

Los Angeles County NPDES Stormwater Permit
Executive Advisory Committee
February 14, 2001

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EPA United States Environmental Protection Agency
Office of Water

OFFICE OF WASTEWATER MANAGEMENT

Storm Water Permit Requirements For Medium And Large MS4s

The Storm Water Phase I Final Rule (55 *FR* 47990; November 16, 1990), established permit application requirements for medium and large MS4s to obtain an National Pollutant Discharge Elimination System (NPDES) individual permit. The permit applications require the development of a storm water management program designed to protect water quality.

The Storm Water Program for Medium and Large MS4s differs from the Storm Water Program for Regulated Small MS4s in that the medium and large MS4 program has permit *application requirements* rather than *permit requirements*. The program for medium and large MS4s also centers on the issuance of individual permits with requirements tailored to each permittee, rather than general permits with blanket requirements for all permittees, as is encouraged for the program for regulated small MS4s.

The medium and large MS4 program topics addressed here include:

- What are the permit application requirements for medium and large MS4s?
- What is a storm water management program? (includes discussion of applicable standard)
- Are evaluation and reporting efforts required?

What are the Permit Application Requirements For Medium and Large MS4s?

The permit application requirements (found at 40 CFR 122.26(d)) are divided into two parts. Part 1 was to be submitted to the NPDES permitting authority first and then followed a year later by Part 2. The information requested to complete both parts of the permit application is very comprehensive, so most permit applications submitted to EPA fill two or more 4-inch, 3-ring binders!

Part 1

Key elements include:

1. General information
2. Description of existing legal authority to control discharges to the MS4
3. Source identification information, including a map of the system with outfalls and area activities indicated

R0001253

4. Discharge and representative outfall characterization (must assess the volume and quality of the storm water discharges)
5. Description of existing storm water management programs that control pollutants from entering the MS4 and work identify non-storm water (illicit) connections to the system
6. Description of fiscal resources, including budget and sources of funds for existing storm water programs and to complete the Part 2 application
7. Proposed Part 2 sampling plans

Part 2

Key elements include:

1. Further enhanced information from Part 1 (legal authority, source identification, and characterization data)
2. Description of proposed storm water management program (must include several different components – see regulatory language)
3. Assessment of proposed storm water management program (estimate of the program's reduction in loadings of pollutants to the MS4 discharges)
4. Fiscal analysis, including budget and resources to implement the proposed program

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What is a Storm Water Management Program?

The storm water management program includes measures to:

- Identify major outfalls and pollutant loadings
- Detect and eliminate non-storm water discharges to the storm sewer system
- Reduce pollutants in runoff from industrial, commercial and residential areas
- Control storm water discharges from new development & redevelopment areas

Once an MS4 operator's proposed storm water management program, submitted in the Part 2 application, is approved by the NPDES permitting authority, the latter issues the MS4 operator an individual permit. The permit requires the successful implementation of the program and any other specific requirements found necessary by the permitting authority to include.

Applicable Standard

In developing and implementing their storm water management programs, MS4 operators are required to meet the standard of "reducing pollutants to the Maximum Extent Practicable (MEP)." The MEP standard is the same standard that will be applied to regulated small MS4s under the Phase II program.

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Are Evaluation and Reporting Efforts Required?

Yes. In addition to the storm water management program, permits issued to medium and large MS4s require permittees to:

- Conduct analytical monitoring and visual examinations; and
- Submit to the NPDES permitting authority periodic program assessment reports that include the monitoring results

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| Storm Water Program | NPDES | OWM | OW | EPA | Contact Us | Search |

This page was last updated on June 5, 2000.

Interpretative Policy Memorandum on Reapplication Requiremen

[Federal Register: August 9, 1996 (Volume 61, Number 155)] [Rules and Regulations]
[Page 41697-41699]
>From the Federal Register Online via GPO Access [wais.access.gpo.gov]

[[Page 41697]]

Part III

Environmental Protection Agency

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40 CFR Part 122

Interpretative Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems; Final Rule

[[Page 41698]]

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 122

[FRL-5533-7]

Interpretative Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems

AGENCY: Environmental Protection Agency (EPA).

ACTION: Policy statement; interpretation.

SUMMARY: By today's notice EPA announces federal policy, signed by Robert Perciasepe, Assistant Administrator for Water, on May 17, 1996, regarding application requirements for renewal or reissuance of National Pollutant Discharge Elimination System (NPDES) permits for municipal separate storm sewer systems (MS4s). Today's action responds to requests from municipalities and NPDES permit writers for clarification about regulations which do not appear to address reapplication requirements, i.e., permit reissuance. Today's notice explains that MS4 permit applicants and NPDES permit writers have considerable discretion to customize appropriate and streamlined reapplication requirements on a case-by-case basis, specifically, by using the fourth year annual report as the principal reapplication document.

EFFECTIVE DATE: This policy is effective May 17, 1996.

FOR FURTHER INFORMATION CONTACT: Marilyn Fonseca, Office of Wastewater Management, MC-4203, U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, (202)-260-0592, e-mail: Fonseca.Marilyn@epamail.epa.gov

SUPPLEMENTARY INFORMATION: The text of this policy is as follows:

Municipal Separate Storm Sewer System Permit Reapplication Policy

The 1987 amendments to the Clean Water Act added Section 402(p) which directed the Environmental Protection Agency to establish regulations governing storm water discharges under the National Pollutant Discharge Elimination System (NPDES) program. Early in the program, Congress specifically required NPDES permits for municipal separate storm sewer systems (MS4s) serving populations over 100,000. In response, EPA promulgated regulations in 1990 that established permit application requirements for MS4s that serve populations over 100,000. MS4 permits have since been drafted and finalized for many municipal systems. A number of MS4 permits are due to expire and must be reissued.
EPA is providing this policy memorandum to outline permit reapplication requirements for regulated MS4s. There are three components to EPA's reapplication policy. First, EPA is not requiring that the process used for part 1 and 2 of the initial permit application be repeated in full. Second, EPA has identified basic information that should be included in every reapplication package. Finally, EPA is seeking to improve existing MS4 storm water management programs by using information and experience municipalities have gained during the previous permit term.

Is a Permit Reapplication Necessary?

Yes. The requirement that all point source discharges authorized by a NPDES permit must reapply is well established at 40 CFR 122.41(b) and 122.46(a):

Duty to reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. Duration of permits. NPDES permits shall be effective for a fixed term not to exceed 5 years.

The reapplication requirement is also found at 40 CFR 122.21(d):

Duty to reapply. . . . All other permittees with currently effective permits shall submit a new application 180 days before the existing permit expires.

Therefore, all regulated Phase I MS4s need to participate in a permit reapplication process.
Where a complete reapplication package has been submitted as directed by the permit authority, conditions of an expired MS4 permit will continue until the effective date of a new permit, as stated in 40 CFR 122.6(a) and (b):

(a) EPA permits. When EPA is the permit-issuing authority, the conditions of an expired permit continue in force . . . until the effective date of a new permit . . . and (b) Effect. Permits continued under this section remain fully effective and enforceable.

Are Initial MS4 Permit Application Requirements Applicable To Permit Reapplication?

No. The scope of the initial permit application requirements was comprehensive and regulated MS4s invested considerable resources to develop these applications. The initial applications have laid the foundation for the long-term implementation of MS4 storm water management programs. EPA believes reapplications should focus on maintenance and improvement of these programs. The MS4 permit application requirements at 40 CFR 122.26(d)(1) and (2) apply to the first round permit applications required of large and medium MS4s. The permit application deadline regulations in 40 CFR 122.26(e) (3)

& (4) clearly reflect the ``one time" nature of the Part I & II application requirements for large and medium MS4s. EPA has not promulgated regulations applicable to reapplication for MS4s. Requirements to demonstrate adequate legal authority, perform source identification (e.g., identify major outfalls and facility inventory), characterize data, and develop a storm water management program should have been addressed in the initial application phase. Therefore, to request the same information again, where it has already been provided and has not changed, would be needlessly redundant. Thus, as a practical matter, most first-time permit application requirements are unnecessary for purposes of second round MS4 permit application.

What Basic Information Must Be Submitted for an MS4 Permit Reapplication?

EPA is committed to allowing permitting authorities to develop flexible reapplication requirements that are site-specific. In the absence of reapplication regulations specific to MS4s, minimum reapplication requirements are drawn from the generic NPDES permit application regulations at 40 CFR 122.21(f). EPA regulations suggest the following basic information be included as part of any permit reapplication:

--name and mailing address(es) of the permittee(s) that operate the MS4, and
--names and titles of the primary administrative and technical contacts for the municipal permittee(s).

In addition, in the reapplication municipalities should identify any proposed changes or improvements to the storm water management program and monitoring activities for the upcoming five year term of the permit, if those proposed changes have not already been submitted pursuant to 40 CFR 122.42(c). [A requirement to submit proposed changes to the storm water management program is specified in the annual reporting requirements in 40 CFR 122.42(c)(2).] EPA encourages permitting authorities to make use of the fourth year annual report as the basic permit reapplication package.

[[Page 41699]]

Changes to the storm water management program may be justified due to the availability of new information on the relative magnitude of a problem or new data on water quality impacts of the storm water discharges. Municipalities may also propose to de-emphasize some program components and strengthen others, based on the experience gained under the first permit. Proposed elimination of a program component might be justified upon permit renewal; for example, when a component is no longer a problem area (i.e., all detention basins have been retrofitted) or when a different water quality program would serve the same goals.
The components of the original storm water management program which are found to be effective should be continued and made an ongoing part of the proposed new storm water management program. Such components may include:

--continued emphasis on public education programs, particularly programs on proper disposal of waste oil and household hazardous waste and pesticide application;
--continued, if not greater, emphasis on addressing impacts of new development/construction;
--proper storm design criteria for all new developments; --retrofitting and/or upgrading of the existing storm sewer system according to a priority system;
--more frequent maintenance of storm sewer systems and storm water treatment systems;
--coordination with adjacent MS4s on monitoring or other efforts; and --using a watershed approach to storm water management.

The accumulated annual report information as outlined in 40 CFR 122.42(c) should be evaluated and, to the extent applicable, be incorporated by reference into the reapplication package. To reiterate, MS4s may use the fourth year annual report, which emphasizes proposed changes to the storm water management

program; with the additional required basic information, as the MS4 permit reapplication. Changes to the storm water management program should be jointly developed by the permitting authority and the permit applicant. In this regard, we urge permit issuance authorities and permittees to work together to assure that the permit reapplication is complete and addresses all appropriate issues. The permitting agency may request additional technical information be submitted in the reapplication. NPDES permitting authorities, therefore, can exercise their information gathering authority under CWA Section 308, or analogous State provisions to complete the permit reapplication on a case-by case basis, as appropriate.

What Additional Information Should Be Considered for a Reapplication?

EPA also recommends the following information be provided by reapplicants to the permitting authority, as outlined in 40 CFR 122.26(d)(1)(iv)(C):

--identification of any previously unidentified water bodies that receive discharges from the MS4, and
--a summary of any known water quality impacts on the newly identified receiving waters (based on best available data).

In addition, EPA recommends the following information be provided to the permitting authority as well:

--a description of changes in co-applicants since issuance of initial MS4 permit, and
--identification number of the existing NPDES MS4 permit.

Further, EPA encourages permitting authorities to work with permittees to determine if storm water monitoring efforts are appropriate and useful. For example, during the previous permit term, municipalities may have found that their monitoring program was not fully successful in characterizing the nature and extent of storm water problems. Reapplication is an appropriate time for MS4s to evaluate their monitoring program and propose changes to make the program more appropriate and useful. To accomplish this, municipalities may wish to consider using monitoring techniques other than end-of-the pipe chemical-specific monitoring, including habitat assessments, bioassessments and/or other biological methods. Permitting authorities should incorporate any such new information, together with assembled materials from the initial application and the existing permit, to form the administrative record for any reissued MS4 permits. Such administrative records should be made publicly available as part of the process to reissue the permit.

Dated: June 28, 1996.
Michael B. Cook,
Director, Office of Wastewater Management. [FR Doc. 96-20228 Filed 8-8-96; 8:45 am] BILLING CODE 6560-50-P

R0001259

[Federal Register: August 26, 1996 (Volume 61, Number 166)] [Notices]
[Page 43761]
>From the Federal Register Online via GPO Access [wais.access.gpo.gov]

ENVIRONMENTAL PROTECTION AGENCY
[FRL-5559-9]

Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits

AGENCY: Environmental Protection Agency.

ACTION: Notice.

SUMMARY: Notice is hereby given that the Environmental Protection Agency (EPA) has issued a policy outlining an interim approach for incorporating water quality-based effluent limitations into storm water permits.

Background and Purpose

Due to the nature of storm water discharges, and the typical lack of information on which to base numeric water quality-based effluent limitations (expressed as concentration and mass), EPA has developed an interim permitting approach for National Pollution Discharge Elimination System (NPDES) storm water permits. While this interim permitting approach applies only to EPA, the Agency also encourages authorized States and Tribes to adopt similar policies for storm water permits.
The policy addresses issues related to the type of effluent limitations that are most appropriate for NPDES storm water permits to provide for the attainment of water quality standards. Since the policy only applies to water quality-based effluent limitations, it is not intended to affect technology-based limitations, such as those based on effluent guidelines or the permit writer's best professional judgements, that are incorporated into storm water permits. With this policy, the Office of Water is seeking to fulfill objectives of the 1996-1997 National Water Program Agenda for the Future, including reducing the threat of wet weather discharges to water quality, providing States and local governments with greater flexibility to solve wet weather problems, and identifying and taking appropriate steps to reduce the existing burden of the Storm Water Phase I program. Numerous parties were involved in preparing this policy. In addition to receiving significant input from the Urban Wet Weather Flows (UWWF) Federal Advisory Committee, EPA also consulted with the States and Regional Storm Water Coordinators. This interim permitting approach may be modified as a result of ongoing policy dialogue with the UWWF Federal Advisory Committee.

Policy Statement

In response to recent questions regarding the type of water quality-based effluent limitations that are most appropriate for National Pollutant Discharge Elimination System (NPDES) storm water permits, the Environmental Protection Agency (EPA) is adopting an interim permitting approach for regulating wet weather storm water discharges. Due to the nature of storm water discharges, and the typical lack of information on which to base numeric water qualitybased effluent limitations (expressed as concentration and mass), EPA will use an interim permitting approach for NPDES storm water permits. The interim permitting approach uses best management practices (BMPs) in first-round storm water permits, and expanded or bettertailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards. In cases where adequate information exists to develop more specific conditions or

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 1 1996

Dear State Water Program Directors:

The purpose of this letter is to transmit to you the final Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits. The policy addresses issues relating to the type of effluent limitations that are most appropriate for National Pollutant Discharge Elimination System storm water permits to provide for the attainment of water quality standards. Since this policy only applies to water quality-based effluent limitations, it is not intended to affect technology-based limitations, such as those based on effluent guidelines or the permit writers best professional judgement, that are incorporated into storm water permits. With this policy, the Office of Water is seeking to fulfill objectives of the 1996-1997 National Water Program Agenda for the Future (January 16, 1996), including reducing the threat of wet weather discharges to water quality, providing States and local governments with greater flexibility to solve wet weather problems, and identifying and taking appropriate steps to reduce the existing burden of the Storm Water Phase I program.

Numerous parties were involved in preparing this policy. In addition to receiving significant input from the Urban Wet Weather Flows Advisory Committee, EPA also consulted with State and Regional Storm Water Coordinators.

If you have questions regarding this policy, please contact William Hall at (202) 260-1458 or Bill Swietlik at (202) 260-9529. I thank you for your assistance.

Sincerely,

Robert Perciasepe
Assistant Administrator

Enclosure

R0001261

limitations to meet water quality standards, these conditions or limitations are to be incorporated into storm water permits, as necessary and appropriate. This interim permitting approach is not intended to affect those storm water permits that already include appropriately derived numeric water quality-based effluent limitations. Since the policy only applies to water quality-based effluent limitations, it is not intended to affect technology-based limitations, such as those based on effluent guidelines or the permit writer's best professional judgement, that are incorporated into storm water permits.
Each storm water permit should include coordinated and costeffective monitoring program to gather necessary information to determine the extent to which the permit provides for attainment of applicable water quality standards and to determine the appropriate conditions or limitations for subsequent permits. Such a monitoring program may include, ambient monitoring, receiving water assessment, discharge monitoring (as needed), or a combination of monitoring procedures designed to gather necessary information. This interim permitting approach applies only to EPA, however, EPA also encourages authorized States and Tribes to adopt similar policies for storm water permits. This interim permitting approach provides time, where necessary, to more fully assess the range of issues and possible options for the control of storm water discharges for the protection of water quality. This interim permitting approach may be modified as a result of the ongoing Urban Wet Weather Flows Federal Advisory Committee policy dialogue on this subject.

DATES: The policy was signed by the Assistant Administrator for Water on August 1, 1996.

FOR FURTHER INFORMATION: If you have questions about the police, please contact, Bill Swietlik, Storm Water Phase I Matrix Manager, Office of Wastewater Management, at (202) 260-9529 or William Hall, Urban Wet Weather Flows Matrix Manager, Office of Wastewater Management, at (202) 260-1458, or by Internet: hall.william@epamail.epa.gov.

Dated: August 19, 1996.
Fred Lindsey,
Acting Director, Office of Wastewater Management, Designated Federal Official.
[FR Doc. 96-21671 Filed 8-23-96; 8:45 am] BILLING CODE 6560-50-P

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 1 1996

OFFICE OF
WATER

MEMORANDUM

SUBJECT: Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits

FROM: Robert Perciasepe
Assistant Administrator

TO: EPA Water Management Division Directors

The purpose of this memorandum is to transmit to you the final Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits. The policy addresses issues relating to the type of effluent limitations that are most appropriate for National Pollutant Discharge Elimination System storm water permits to provide for the attainment of water quality standards. Since this policy applies only to water quality-based effluent limitations, it is not intended to affect technology-based limitations, such as those based on effluent guidelines or the permit writers best professional judgement, that are incorporated into storm water permits. With this policy, the Office of Water is seeking to fulfill objectives of the 1996-1997 National Water Program Agenda for the Future (January 16, 1996), including reducing the threat of wet weather discharges to water quality, providing States and local governments with greater flexibility to solve wet weather problems, and identifying and taking appropriate steps to reduce the existing burden of the Storm Water Phase I program.

Numerous parties were involved in preparing this policy. In addition to receiving significant input from the Urban Wet Weather Flows Advisory Committee, EPA also consulted with State and Regional Storm Water Coordinators.

If you have questions regarding this policy, please contact William Hall at (202) 260-1458 or Bill Swietlik at (202) 260-9529. I thank you for your assistance.

Attachment

INTERIM PERMITTING APPROACH FOR WATER QUALITY-BASED EFFLUENT LIMITATIONS IN STORM WATER PERMITS

In response to recent questions regarding the type of water quality-based effluent limitations that are most appropriate for National Pollutant Discharge Elimination System (NPDES) storm water permits, the Environmental Protection Agency (EPA) is adopting an interim permitting approach for regulating wet weather storm water discharges. Due to the nature of storm water discharges, and the typical lack of information on which to base numeric water quality-based effluent limitations (expressed as concentration and mass), EPA will use an interim permitting approach for NPDES storm water permits.

The interim permitting approach uses best management practices (BMPs) in first-round storm water permits, and expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards. In cases where adequate information exists to develop more specific conditions or limitations to meet water quality standards, these conditions or limitations are to be incorporated into storm water permits, as necessary and appropriate. This interim permitting approach is not intended to affect those storm water permits that already include appropriately derived numeric water quality-based effluent limitations. Since the interim permitting approach only addresses water quality-based effluent limitations, it also does not affect technology-based effluent limitations, such as those based on effluent limitations guidelines or developed using best professional judgement, that are incorporated into storm water permits.

Each storm water permit should include a coordinated and cost-effective monitoring program to gather necessary information to determine the extent to which the permit provides for attainment of applicable water quality standards and to determine the appropriate conditions or limitations for subsequent permits. Such a monitoring program may include ambient monitoring, receiving water assessment, discharge monitoring (as needed), or a combination of monitoring procedures designed to gather necessary information.

This interim permitting approach applies only to EPA; however, EPA also encourages authorized States and Tribes to adopt similar policies for storm water permits. This interim permitting approach provides time, where necessary, to more fully assess the range of issues and possible options for the control of storm water discharges for the protection of water quality. This interim permitting approach may be modified as a result of the ongoing Urban Wet Weather Flows Federal Advisory Committee policy dialogue on this subject.

Qs & As FOR INTERIM PERMITTING APPROACH FOR WATER QUALITY-BASED EFFLUENT LIMITATIONS IN STORM WATER PERMITS

Question 1: Must EPA require that storm water dischargers, industrial or municipal, be subject to numeric water quality-based effluent limitations (expressed as concentration and mass) in order to attain water quality standards (WQS)?

Answer 1: No. Although National Pollutant Discharge Elimination System (NPDES) permits must contain conditions to ensure that water quality standards are met, this does not require the use of numeric water quality-based effluent limitations. Under the Clean Water Act (CWA) and NPDES regulations, permitting authorities may employ a variety of conditions and limitations in storm water permits, including best management practices, performance objectives, narrative conditions, monitoring triggers, action levels (e.g., monitoring benchmarks, toxicity reduction evaluation action levels), etc., as the necessary water quality-based limitations, where numeric water quality-based effluent limitations are determined to be unnecessary or infeasible.

Analysis:

A. The Clean Water Act does not require numeric effluent limitations.

Section 301 of the CWA requires that discharger permits include effluent limitations necessary to meet State or Tribal WQS. Section 502 defines "effluent limitation" to mean any restriction on quantities, rates, and concentrations of constituents discharged from point sources. The CWA does not say that effluent limitations need be numeric. As a result, EPA and States have flexibility in terms of how to express effluent limitations.

B. EPA's regulations do not always require numeric effluent limitations.

EPA has, through regulation, interpreted the statute to allow for non-numeric limitations (e.g., "best management practices" or BMPs, see 40 CFR 122.2) to supplement or replace numeric limitations in specific instances that meet the criteria specified at 40 CFR 122.44(k). This regulation essentially codifies a court case addressing storm water discharges. NRDC v. Costle, 568 F.2d 1369 (D.C. Cir. 1977). In that case, the Court stated that EPA need not establish numeric effluent limitations where such limitations were infeasible.

C. EPA has interpreted the statute and regulations to allow BMPs in lieu of numeric limitations.

EPA has defended use of BMPs as a substitute for numeric limitations in litigation involving storm water discharges (CBE v. EPA, 91-70056 (9th Cir.)(brief on merits)) and in correspondence (Letter from Michael Cook, EPA, to Peter Lehner, NRDC, May 31, 1995). EPA has found that numeric limitations for storm water permits can be very difficult to develop at this time because of the existing state of knowledge about the intermittent and variable nature of these types of discharges and their effects on receiving waters. Some storm water permits, however, currently do contain numeric water quality-based effluent limitations where adequate information exists to derive such limitations.

Question 2: Has EPA provided guidance on a methodology for deriving numeric water quality-based effluent limitations?

Answer 2: Yes, but primarily for continuous wastewater discharges at low flow conditions in the receiving water, not intermittent wet weather discharges during high flow conditions. Regulations at 40 CFR 122.44(d) specify the requirements under which permitting authorities establish water quality-based effluent limitations when a facility has the "reasonable potential" to cause or contribute to an excursion of numeric or narrative water quality criteria. In addition, EPA guidance in the Technical Support Document for Water Quality-Based Toxics Control (TSD) and the NPDES Permit Writers Training Manual, supplemented with total maximum daily load (TMDL) and modeling guidance, supports issuing permits that include numeric water quality-based effluent limitations. This guidance was based on crafting numeric water quality-based effluent limitations using TMDLs, or calculations similar to those used in developing TMDLs, and wasteload allocations (WLAs) derived through modeling. EPA expects the Urban Wet Weather Flows Federal Advisory Committee (60 FR 21189, May 1, 1995) will review this issue at greater length and may provide recommendations on how to proceed.

Question 3: Why can numeric water quality-based effluent limitations be difficult to derive for storm water permits?

Answer 3: Storm water discharges are highly variable both in terms of flow and pollutant concentrations, and the relationships between discharges and water quality can be complex. The water quality impacts of storm water discharges are related to the uses designated by States and

Tribes in their WQS, the quality of the storm water discharge (e.g., conventional or toxic pollutants conveyed to the receiving water) and quantity of the storm water (e.g., erosion and loss of habitat caused by increased flows and velocity). Uses may be impacted by both water quality and water quantity. Depending on site-specific considerations, some of the water quality impacts of storm water discharges may be more related to the physical effects (e.g. stream bank erosion, streambed scouring, extreme temperature variations, sediment smothering) than the type and amount of pollutants present in the discharge. For municipal storm water discharges in particular, the current use of system-wide permits and a variety of jurisdiction-wide BMPs, including educational and programmatic BMPs, does not easily lend itself to the existing methodologies for deriving numeric water quality-based effluent limitations. These methodologies were designed primarily for process wastewater discharges which occur at predictable rates with predictable pollutant loadings under low flow conditions in receiving waters. Using these methodologies, limitations are typically derived for each specific outfall to be protective of low flows in the receiving water. Because of this, permit writers have not made wide-spread use of the existing methodologies and models for storm water discharge permits. In addition, wet weather modeling is technically more difficult and expensive than the simple dilution models generally used in the permitting process.

Question 4: Has EPA previously recognized the technical difficulty in deriving numeric water quality-based effluent limitations for storm water discharges?

Answer 4: Yes. EPA recognized the technical difficulty in deriving numeric water quality-based effluent limitations for wet weather discharges in its brief on the merits in Citizens for a Better Environment (CBE) v. United States Environmental Protection Agency, 91-70056 (9th Cir.) and in the Great Lakes Water Quality Guidance (58 FR 20841, April 16, 1993).

In the CBE case, EPA explained why it was technically infeasible to derive numeric water quality-based effluent limitations for the discharge of metals in storm water into South San Francisco Bay and asserted that a water quality-based effluent limitation could take the form of a narrative statement, such as a BMP, if it was infeasible to derive a numeric limitation. In explaining its arguments in the CBE case, EPA cited 40 CFR 122.44(k)(2), which provides that BMPs may be imposed in NPDES permits "to control or abate the discharge of pollutants when ... (2) [n]umeric effluent limitations are infeasible."

In the Great Lakes Water Quality Guidance, EPA did not extend the method for calculating wasteload allocations, the basis for numeric water quality-based effluent limitations, to storm water or combined sewer overflow (CSO) discharges because the varying nature of these discharges is inconsistent with the assumptions used in developing the guidance. The Great Lakes Water Quality Guidance defers to national guidance and policy on wet weather and does not seek to establish a separate and distinct set of wet weather requirements. EPA expects the Urban Wet Weather Flows Advisory Committee to provide recommendations about how to address the broader technical issues involved in achieving compliance with WQS in a wet weather context.

Question 5: What are the potential problems of using standard methodologies to derive numeric water quality-based effluent limitations for storm water permits?

Answer 5: Correctly derived numeric water quality-based effluent limitations provide a greater degree of confidence that a discharge will not cause or contribute to an exceedance of the WQS, because numeric water quality-based effluent limitations are derived directly from the numeric component of those standards. In addition, numeric water quality-based effluent limitations can avoid the expense associated with overly protective treatment technologies because numeric water quality-based effluent limitations provide a more precisely quantifed target for permittees. Potential problems of incorporating inappropriate numeric water quality-based effluent limitations rather than BMPs in storm water permits at this time are significant in some cases. Deriving numeric water quality-based effluent limitations for any NPDES permit without an adequate effluent characterization, or an adequate receiving water exposure assessment (which could include the use of dynamic modeling or continuous simulations) may result in the imposition of inappropriate numeric limitations on a discharge. Examples of this include the imposition of numeric water quality criteria as end-of-pipe limitations without properly accounting for the receiving water assimilation of the pollutant or failure to account for a mixing zone (if allowed by applicable State or Tribal WQS). This could lead to overly stringent permit requirements, and excessive and expensive controls on storm water discharges, not necessary to provide for attainment of WQS. Conversely, an inadequate effluent characterization could lead to water quality-based effluent limitations that are not stringent enough to provide for attainment of WQS. This could result because effluent characterization and exposure assessments for discharges with high variability of pollutant

concentrations, loadings, and flow are more difficult than with process wastewater discharges at low flows.

Question 6: How are water quality-based effluent limitations developed for combined sewer overflow (CSO) discharges?

Answer 6: The CSO Control Policy issued by EPA on April 19, 1994 (59 FR 18688) provides direction on compliance with the technology-based and water quality-based requirements of the CWA for communities with combined sewer systems. The CSO Policy provides for implementation of technology-based requirements (expressed as "nine minimum controls") by January 1, 1997.

In addition, under the CSO Policy, communities are also expected to develop long-term control plans that will provide for attainment of WQS through either the "presumption approach" or the "demonstration approach." Under the presumption approach, CSO controls would be presumed to attain WQS if certain performance criteria are met. A program that meets the criteria specified in the CSO policy is presumed to provide an adequate level of control to meet the water quality-based requirements of the CWA, provided the permitting authority determines that such presumption is reasonable based on characterization, monitoring, and modeling of the system, including consideration of sensitive areas. Under the demonstration approach, the permittee would demonstrate that the selected CSO controls, when implemented, would be adequate to meet the water quality-based requirements of the CWA.

The CSO Policy anticipates that it will be difficult in the early stages of permitting to determine whether numeric water quality-based effluent limitations are necessary for CSOs, and, if so, what the limitations should be. For that reason, in the absence of sufficient data to evaluate the need for numeric water quality-based effluent limitations, the Policy recommends that the first phase of CSO permits ("Phase I") contain a narrative requirement to comply with WQS. Further, so-called "Phase II" permits would contain water quality-based effluent limitations, as provided in 40 CFR 122.44(d)(1) and 122.44(k), that may take the form of numeric performance or design standards, such as a certain number of overflow events or a certain percent volume capture. Generally, only after the long-term control plan is in place and after collection of sufficient water quality data (including applicable wasteload allocations developed during a TMDL process) would numeric water quality-based effluent limitations be included in the permit. This would likely occur only after several permitting cycles.

Question 7: If BMPs alone are demonstrated to provide adequate water quality protection, are additional controls necessary?

Answer 7: No. If the permitting authority determines that, through implementation of appropriate BMPs required by the NPDES storm water permit, the discharges have the necessary controls to provide for attainment of WQS and any technology-based requirements, additional controls need not be included in the permit. Conversely, if a discharger (municipal or industrial) fails or refuses to adopt and implement adequate BMPs , the permitting authority may have to consider other approaches to ensure water quality protection.

If, however, the permitting authority has adequate information on which to base more specific conditions or limitations, such limitations are to be incorporated into storm water permits, as necessary and appropriate. Such conditions or limitations may include an integrated suite of BMPs, performance objectives, narrative standards, monitoring triggers, numeric water quality-based effluent limitations, action levels, etc. Storm water permits may also need to include additional requirements to receive State or Tribal 401 certifications.

Question 8: What is EPA doing to develop information about the linkage between BMPs and water quality and to facilitate a watershed-based approach to storm water permitting?

Answer 8: The Agency has cooperative agreements with WERF (Water Environment Research Foundation) and ASCE (American Society of Civil Engineers) to research which BMPs are most effective under which circumstances. The results of this research should provide permitting authorities and permittees with information about how to evaluate the effectiveness of different kinds of BMPs in different circumstances and to select the most appropriate controls to achieve water quality objectives. EPA also has cooperative agreements with the Watershed Management Institute and other organizations to conduct research over the next two to four years that will examine the capability of storm water BMPs to improve receiving water quality and restore/protect the biological integrity of those waters. EPA expects the Urban Wet Weather Flows Federal Advisory Committee to provide recommendations on how to permit storm water discharges on a watershed basis.

Question 9: The interim permitting approach states that permits should include monitoring programs to generate necessary

information to determine the extent to which permits are providing for the attainment of water quality standards. What types of monitoring should be included and how much monitoring is necessary?

Answer 9: The amount and types of monitoring necessary will vary depending on the individual circumstances of each storm water discharge. EPA encourages dischargers and permitting authorities to carefully evaluate monitoring needs and storm water program objectives so as to select useful and cost-effective monitoring approaches. For most dischargers, storm water monitoring can be conducted for two basic reasons: 1) to identify if problems are present, either in the receiving water or in the discharge, and to characterize the cause(s) of such problems; and 2) to assess the effectiveness of storm water controls in reducing contaminants and making improvements in water quality.

Under the NPDES storm water program, large and medium municipal separate storm sewer system permittees are required to conduct monitoring. EPA recommends that each such municipal permittee design the monitoring effort to be supportive of the goals and objectives of its storm water management program when developing such a program for the term of its NPDES permit. To accomplish this, a municipal permittee may use a variety of storm water monitoring tools including receiving water chemistry; receiving water biological assessments (benthic invertebrate surveys, fish surveys, habitat assessments, etc.); effluent monitoring; including chemical, whole effluent and visual examinations; illicit connections screening; and combinations thereof, or other methods. Techniques that assess receiving waters will help to identify the degree to which storm water discharges are contributing to any water quality problems. Techniques that assess storm water discharge characteristics will help to identify potential causes of any identified water quality problems. The municipal permittee, in conjunction with the applicable NPDES permitting authority, should determine which monitoring approaches would be most appropriate given the objectives of the storm water management program. If municipal permittees conduct ambient monitoring, it may be most cost-effective to pool resources with other organizations (including, for example, other municipalities, States, and Tribes) conducting monitoring within the same watershed. This could be best accomplished through a coordinated watershed monitoring strategy.

For industrial storm water dischargers, monitoring may be required under the terms of an NPDES permit for storm water discharges. For those industrial storm water permits that do require monitoring, this is typically done to characterize contaminants that might be found in the

industrial runoff and/or to assess the effectiveness of the industrial storm water pollution prevention plan in reducing these contaminants. This typically involves end-of-pipe chemical-specific monitoring. End-of-pipe monitoring may be more appropriate for an industrial facility than for a municipal permittee, given the industrial facility's more discrete site characteristics, which make management strategies such as collection and treatment more feasible. Industries, for the most part, have readily defined storm water conveyances into which runoff flows from discrete drainage areas. Industries may more readily identify and control existing on-site sources of storm water contamination or provide collection and treatment within these discrete drainage areas to control pollutant concentrations in their storm water discharges.

EPA and other organizations are currently working to improve approaches for monitoring storm water and the potential effects upon water quality. These new approaches are called storm water program "environmental indicators." Environmental indicators are designed to be more meaningful monitoring tools that storm water dischargers can use to conduct storm water monitoring for the purposes described above. A manual describing each of the recommended storm water program environmental indicators is being prepared by the Center for Watershed Protection in Silver Spring, Maryland. That manual is expected to be ready by the end of August 1996 and should provide useful information for storm water dischargers contemplating the need to develop a cost-effective, meaningful storm water monitoring program. In addition, EPA expects the Urban Wet Weather Flows Federal Advisory Committee to provide recommendations on how to better monitor storm water and other wet weather discharges using a watershed approach.

Question 10: Does this interim permitting approach apply to both storm water discharges associated with industrial activity and storm water discharges from municipal separate storm sewer systems?

Answer 10: Yes. The interim permitting approach is applicable to both discharges from municipal separate storm sewer systems and storm water discharges associated with industrial activity (as defined by 40 CFR 122.26(b)(14)). The interim permitting approach would not affect, however, permits that already incorporate appropriately derived numeric water quality-based effluent limitations. Since the interim permitting approach only addresses water quality-based effluent limitations, it also does not affect technology-based effluent limitations, such as those based on effluent limitations guidelines or developed using best

professional judgement, that are incorporated into storm water permits. In addition, particularly for some industries, adequate information may already have been collected with which to assess the reasonable potential for a storm water discharge to cause or contribute to an excursion of a WQS, and from which a numeric water quality-based effluent limitation can be (or has been) appropriately derived. An adequate amount of storm water pollutant source information may also exist with which to assess the effectiveness of the industrial storm water control measures in complying with the limitations and in reducing storm water contaminants for protecting water quality.

From: Wendy Phillips
To: internet:mariki@dpw.co.la.ca.us
Date: 2/15/01 4:56PM
Subject: Renewal schedule

Mustafa - Would you please share this schedule with the EAC? It's been revised as discussed at our meeting yesterday. Thanks.

Wendy Phillips
Storm Water Section
LA Regional Water Quality Control Board
(213) 576-6618

CC: Dan Radulescu; Dennis Dasker; Dennis Dickerson; Megan Fisher; Parvaneh Khayat; Xavier Swamikannu

LA County MS4

Proposed Renewal Schedule[1]

Wed. Feb 14th	Meet with EAC
Fri. Feb 23rd	Issue ROWD comment letter
Thur. March 15th	"Preliminary" draft/staff report ready for review
Thur. March 22nd	Meet with subcommittee of permittees to review preliminary draft
Mon. April 2nd	Issue first draft of permit/staff report (containing technical basis)
Wed. April 18th	Conduct workshop – location to be determined
Thurs. April 26th	Brief Board on renewal process at Board meeting
Tues. May 8th	Comments on first draft due
Fri. June 1st	Issue final draft of permit and staff report, including responses to initial comments
Fri. July 6th	Final written comments due
Wed. July 18th	Issue "Response to Comments" to public and to Board
Thurs. July 26th	Propose adoption at Board meeting

[1] Does not include many "special" meetings that we anticipate, to discuss details of technical issues.

Prepared on February 15, 2001

From: Wendy Phillips
To: "CTREVIZO@dpw.co.la.ca.us".mime.Internet
Date: 2/22/01 12:14PM
Subject: Re: IC/ID Meeting Agenda

Hi Carolina - Here's an agenda (with questions), and also my notes on those categories of Non-Storm Water Discharges that are - or are requested - to be exempted from the prohibition. Also, although I'd indicated to Mustafa that we might start to discuss IC/ID permit language, I have not included any changes at this point, as I believe it's important to get a better understanding of the IC/ID status and your goals.

As discussed with Mustafa, we would like to be as productive as possible, and therefore have asked to have a "working" group of representatives from the EAC attend this meeting. If we have more than 6 - 9 (including Co staff), I'm concerned that it will no longer be a working group. In addition to our workshop on April 18th, we shall have special meetings and/or mini-workshops on an as-needed basis for larger groups; such special meetings/workshops can focus on specific topics, such as IC/ID, monitoring, etc.

Looking forward to our discussions.

Wendy Phillips
Storm Water Section
LA Regional Water Quality Control Board
(213) 576-6618

>>> "Trevizo, Carolina" <CTREVIZO@dpw.co.la.ca.us> 02/22/01 11:50AM >>>
Wendy,

Thank you for returning my phone call about the IC/ID meeting. It would be appreciated, if you could send the meeting agenda and questions to be discuss to Glenn Howe and myself.

Thanks again,
Carolina T. Trevizo
Los Angeles County Department of Public Works
Watershed Management Division
NPDES Section
J ctrevizo@dpw.co.la.ca.us
F (626) 458-3978
http://www.888cleanla.com

CC: Dan Radulescu; Dennis Dickerson; Howe, Glenn; Xavier Swamikannu

Proposed Agenda
Inspection Program Issues
On
Tuesday, February 27, 2001, 1:00 to 3:00
At the
Los Angeles County Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91803

1. Introductions, review agenda, etc.

2. Purpose of the meeting - XS

3. Scope of Educational Site Visits - XS
4. Over-view of LA County Industrial Waste Program under Consent Decree - Carl Sjoberg
5. Potential Strategy for Inspection Program - All
6. Coordination between Regional Board and LA County Inspection Programs - All
7. Open forum
8. Next Step

Notes from the Meeting on Inspection Program Issues on February 27, 2001
At the
Los Angeles County Department of Public Works
900 South Fremont Avenue

Attendance: See Sign-up Sheet

1. Introduction XS briefly introduced participants
2. Purpose of the meeting - XS explained the reason of the meeting as an attempt from the RB Staff to understand more closely the implementation of the educational site visit program by the LA County and a number of co-Permittees contracting services with the County
3. Scope of Educational Site Visits - XS gave a brief overview of the intent of the Educational Site Visits component under existing permit
4. Over-view of LA County Industrial Waste Program under Consent Decree - Carl Sjoberg gave an overview of the LA County inspection Program and how the storm water component fits with the other components under the LA County's Industrial Waste inspection and enforcement program
    - 39 cities contract IW services with the County
    - under consent decree = first a inspection list was developed
        - first priority: those facilities already permitted under County's various programs
        - inspection frequency: at least once a year some times more often (for permitted sites) = some have NOI under State permit
        - second priority: create a list of non-permitted sites (difficult: no reliable business databases available)

- For the contract cities (with permittees under LA Co IW program) LA Co did the inspection through an agreement
- The list of non-permitted sites was narrowed down by as much as 50%
- Additional cities: Covina, Downey, Burbank also asked the County to perform the program under an accelerated agreement
- First round of inspection completed
- Second round done by April 2001
- Carl S distributed the inspection form used by the County and some additional cities (or the same template in use)
    - Form used for both inspection and educational site visits
    - Form used for entering data in HMS System and in SW Database system
- Carl S commented that is a difficult position for inspector to be an enforcer and an educator in the same time. He suggested that these duties should remain separate and performed by separate staff
- Carl S brought up the issue of access for inspections on sites both permitted and non-permitted
- First and second round of inspections focused on management (non--structural) BMPs not on structural BMPs implementation
- Average amount budgeted per current inspection $50
- Average amount for a full blown IW inspection: $60/hr
- Inspectors looking at the "total site" appearance and compliance (across media and programs)

5. Potential Strategy for Inspection Program

- Carl S mentioned that an inspection program may be easier to enforce if sites would be covered under a County permit
- The $250 permit fee difference between areas with municipal permits and those without, charged for the State industrial permit may be an additional source of funding
- Xavier S mentioned the intent of the RB staff to make the inspection and enforcement program a separate component in the ~~new~~ proposed permit and keep a separate educational site visits under the PIPP
- Xavier S mentioned a possibility of a grant proposal for SW inspections for facilities in the unincorporated areas of the County
- It was suggested continuing the use of the existing lists and databases already created and update and augment them as needed
- Glenn H mentioned that the County is developing a web based tracking system that can be used by all Permittees and will standardize the tracking and scheduling system

6. Coordination between Regional Board and LA County Inspection Programs
   - Xavier S mentioned that a better coordination between RB activities and LA Co and the cities can be achieved
   - Also a better coordination of inspection schedules can be achieved through various tools: web based, database access, etc...

02/28/01 11:25 AM dan radulescu notes from the meeting on inspection program issues on february 27

PLEASE SIGN FOR RECORD OF PARTICIPATION Inspection Program Industrial/Commercial Sites
LA Co. DPW Environmental Programs Division

Location: ~~CRWQCB - REGION 4~~ 900 S Fremont Ave
~~JUNIPERO SERRA BUILDING~~ Alhambra
~~320 W. FOURTH STREET, SUITE 200, LOS ANGELES, CA 90013~~

Date: 2/27/01 1:45 P.M.

PLEASE WRITE LEGIBLY

	NAME	AGENCY/COMPANY/ RESIDENT	MAILING/E-MAIL ADDRESS	TEL. NO.	FAX NO.
1.	Carl Sjoberg	LA Co. DPW			
2.	Xavier Swamikannu	CRWQCB - LA		213 576 6664	213 576 6660
3.	Dan Radulescu	CRWQCB - LA		213 576 6668	"
4.	Glenn Howe	LA Co DPW		626-458-5963	
5.					
6.					
7.					
8.					
9.					

R0001281

Proposed Agenda
Working Group to Address IC/ID Issues
On
Wednesday, February 28, 2000, 2:00 to 4:00
At the
Regional Board (LA River Conference Room)
320 West 4th Street, Suite 200, LA

1. Introductions, review agenda, etc.

2. Discuss IC/ID element of the SQMP

   - What types of discharges are most problematic? Since implementation the existing program, how much progress has been made re:
     - Response times to illicit discharges, and elimination?
     - Field surveys of illicit connections?

   - What goals are permittees setting in the proposed IC/ID element for the next 5 years, and how can performance standards be incorporated? E.g.
     - ID response times and reporting?
     - IC field surveys?
       - How much of the storm drain system remains to be completed?
       - Who is responsible for completion of surveys, including necessary corrective action and enforcement?

3. Discuss exemptions from non-storm water discharges

   - Proposed additions (see attached table).
   - Need for clarification of conditions for those exemptions subject to conditions that were approved by the Executive Officer.
   - Other? E.g. how are permittees dechlorinating swimming pool discharges?

4. Next steps

Exempted "Non-Storm Water" Discharges

Exemptions to "Non-storm water" Discharge Prohibition Requested in 2001 ROWD	In 1996 permit?	Initial Comment
Categories of **natural flow**, from:		
• Springs	Yes	Ok
• Riparian zones or wetlands	Yes	Ok
• Stream diversions	Yes	But aren't these already covered by water rights permits?
• Rising ground water	Yes	Ok
• Uncontaminated ground water infiltration??	Yes	Not sure what this means.
Categories of **emergency flows**, from:		
• Emergency fire fighting	Yes	Ok
Categories of **flows incidental to urban activities**, from:		
• Landscape irrigation, including irrigation with both:		
– Potable water	Yes – c	Ok
– Reclaimed (recycled) water	No	Ok, with conditions
• Flushing drinking water lines	Yes – c	Ok
• Lake dewatering	No	Needs justification.
• Potable water sources	Yes – c	Ok
• Foundation drains	Yes – c	Passive only, needs conditions.
• Grading drains	No	"
• Footing drains	Yes – c	"
• Crawl space pumps	Yes – c	"
• Emergency floor drains	No	What emergencies? Needs justification.
• Car washing, by:		
– Individuals (residential)	Yes – c	All are ok – but all need conditions
– Non-profit organizations	No	
– Fire fighting vehicles	No	
• Street and sidewalk washing	Yes	Conditions need to be clarified (only City of LA sidewalk washing has been approved to date).
• Air conditioning condensate	Yes – c	Ok
• Dechlorinated swimming pool discharges	Yes – c	Conditions need to be clarified.
• Washing flood and other human tissues at accident sites or accidental spills	No	No – would impact water quality. Can be managed without washdown to storm drain.

COUNTY OF LOS ANGELES ● DEPARTMENT OF PUBLIC WORKS
ENVIRONMENTAL PROGRAMS DIVISION
Storm Water Facility Inspection/Site Visit Report Form

Site/File_____

Inspection Work Order (I)_____

☐ First Inspection ☐ Routine Inspection ☐ Response to Complaint ☐ Facility has closed or new Facility Information (see attached)

Facility Name: Site Address: Area (R/C) Code:

Contact Name: Phone: Business Type/Activity: SIC:

Is the facility within the County unincorporated area ? ☐ Yes ☐ No City: _____

Is the facility covered under any other permits? (Check all that apply) ☐ None ☐ Industrial Waste
☐ Air Quality ☐ Hazmat business plan ☐ Underground Storage Tanks ☐ Aboveground storage tanks
☐ Fire Dept. (Storage) ☐ Hazardous waste generator ☐ Other: _____

Is the facility covered under a storm water permit? ☐ Does not need coverage ☐ No, but may need to (Refer to Regional Board)
☐ General (filed NOI) ☐ Individual NPDES

Does the facility have a SWPPP? ☐ Yes ☐ No

ACTIVITIES ASSESSMENT CHECKLIST

ACTIVITIES - Check each activity present at the site and evaluate its **potential for pollutant discharge (PPD)**: 1 = low potential, 2 = medium potential, 3 = high potential **➔ Circled BMPs require your immediate attention - see back of this report.**	APPLICABLE ACTIVITY Yes	No	PPD	EFFECTIVENESS RATING*	
A. MINIMUM BMPs - APPLICABLE TO ALL FACILITIES BMPs employed:	[✔]	[ ]	[ ]	① ② ③ ④ ⑤	
B. VEHICLE AND EQUIPMENT FUELING BMPs employed:	[ ]	[ ]	[ ]	① ② ③ ④ ⑤	
C. VEHICLE AND EQUIPMENT WASHING/STEAM CLEANING BMPs employed:	[ ]	[ ]	[ ]	① ② ③ ④ ⑤	
D. VEHICLE AND EQUIPMENT MAINTENANCE AND REPAIR BMPs employed:	[ ]	[ ]	[ ]	① ② ③ ④ ⑤	
E. OUTDOOR LOADING/UNLOADING OF MATERIALS BMPs employed:	[ ]	[ ]	[ ]	① ② ③ ④ ⑤	
F. OUTDOOR PROCESS EQUIPMENT OPERATIONS AND MAINTENANCE BMPs employed:	[ ]	[ ]	[ ]	① ② ③ ④ ⑤	
G. OUTDOOR STORAGE OF RAW MATERIALS/PRODUCTS/CONTAINERS BMPs employed:	[ ]	[ ]	[ ]	① ② ③ ④ ⑤	
H. WASTE HANDLING AND DISPOSAL BMPs employed:	[ ]	[ ]	[ ]	① ② ③ ④ ⑤	
I. CONTAMINATED OR ERODIBLE SURFACE AREAS BMPs employed:	[ ]	[ ]	[ ]	① ② ③ ④ ⑤	
J. BUILDING AND GROUNDS MAINTENANCE BMPs employed:	[ ]	[ ]	[ ]	① ② ③ ④ ⑤	
K. ROOFTOP EQUIPMENT BMPs employed:	[ ]	[ ]	[ ]	① ② ③ ④ ⑤	
L. OUTDOOR DRAINAGE FROM INDOOR AREAS BMPs employed:	[ ]	[ ]	[ ]	① ② ③ ④ ⑤	
M. OTHER (describe):	[ ]	[ ]	[ ]	① ② ③ ④ ⑤	

*① **No BMPs used and stormwater pollution likely** ② **Some BMPs used but not effective** ③ **Some BMPs used and moderately effective**
④ **Source control BMPs used and very effective/structural BMPs needed** ⑤ **All necessary BMPs used and very effective**

This report is **not a citation.** It is furnished to the facility representative to assist in designing and evaluating Best Management Practices to prevent the runoff of pollutants to the storm drainage system. A reinspection of your facility (☐ is required)(☐ is not required) to review correction of deficiencies noted above. Please call ( ) _____ by _____ between 8:00 a.m. to 9:30 a.m. to arrange for a reinspection.

Facility Representative Signature: _____ Date: _____

Print name of Facility Representative: _____ Inspector: _____

40-0056 DPW 10/99

R0001284

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Proposed Agenda
Working Group to Address IC/ID Issues
On
Wednesday, February 28, 2001, 2:00 to 4:00
At the
Regional Board (LA River Conference Room)
320 West 4th Street, Suite 200, LA

1. Introductions, review agenda, etc.

2. Discuss IC/ID element of the SQMP

   - What types of discharges are most problematic? Since implementation of the existing program, how much progress has been made re:
     - Response times to illicit discharges, and elimination?
     - Field surveys of illicit connections?

   - What goals are permittees setting in the proposed IC/ID element for the next 5 years, and how can performance standards be incorporated? E.g.
     - ID response times and reporting?
     - IC field surveys?
       - How much of the storm drain system remains to be completed?
       - Who is responsible for completion of surveys, including any necessary corrective action and enforcement?

3. Discuss exemptions from non-storm water discharges

   - Proposed additions (see attached table).
   - Need for clarification of conditions for those exemptions subject to conditions that were approved by the Executive Officer.
   - Other? E.g. how are permittees dechlorinating swimming pool discharges?

4. Next steps

2/28/01
IC/ID Meeting

1. How many permittees are - today - permitting SD connections?

2. √ #s of ICs -- what is representative of (so)
-- where are problem areas?

3. Clarify Co/muni responsibilities

4. Status of GIS database/capabilities

5. Performance standards or response to ID + mitigation

6. Exempt runoff -- clarify (propose) consistent conditions, subject to EO Approval
include definitions (are needed)

PLEASE S N FOR RECORD OF PARTICIPATION IC/ID 1 eting Informative Mtg Pre Draft Pa A

Location: CRWQCB - REGION 4
JUNIPERO-SERRA BUILDING
320 W. FOURTH STREET, SUITE 200, LOS ANGELES, CA 90013

Date: 2/28/01

PLEASE WRITE LEGIBLY

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R0001287

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Exempted "Non-Storm Water" Discharges

Exemptions to "Non-storm water" Discharge Prohibition Requested in 2001 ROWD	In 1996 permit?	Initial Comment
Categories of **natural flow**, from:		
• Springs	Yes	Ok
• Riparian zones or wetlands	Yes	Ok
• Stream diversions	Yes	But aren't these already covered by water rights permits?
• Rising ground water	Yes	Ok
• Uncontaminated ground water infiltration??	Yes	Not sure what this means.
Categories of **emergency flows**, from:		
• Emergency fire fighting	Yes	Ok
Categories of **flows incidental to urban activities**, from:		
• Landscape irrigation, including irrigation with both:		
– Potable water	Yes – c	Ok
– Reclaimed (recycled) water	No	Ok, with conditions
• Flushing drinking water lines	Yes – c	Ok
• Lake dewatering	No	Needs justification.
• Potable water sources	Yes – c	Ok
• Foundation drains	Yes – c	Passive only, needs conditions.
• Grading drains	No	"
• Footing drains	Yes – c	"
• Crawl space pumps	Yes – c	"
• Emergency floor drains	No	What emergencies? Needs justification.
• Car washing, by:		
– Individuals (residential)	Yes – c	All are ok – but all need conditions
– Non-profit organizations	No	
– Fire fighting vehicles	No	
• Street and sidewalk washing	Yes	Conditions need to be clarified (only City of LA sidewalk washing has been approved to date).
• Air conditioning condensate	Yes – c	Ok
• Dechlorinated swimming pool discharges	Yes – c	Conditions need to be clarified.
• Washing flood and other human tissues at accident sites or accidental spills	No	No – would impact water quality. Can be managed without washdown to storm drain.

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
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HARRY W. STONE, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

February 28, 2001

IN REPLY PLEASE REFER TO FILE. WM-9

Ms. Laura Gentile
United States Environmental
Protection Agency - Region 9
75 Hawthorne Street, WTR-7
San Francisco, CA 94105

6948

Dear Ms. Gentile:

REPORT OF WASTE DISCHARGE FOR MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES IN THE COUNTY OF LOS ANGELES (ORDER NO. 96-054, NPDES NO. CAS614001)

Enclosed is the Report of Waste Discharge for the Los Angeles River, San Gabriel River, Dominguez Channel, Ballona Creek, and Malibu Creek Watersheds in Los Angeles County. The California Regional Water Quality Control Board, Los Angeles Region, (Regional Board) requested that we submit to you a copy of the Report of Waste Discharge for the County of Los Angeles. The original report was submitted to the Regional Board's Executive Officer on January 31, 2001.

If you have any additional questions, please contact Mr. Mustafa Ariki at (626) 458-5948, Monday through Thursday, 7:30 a.m. to 6 p.m.

Very truly yours,

HARRY W. STONE
Director of Public Works

ROD KUBOMOTO
Assistant Deputy Director
Watershed Management Division

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Enc.

cc: All Permittees
Los Angeles Regional Water Quality Control Board

R0001290

LA County MS4 Permit Monitoring Meeting
March 1, 2001 at 1:00 (Library)

1. Brief review of previous storm water monitoring program and its accomplishments over the last 5 years (LA County)

2. Review proposed monitoring program and the basis for the selected activities and parameters (LA County):

   - Landuse monitoring for selected pollutant parameters
   - Mass emission monitoring at Ballona Creek, Malibu Creek, Los Angeles River, and San Gabriel River for selected parameters
   - Plume profile, bioassessment, sediment fate and transport, and storm water toxicity at San Pedro Bay and Santa Monica Bay
   - Wet and dry weather flow toxicity in the Los Angeles River, Coyote Creek, and Dominguez Channel
   - Impact of aerial deposition on inland watersheds
   - Co-participation with the Southern California Coastal Water Research Project pathogen modeling study; and with the Coastal Commission and the U.S. Army Corps to manage contaminated sediments

3. Suggest changes to the next monitoring program and discuss their feasibility, including but not limited to (Regional Board):

   - Implementation of baseline trash monitoring program for watersheds not presently covered under a trash TMDL
   - Evaluation of the effectiveness of structural and treatment control BMPs at critical sources and as watershed improvement projects
   - Submittal of strategies for source ID and reduction of zinc and copper in the Ballona Creek watershed and nutrients in the Malibu watershed, and for pollutants scheduled in respective watersheds for TMDL development within the next 5 years
   - Conduct study to measure the effectiveness of new development and redevelopment standards in improving the quality of storm water discharges

4. Discussion (All)

Outline for Discussion

Purpose: To discuss possible improvements and modifications to the storm water monitoring program that will effectively address deficiencies and advance the program.

1. Mass emissions
   - 4 sites (Malibu, Ballona, Los Angeles, San Gabriel)
   - Need for Dominguez Channel and/or Coyote Creek?
   - deficiencies in Integrated Report

2. Parameters
   - Are proposed minimum required constituents to be analyzed sufficient? See Table 2 in ROWD

3. Land Use Stations
   - Continue land use monitoring, or monitor on a facility scale to focus more on sources? Possibly delay frequency of land use monitoring to include some facility-scale monitoring

4. Frequency of monitoring

5. Critical sources
   - Need for BMP effectiveness evaluation

6. Receiving water impacts
   - Plan for source ID should be included where probably cause exists

7. On-going regional efforts (overview from Mark Gold/John Dorsey)
   - Ventura efforts to study stream erosion impacts from development

LA County Monitoring Meeting Notes (3-1-01)

County Overview:

- County wants to keep same budget as last permit ($3 million for monitoring)
- County said it went over and above permit requirements with toxicity sampling in San Gabriel and LA Rivers, study of El Nino impacts, the GIS loading model and aerial deposition study.

Mass Emissions:

- All agreed that the 5 proposed mass emission stations (Malibu, Ballona, Los Angeles, San Gabriel and Dominguez Channel) will be used.

Parameters:

- It was determined that Detection Limits should be at California Toxic Rule levels, or as close as possible. The Regional Board (RB) will compare the acceptable minimum levels in the State Implementation Policy with the detection limits in the old permit. If the limits are the same for the constituents the County proposes to drop, the RB will consider allowing them to be dropped. However, it was agreed that the entire suite of constituents should be tested for once a year (first storm).

- The County stated that they did not compare the differences in pollutant concentrations in the first storm with other storms, but that they have the data.

Frequency of Monitoring:

- It was agreed that it might not be necessary to monitor 5 storms each season. Definitely the first storm, and 2-4 additional storms each year. No one expressed a strong opinion for the need to sample more than 3 mass emission events per station per year.

- The County is proposing to take 3 dry weather mass emission samples per year to establish a baseline for point source discharges. It was determined that this is not the purpose of the municipal permit. Mark Gold suggested 1 dry weather mass emission sample per year, for source ID purposes.

Land Use Stations:

- The County is proposing to continue stations that don't have enough data to pass the EMC test. Whether or not the land use stations are providing useful information is a question. Once the EMCs are achieved for the remaining stations, scaling down the land use program will be considered. If scaled down, funds will be shifted to another area, such as source ID.

- Significance of data should be reviewed.

Critical Sources:

- County said they found BMP effectiveness only in metal fabrication sites.
- There is need to evaluate BMPs for constituents of concern in a controlled environment.
- Mark Gold suggested that source ID and monitoring is more important that BMP efficacy
- Need for more characterization of critical sources
- Critical source studies should be based on TMDL schedule
- Need watershed wide analyses for sources
- All agreed that the County should develop a monitoring program for water and sediment toxicity in all receiving waters.
    - A simplified, low-tech TIE was suggested.
    - Whether to use freshwater or salt water species is a question (possibly both).
    - It was suggested that sediment samples be taken 3 times during the permit period at the mouth of each receiving water, and tested only for toxicity.
    - Testing the sediment load in storm water samples was also suggested.
    - Requiring regional cooperation on the sediment study was mentioned.

The monitoring plan will be reviewed by the authors of the SCCRWP and SMBRP regional monitoring programs to ensure consistency

The RB stated that a draft monitoring program would be distributed 10 days from the meeting date.

LA COUNTY MS4 MONITORING PROGRAM MEETING 3-1-01

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EXECUTIVE SUMMARY

Since the 1994-95 storm season, the County of Los Angeles Department of Public Works has endeavored to monitor and characterize stormwater water quality under the Los Angeles NPDES Municipal Stormwater Permits. The first two years of monitoring fell under the 1990 Permit, while the current monitoring program is defined in the 1996 Permit. The current monitoring program has consisted of four major elements: Santa Monica Bay receiving water impacts study, mass emission monitoring, land use runoff monitoring, and critical industry monitoring. Other peripheral and supportive studies were conducted since 1996. Those consisted of a study of sampling in wide channels (see Appendix E), a study of the feasibility of sampling storms down to 0.1" rainfall (see Appendix D), an El Niño season supplemental study (see Appendix F), and freshwater toxicity studies on the Los Angeles and San Gabriel Rivers (see Appendix G). In 1999, the County also voluntarily funded half of a study of impacts on stormwater quality from aerial deposition (see Appendix H for progress reports).

HYDROLOGIC CONDITIONS AND SAMPLING SUCCESS

The last six years have experienced a range of climatological events, ranging from the 1997-98 El Niño season (twice the normal annual rainfall) to the 1998-99 La Niña season (less than half the normal annual rainfall). Nevertheless, the County's resourcefulness allowed it to respond to many different and unexpected circumstances as they arose. Since January 1995, 212 mass emission and 396 land use monitoring station events have been sampled. The major objective of runoff characterization of mass emission, land use, and critical industry drainage areas was achieved.

OBJECTIVES ACHIEVED

The goal of the monitoring program has been to provide technical data and information to support effective watershed stormwater quality management programs in Los Angeles County. The monitoring program has been successful in meeting those goals, namely:

- Track Water Quality Status, Pollutant Trends and Pollutant Loads, and Identify Pollutants of Concern

  Water quality status, pollutant trends and loads were successfully addressed by all of the major monitoring program elements: the Santa Monica Bay receiving waters impact study, the mass emission monitoring element, the land use monitoring element, and the critical source monitoring element. The total cost incurred by the monitoring program to date has been more than $4.8 million.

- Monitor and Assess Pollutant Loads from Specific Land Uses and Watershed Areas

  Both the mass emission and land use monitoring elements were successful at assessing loading, and the County's GIS Loading Model has been recognized as an innovative solution to estimating loading in unmonitored watersheds.

- Identify, Monitor, and Assess Significant Water Quality Problems Related to Stormwater Discharges Within the Watershed

  The monitoring program was successful at identifying toxic levels of zinc and copper from Ballona Creek discharge, toxicity in the Los Angeles and San Gabriel Rivers, and the extent and severity of bacterial indicators in both dry and wet weather.

- Identify Sources of Pollutants in Stormwater Runoff

  In addition to the Bay receiving water impacts study's identifying Ballona Ck., and not Malibu Ck., as a contributor of stormwater toxicity, the mass emission monitoring identified the Los Angeles River as consistently contributing the most zinc, copper, and suspended solids. The land use monitoring identified light industrial, transportation, and retail/commercial land uses as developing the highest median concentrations for total and dissolved zinc. Light industrial and transportation land uses displayed the highest median concentrations for total and dissolved copper, and light industrial produced the highest concentrations of suspended solids. Finally, the critical source monitoring program identified fabricated metal businesses as producing the highest median concentrations for zinc, copper, and suspended solids.

- Identify and Eliminate Illicit Discharges

  Each Permittee has a program to identify and eliminate illicit connections to the storm drain system to the maximum extent practicable. The County has been successful in the inspection of open channels and underground storm drains to identify illicit connections.

  Most Permittees perform random area surveillance during dry and wet weather to inspect for potential illegal discharges. The Permittees also conduct educational site visits at businesses. During these visits, flyers with information on Best Management Practices (BMPs) applicable to that business are distributed.

  The Department has also been successful in developing and implementing a standard program for public reporting of illicit discharges and reporting hazardous substances via the 1-888-CleanLA hotline.

- Evaluate the Effectiveness of Management Programs, including Pollutant Reductions Achieved by Implementation of Best Management Practices (BMPs)

  The Critical Source element of the monitoring program was successful at examining the potential effectiveness of voluntary good housekeeping and preventive types of Best Management Practices at one critical source industry. There was no significant difference at other critical source industries at which BMPs were implemented. The inability to control the voluntary usage of good housekeeping BMPs at these critical industries may have compromized the study's effectiveness for those industries.

- Assess the Impacts of Stormwater Runoff on Receiving Waters

  The receiving waters impact study, one of the first in the nation to assess stormwater impacts on the marine environment, was very successful at assessing stormwater impacts on Santa Monica Bay. The study was able to discern the existence and extent of the stormwater plume in the Bay, identify two trace metals in Ballona Creek. stormwater discharge that are toxic to simple sea creatures, and conclude that sediments offshore of Ballona Creek generally had higher concentrations of urban contaminants. The findings related to toxicity and sediments, along with bacterial indicators, set the stage for the rest of this report.

WATER QUALITY CHEMICAL ANALYSES

Monitoring in Los Angeles county from 1994 to date has been performed in compliance with the Municipal Stormwater Permits of June, 1990, and July, 1996, which have required a broad suite of chemical analyses, including solids, minerals, bacteria, metals, organics, and nutrients. The Los Angeles county Department of Agricultural Commissioner/Weights and Measures, Environmental toxicology Laboratory, provided the water quality laboratory and related services to the Department of Public works. The laboratory implemented a Quality Assurance/Quality Control program to ensure that the analyses conducted were scientifically valid, defensible, and of known precision and accuracy.

WATER AND SEDIMENT QUALITY RESULTS

Conclusions on the status and trends of water quality over the past six years have been derived from the monitoring program's Santa Monica Bay receiving waters impact study, mass emissions monitoring element, land use runoff monitoring element, and critical industry monitoring element. Findings regarding sediment quality were derived from the Santa Monica Bay receiving waters impact study and the County's involvement with the California Sediment Task Force and the Corps of Engineers' Sediment Control Management Plan.

- The nonprofit Center for Watershed Protection has linked overall watershed imperviousness to stormwater quality problems. The Dominguez Channel/L. A. Harbor Watershed Management Area has the highest overall imperviousness (62%) based on 1993 SCAG land use distribution, followed by the Ballona Creek (45%), Los Angeles River (35%), San Gabriel River (30%), Malibu Creek (6%), and Santa Clara River (5%) Watershed Management Areas.

- The monitoring program has identified the nearly ubiquitous existence of indicator bacteria in both dry and wet weather throughout the urbanized part of the coastal basin. Total coliforms, fecal coliforms, fecal streptococcus, and fecal enterococcus were detected in all stormwater samples tested since 1994 at densities (or most probable number, MPN) between several hundreds to several million cells per 100 ml., exceeding the public health criteria of AB411.

- The Malibu Creek station appears to have consistently lower indicator bacteria counts than other mass emission stations and is consistently lower for all four groups of bacteria.

- The 1995-96 season appears to have higher mean densities of indicator bacteria than other years. At 75% of normal, this was not a particularly rainy season.

- In a number of instances, peak fecal coliform counts occurred at different monitoring stations in different parts of the county during the same storm. Further, in 1995-96, the highest fecal coliform readings at five stations coincided with the largest storm of the season. Also, in 1996-97, the highest fecal coliform readings at two stations coincided with the first storm of the season greater than 0.1" rainfall. These observations suggest that peak fecal coliform levels may be related to regional hydrologic conditions.

- Except for somewhat lower bacteria densities at Malibu Creek, there was no seasonal or regional consistency in cell densities. There was a very wide range of densities for all stations.

- There was one storm event, January 9, 1998, that yielded extremely high counts in all stations for all bacterial strains. The available data do not provide an explanation, or suggest whether this could be a contamination artifact.

- The 1996-97 season had one event, November 21, 1996, that yielded runoff with high counts in all stations for all bacteria species.

- During the 1998-99 season, the event of March 15, 1999 was associated with high bacterial counts for most stations and the events of March 25, 1999 and April 4, 1999, were associated with unusually low counts for most stations.

- Virtually every sample of Ballona Creek stormwater tested in the Santa Monica Bay receiving water impacts study was toxic to sea urchin fertilization.

- The first storms of the year produced the most toxic stormwater in Santa Monica Bay during the receiving water impacts study.

- The toxic portions of the observed stormwater plume were variable in size, extending from 1/4 to 2 miles offshore of Ballona Creek.

- Surface water toxicity caused by unidentified sources was frequently encountered during dry weather in Santa Monica Bay during the receiving water impacts study.

- Zinc was the most important toxic constituent identified in stormwater in Santa Monica Bay, but zinc concentrations in the toxic portion of the discharge plume were usually below levels shown to cause toxicity in the laboratory.

- Copper and other unidentified constituents may also be responsible for some of the toxicity measured in Santa Monica Bay.

- The measured concentrations of zinc and copper in Ballona Creek stormwater were estimated to account for only 5% - 44% of the observed toxicity.

- The fate of most stormwater constituents discharged to Santa Monica Bay is unknown.

- For two years in a row, wet weather toxicity was significant in the Los Angeles River. Dry weather toxicity was significant the second year, but not the first.

- For the San Gabriel River, wet weather toxicity was significant the first year, but not the second. Dry weather toxicity was not significant either year.

- For both the Los Angeles and San Gabriel Rivers, wet weather toxicity was higher for the first storm tested, suggesting a seasonal "first flush" phenomenon for toxicity.

- The sea floor is where stormwater particles, and associated contaminants, eventually settle.

- The sediments on the sea floor can accumulate runoff inputs over an entire storm, over several storms, or over several seasons.

- Sediments offshore of Ballona Creek generally had higher concentrations of urban contaminants, including common stormwater constituents such as lead and zinc.

- Sediments offshore of Ballona Creek showed evidence of stormwater impacts over a large area.

- Sampled biological communities offshore of Ballona Creek were similar to those offshore of Malibu Creek. Both areas had comparable abundance and similar species composition.

- Sampled biological communities offshore of Ballona and Malibu Creeks were also similar to background reference conditions established in previous studies of southern California.

- According to the Los Angeles Basin Contaminated Sediment Task Force, informal surveys of potential marina and harbor users and past dredging projects suggest that the major sources of contaminated dredge material will continue to be Marina del Rey, the ports of Los Angeles and Long Beach, and the mouth of the Los Angeles River.

- According to the Los Angeles Basin Contaminated Sediment Task Force, some of the sediments dredged from these harbors contain elevated levels of heavy metals, pesticides, and other contaminants. In most cases, the concentrations of these contaminants do not approach hazardous levels.

- According to the U. S. Army Corps of Engineers, four of 21 sites in the bottom of Ballona Creek and major tributaries were without any chemical concentration exceeding the National Oceanographic and Atmospheric Administration's "Effect Range-Low" (ERL) values: storm drain Bond Issue Project 9408, Project 425, Ballona Creek at Sawtelle Blvd., and Centinela Channel.

- According to the U. S. Army Corps of Engineers, sediments on the bottoms of storm drain Bond Issue Projects 648, 51, 494, and 503 ranked by dry weight most consistently as the most contaminated sites with respect to metals and polycyclic aromatic hydrocarbons (PAHs).

- According to the U. S. Army Corps of Engineers, the two areas of the main Ballona Ck. channel that ranked by dry weight as most contaminated and exceeding ERLs were just downstream of Madison Ave. and Fairfax Ave.

- According to the U. S. Army Corps of Engineers, with respect to the potential for contamination from PAHs, sites in Ballona Ck. at Pickford St. and Fairfax Ave., Higuera St. drain, Projects 51 and 3867, and Culver City Acquisition and Improvement District No. 4 drain appeared most contaminated.

- According to the U. S. Army Corps of Engineers, bed load sediment in the major tributary drains of Sepulveda and Centinela Channels were among the least contaminated samples.

- According to the U. S. Army Corps of Engineers, the area within the Ballona Ck. drainage area having expected highest stormwater loading of metals, oil, and grease extends from Hollywood to Culver City in a 1- to 2-mile wide, 5- to 6-mile long strip parallel and east of the San Diego (I-405) Freeway.

- Only two PAH compounds, phenanthrene and pyrene, exceeded the California Ocean Plan objective. This occurred at the Malibu Creek station. No other PAH compound exceedences appeared through the comparison of mass emission concentrations to the California Ocean Plan, although 1999-2000 was the first year of lower detection limits for PAHs.

- The Los Angeles River is the largest contributor of suspended solids of the five mass emission stations monitored.

- After exceedence of bacterial indicators, when compared to the California Ocean Plan, the Los Angeles Basin Plan, and the California Toxics Rule, the next most numerous "virtual" exceedences occurred with total and dissolved copper and bis(2-ethylhexyl)phthalate, followed by turbidity, total zinc, and total lead.

- The El Niño season, 1997-98, contributed the most virtual mass emission exceedences at all monitoring stations except Coyote Creek.

- The Los Angeles River produced the most virtual exceedences of any other mass emission monitoring station.

- Loading to the ocean was greatest during 1997-98, the El Niño season, during which the Los Angeles River delivered the highest loadings of total suspended solids (approx. 220,000 tons), dissolved copper (approx. 28 tons), total copper (approx. 40 tons), dissolved zinc (approx. 170 tons), and total zinc (approx. 230 tons).

- It appears that Los Angeles River loading for metals is disproportionate by drainage area to the other watersheds.

- According to the GIS Loading Model, the unmonitored Dominguez Channel/L. A. Harbor Watershed Management Area was estimated to contribute the highest loadings for dissolved zinc (approx. 2.3 tons) and dissolved copper (approx. 30 tons) and contribute the highest loadings of the unmonitored watersheds for each year since 1995. Comparison of loadings between monitored and unmonitored watersheds should not be made at this time because the model is not yet fully calibrated.

CONSTITUENTS OF CONCERN

- Sixteen chemical constituents were identified from the comparison of mass emission annual concentrations to the objectives of the California Ocean Plan, the Los Angeles Basin Plan, and the California Toxics Rule. Exceedence of these objectives, however, do not constitute noncompliance with the Permit.

- While Total Maximum Daily Loads (TMDLs) are not part of the Los Angeles Municipal Stormwater Permit, constituents identified by the 303d list that were not already identified through the comparison process, namely nutrients, are also constituents of concern. It should be noted, however, that a report by the Las Virgenes Municipal Water District found that beneficial use impairment due to algal growth is not a problem in Malibu Creek during storm season.

- Two organophosphate pesticides, diazinon and chlorpyrifos, are also among the constituents of concern due to their identification with stormwater toxicity in independent studies.

- Indicator bacteria (total coliform and fecal coliform, streptococcus, and enterococcus) are included as constituents of concern due their exceedence of AB411 (assembly bill).

IDENTIFICATION OF POSSIBLE SOURCES

- Light industrial, transportation, and retail/commercial land uses displayed the highest median values for total and dissolved zinc, with light industrial the highest at about 300 • g/l for

dissolved zinc and about 360 • g/l for total zinc. Runoff concentrations for metals from the high density single family residential, education, multifamily residential, and mixed residential land uses were significantly less.

- Light industrial and transportation land uses displayed the highest median values for total and dissolved copper, with transportation the highest at about 28 • g/l for dissolved copper and about 40 • g/l for total copper.

- Median concentrations of total suspended solids were highest coming off of the light industrial land use category, at about 130 mg/l.

- Among all the critical industry monitoring sites, the highest median value for total zinc (approx. 450 • g/l), dissolved zinc (approx. 360 • g/l), total copper (approx. 240 • g/l), and dissolved copper (approx. 110 • g/l) were produced at the fabricated metal business sites.

- Levels for total and dissolved zinc did not appear to be significantly different between any of the industry types.

- Levels for total and dissolved copper did appear significantly higher for the fabricated metals sites over the other critical industry categories.

- The highest median level for suspended solids was also produced at the fabricated metals sites, but no industry was significantly higher or lower than another for suspended solids.

EVALUATION OF CRITICAL INDUSTRY BMP EFFECTIVENESS

- Limited success was achieved in evaluating BMPs for the auto dismantling and auto repair industries. The reasons for no discernable differences in concentrations before and after BMP implementation at the two industries are not obvious, but may include the voluntary nature of the BMP usage.

- For total and dissolved zinc, the median concentration lowered or stayed nearly the same with the implementation of BMPs at the auto dismantling, auto repair, and fabricated metals industries.

- For total and dissolved copper, where the fabricated metal industry had displayed the highest median concentrations, levels were significantly reduced with the implementation of BMPs.

- The auto dismantling and auto repair businesses showed no significant difference for copper pre- and post-BMP.

RECOMMENDATIONS

The following recommendations are made based on all the monitoring and studies to date, from within the Los Angeles County Department of Public Works and other sources. These recommendations include monitoring, research, and studies that should be considered or undertaken to advance the understanding of stormwater quality science and support future TMDL development. Because of their scope, such studies should be undertaken by various entities, such as the Regional Water Quality Control Board, NPDES permittees, or collaborative efforts between private and public organizations.

- Mass emission monitoring should continue at the five existing sites for up to five storm events per season.

- Those constituents that have been detected in less than 25% of ten consecutive sampling events (Table ES-1a) should be removed from the analytical suite for the associated mass emission monitoring stations. However, the constituents of concern should remain.

- As a result of the 25% Event (or Seasonal) Mean Concentration error rate (Table ES-1b), land use monitoring should only sample the following constituents:

LAND USE SITE	CONSTITUENTS
Retail/Commercial	Ammonia, total and dissolved copper, nitrate, total lead, TSS, PAH, diazinon, chlorpyrifos
Vacant	TKN, TSS, PAH, diazinon, chlorpyrifos
High Density Single Family Residential	Total lead, PAH, diazinon, chlorpyrifos
Transportation	PAH, diazinon, chlorpyrifos
Light Industrial	Total copper, PAH, diazinon, chlorpyrifos
Education	Total copper, total zinc, TSS, PAH, diazinon, chlorpyrifos
Multifamily Residential	Ammonia, ammonia nitrogen, nitrite nitrogen, TSS, PAH, diazinon, chlorpyrifos
Mixed Residential	Ammonia, nitrate, total zinc, PAH, diazinon, chlorpyrifos

- Receiving water impact studies should be performed on significant impaired water bodies to identify impacts due to stormwater. Such impact studies could include assessments of bioassessment.

- Support and cooperation should continue with the Southern California Coastal Waters Research Project in conducting current research and calibrating water quality models for the Santa Monica Bay and Los Angeles River.

- Similar water quality models should be initiated for other parts of the County where indicator bacteria impair beneficial uses.

- Support and cooperation should continue with the Corps of Engineers' Sediment Control Management Plan and the Coastal Commission Sediment Task Force.

- Studies of receiving water and stormwater impacts due to aerial deposition should be conducted on inland watersheds.

- Major tributaries to Ballona Creek should be surveyed to find possible contributing areas and sources of trace zinc and copper.

- Two dry weather and two wet weather Toxicity Identification Evaluations should be conducted for a full range of constituents on freshwater species for the L. A. River and Dominguez Channel.

- Two wet weather Toxicity Identification Evaluations should be conducted for a full range of constituents on freshwater species for the San Gabriel River.

- Follow-up studies should be conducted in Santa Monica Bay that address the persistence of stormwater plumes following storm events, the toxicity of stormwater on other representative species, and the fate of sediments in the Bay.

- A study should be conducted assessing the impacts due to stormwater on San Pedro Bay.

- Support and cooperation should continue toward local and regional monitoring programs, including but not limited to the Santa Monica Bay Restoration Project, the City of Long Beach, and the developing Southern California Regional Stormwater Monitoring Coalition.

- Best Management Practices and impacts should be formally evaluated in controlled cases. Current examples might include the City of Santa Clarita demonstration projects, catch basin inserts and deflectors, groundwater impacts due to stormwater infiltration, the Department of Public Works' parking lot retrofit, and storm drain low flow diversions.

- Continue the IC/ID model program as approved by the Regional Board on March 23, 1999.

- Calibrate the GIS Loading Model between monitored and unmonitored watersheds.

Table ES-1a. 1994-2000 Mass Emission Constituent Detection Rates

	Ballona Creek	Malibu Creek	Los Angeles River	Coyote Creek	San Gabriel River
Miscellaneous Constituents					
Cyanide*	X	X	X	&	X
TPH	X	X	-	&	X
Oil and Grease	X	X	-	&	X
Total Phenols	X	X	X	&	X
Indicator Bacteria*	-	-	-	&	-
General Minerals					
Ammonia	-	X	-	-	X
Calcium	-	-	-	-	-
Magnesium	-	-	-	-	-
Potassium	-	-	-	-	-
Sodium	-	-	-	-	-
Bicarbonate	-	-	-	-	-
Carbonate	X	X	X	X	X
Chloride	-	-	-	-	-
Flouride	-	-	-	-	-
Nitrate	-	-	-	-	-
Sulfate	-	-	-	-	-
Alkalinity	-	-	-	-	-
Hardness	-	-	-	-	-
COD	-	-	-	-	-
pH	-	-	-	-	-
Specific Conductance	-	-	-	-	-
Total Dissolved Solids*	-	-	-	-	-
Turbidity*	-	-	-	-	-
Total Suspended Solids*	-	-	-	-	-
Volatile Suspended Solids	-	-	-	-	-
MBAS	-	X	X	X	X
Total Organic Carbon	-	-	-	-	-
BOD	-	-	-	-	-
Nutrients					
Dissolved Phosphorus*	-	-	-	-	-
Total Phosphorus*	-	-	-	-	-
NH3-N*	-	X	X	-	X
Nitrate-N*	-	-	-	-	-
Nitrite-N*	-	X	-	-	-
TKN*	-	-	-	-	-
Metals					
Dissolved Aluminum	X	X	-	X	X
Total Aluminum*	-	-	-	-	-
Dissolved Antimony	X	X	X	X	X
Total Antimony	X	X	X	X	X
Dissolved Arsenic	X	X	X	X	X
Total Arsenic	X	X	X	X	X
Dissolved Barium	-	-	-	-	-
Total Barium	-	-	-	-	-
Dissolved Beryllium	X	X	X	X	X
Total Beryllium	X	X	X	X	X
Dissolved Boron	-	-	-	-	-
Total Boron	-	-	-	-	-
Dissolved Cadmium*	X	X	X	X	X
Total Cadmium	X	X	X	X	X
Dissolved Chromium	X	X	X	X	X
Total Chromium	X	X	X	X	X
Dissolved Chromium +6	X	X	X	X	X
Total Chromium +6	X	X	X	X	X
Dissolved Copper*	-	X	-	-	X

Table ES-1a. 1994-2000 Mass Emission Constituent Detection Rates

	Ballona Creek	Malibu Creek	Los Angeles River	Coyote Creek	San Gabriel River
Total Copper*	-	-	-	-	-
Dissolved Iron	X	X	-	-	X
Total Iron	-	-	-	-	-
Dissolved Lead*	X	X	X	X	X
Total Lead*	X	X	-	X	X
Dissolved Manganese	X	X	X	X	X
Total Manganese	X	X	X	X	X
Dissolved Mercury	X	X	X	X	X
Total Mercury*	X	X	X	X	X
Dissolved Nickel*	X	X	-	X	X
Total Nickel*	-	-	-	-	X
Dissolved Selenium	X	X	X	X	X
Total Selenium	X	X	X	X	X
Dissolved Silver	X	X	X	X	X
Total Silver	X	X	X	X	X
Dissolved Thallium	X	X	X	X	X
Total Thallium	X	X	X	X	X
Dissolved Zinc*	X	X	X	X	X
Total Zinc*	-	X	-	X	X
SVOCs					
Bis(2-ethylhexyl)phthalate*	&	&	&	&	&
PAHs					
Phenanthrene*	&	&	&	&	&
Pyrene*	&	&	&	&	&
All other PAHs	&	&	&	&	&
All other SVOCs	X	X	X	X	X
Pesticides					
Organochlorine Pesticides & PCBs	X	X	X	X	X
Carbofuran	X	X	X	X	X
Glyphosate	X	X	X	X	X
Organo-Phosphate Pesticides					
Diazinon*	X	X	X	X	X
Chlorpyrifos*	X	X	X	X	X
N- and P-Containing Pesticides					
Thiobencarb	X	X	X	X	X
All other N- and P- Pesticieds	X	X	X	X	X
Phenoxyacetic Acid Herbicides					
2,4-D	X	X	X	X	X
2,4,5-TP	X	X	X	X	X
Bentazon	X	X	X	X	X

X = less than 25% detection in ten consecutive samples

- = more than 25% detection in ten consecutive samples

& = less than 10 samples tested

* Constituent of concern

Table ES-1b. 1994-2000 Land Use Constituent Detection Rates

	Commercial	Vacant	High Density Single Family Residential	Trans-portation	Light Industrial	Educational	Multi-Family Residential	Mixed Residential
Miscellaneous Constituents								
Cyanide*	&	X	&	&	&	&	&	&
TPH	&	X	&	&	&	&	&	&
Oil and Grease	&	X	&	&	&	&	&	&
Total Phenols	&	X	&	&	&	&	&	&
Indicator Bacteria*	&	-	&	&	&	&	&	&
General Minerals								
Ammonia	-	X	-	-	-	X	-	-
Calcium	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-
Bicarbonate	-	-	-	-	-	-	-	-
Carbonate	X	X	X	X	X	X	X	X
Chloride	-	-	-	-	-	-	-	-
Flouride	X	-	X	X	X	X	X	X
Nitrate	-	-	-	-	-	-	-	-
Sulfate	-	-	-	-	-	-	-	-
Alkalinity	-	-	-	-	-	-	-	-
Hardness	-	-	-	-	-	-	-	-
COD	-	X	-	-	-	-	-	-
pH	-	-	-	-	-	-	-	-
Specific Conductance	-	-	-	-	-	-	-	-
Total Dissolved Solids*	-	-	-	-	-	-	-	-
Turbidity*	-	-	-	-	-	-	-	-
Total Suspended Solids*	-	-	-	-	-	-	-	-
Volatile Suspended Solids	-	-	-	-	-	-	-	-
MBAS	X	X	X	X	-	X	X	X
Total Organic Carbon	-	-	-	-	-	-	-	-
BOD	-	-	-	-	-	-	-	-
Nutrients								
Dissolved Phosphorus*	-	X	-	-	-	-	-	-
Total Phosphorus*	-	X	-	-	-	-	-	-
NH3-N*	-	X	-	-	-	X	-	-
Nitrate-N*	-	-	-	X	-	X	X	X
Nitrite-N*	-	X	-	-	-	X	-	-
TKN*	-	-	-	-	-	-	-	-
Metals								
Dissolved Aluminum	X	X	X	X	X	-	X	X
Total Aluminum*	X	X	-	X	-	-	-	-
Dissolved Antimony	X	X	X	X	X	X	X	X
Total Antimony	X	X	X	X	X	X	X	X
Dissolved Arsenic	X	X	X	X	X	X	X	X
Total Arsenic	X	X	X	X	X	X	X	X
Dissolved Barium	-	-	-	-	-	-	-	-
Total Barium	-	-	-	-	-	-	-	-
Dissolved Beryllium	X	X	X	X	X	X	X	X
Total Beryllium	X	X	X	X	X	X	X	X
Dissolved Boron	-	X	X	-	X	-	-	X
Total Boron	-	-	-	-	-	-	-	X
Dissolved Cadmium*	X	X	X	X	X	X	X	X
Total Cadmium	X	X	X	X	X	X	X	X
Dissolved Chromium	X	X	X	X	X	X	X	X
Total Chromium	X	X	X	X	X	X	X	X

5.1 OBJECTIVES ACHIEVED

Since 1994, the goal of the Monitoring Program has been to develop information to support effective watershed stormwater quality management programs. The primary objectives of the Monitoring Program, as outlined in the Permit and Section 1 of this report, follow.

5.1.1 Track Water Quality Status, Pollutant Trends and Pollutant Loads, and Identify Pollutants of Concern

Water quality status and pollutant trends and loads were successfully addressed by all of the major monitoring program elements: the Santa Monica Bay receiving waters impact study, the mass emission monitoring element, the land use monitoring element, and the critical source monitoring element.

The Santa Monica Bay receiving waters impact study extended from the 1996-97 through the 1998-99 storm seasons and focused on discharge from Ballona and Malibu Creeks.

The five mass emission stations located on major tributaries to the Pacific Ocean sampled runoff from 1220 of 2086 square miles of the Los Angeles coastal basin. The only major watershed not monitored for mass emissions was the largely undeveloped Santa Clara River watershed in the northwest part of the permit area. The mass emission data was also used to identify pollutants of concern and to calculate seasonal loads. Since January 1995, 212 station events have been sampled. Generally, sampling activities were conducted according to plan, and attempts were made to capture as many storms as possible. Initial mechanical difficulties with the sampling equipment were overcome over the years of use.

The siting of these stations was dictated in large part by accessibility and the availability of public right of way. All five mass emission stations were set up in existing Department of Public Works stream gauge shelters. Two of the mass emission stations, Ballona Creek and Malibu Creek, have the longest record, sampling since January 1995, and the balance of the mass emission stations have been sampling since the 1995-96 storm season. The automated equipment also provided the collection of flow-weighted composite samples, which reflect and allow for varying constituent concentrations throughout the storm event.

The sampling of runoff from land use specific drainage areas also began in January 1995 with the installation of automated equipment in the Santa Monica Pier drain (retail/commercial). By the 1995-96 season, four more of the current land use monitoring stations were installed (high density SFR, vacant, light industrial, and transportation). When the current permit came into effect in July, 1996, two more land use stations were installed (multifamily residential and educational). The final land use monitoring station (mixed residential) was installed by the 1997-98 storm season. Similar flow-weighted compositing was accomplished through the use of automated equipment for sampling runoff from land use-specific drainage areas.

In contrast to the mass emission stations, land use monitoring stations are largely located in underground drains. Their siting was therefore more complicated, requiring the identification of locations where the drainage area was the predominant land use, where there was a manhole near available power in available right-of-way, where the drain was not surcharged in a moderate storm, and where personnel would be relatively safe. Since 1995, 396 station events have been sampled.

The land use monitoring was successful at characterizing runoff from land use specific drainage areas and developing seasonal mean concentrations. Seasonal mean concentrations (also called Event Mean Concentrations) were used for calculating loading from unmonitored watersheds. It was found that seasonal mean concentrations were below the 25% error rate in 77% of circumstances.

Monitoring at the land use stations and mass emission stations included a broad constituent suite including bacteria, metals, organics, major ions, and nutrients. The laboratory analytical efforts achieved detection limits (DL) as required by the Permit for all constituents, and achieved DLs that were lower than Permit requirements for many analytes, particularly for constituents of concern.

5.1.2 Monitor and Assess Pollutant Loads from Specific Land Uses and Watershed Areas

The mass emission and land use monitoring elements were successful at assessing loading. Loading was first reported in the 1994-95 Los Angeles County Stormwater Monitoring Report. Subsequent loading based on both observed and modeled data was also reported in the 1998-99 and 1999-2000 Reports. The County's GIS Loading Model has been recognized as an innovative solution to estimating loading in unmonitored watersheds.

5.1.3 Identify, Monitor, and Assess Significant Water Quality Problems Related to Stormwater Discharges Within the Watershed

The monitoring program was successful at identifying significant water quality problems associated with stormwater discharge. First, the Santa Monica Bay receiving waters impacts study identified zinc and copper from Ballona Creek discharge as being toxic to the fertilization rate of simple marine animals. Toxicity testing of dry and wet weather flow in the Los Angeles and San Gabriel Rivers also identified toxicity problems. The extent and severity of bacterial indicators was better understood through wet weather mass emission sampling and ad hoc dry weather sampling.

5.1.4 Identify Sources of Pollutants in Stormwater Runoff

All of the major monitoring program elements were used successfully to identify stormwater pollutant sources. The Santa Monica Bay receiving waters study identified Ballona Ck., and not Malibu Ck., as a contributor of stormwater toxicity. Further, it identified zinc and copper as two metals contributing to the toxicity. The mass emission monitoring identified the Los Angeles River as consistently contributing the most zinc, copper, and suspended solids.

The land use monitoring identified light industrial, transportation, and retail/commercial land uses as developing the highest median concentrations for total and dissolved zinc. Light industrial and transportation land uses displayed the highest median concentrations for total and dissolved copper, and light industrial produced the highest concentrations of suspended solids.

Finally, the critical source monitoring program identified fabricated metal businesses as producing the highest median concentrations for zinc, copper, and suspended solids.

5.1.5 Identify and Eliminate Illicit Discharges

Each Permittee has a program to identify and eliminate illicit connections to the storm drain system to the maximum extent practicable. One of the programs developed for the elimination of illicit connections is open channel and underground storm drain inspections.

Most Permittees perform random area surveillance during dry and wet weather to inspect for potential illegal discharges. The Permittees also conduct educational site visits at businesses. During these visits, flyers with information on Best Management Practices (BMPs) applicable to that business are distributed.

The County, maintaining the majority of the storm drains within Los Angeles County, conducts routine inspections of the storm drain system for illicit connections/illicit discharges. Maps and connection inventory reports for 1,304 storm drains have been prepared to facilitate these inspections, which have resulted in the discovery of 1,993 undocumented connections as of July of 1999. These connections are either removed or permitted.

A toll free number 1-888-CleanLA was created for the public to report observed illicit connections/illicit discharges to the storm drain system.

It is recommended that the IC/ID model program approved by the Regional Board on March 23, 1999, be continued.

5.1.6 Evaluate the Effectiveness of Management Programs including Pollutant Reductions Achieved by Implementation of Best Management Practices (BMPs)

The Critical Source element of the monitoring program was successful at examining the potential effectiveness of good housekeeping and preventive types of voluntary Best Management Practices at one critical source industry. While two of the industries showed no significant improvement as the result of implementing BMPs, the fabricated metal industry showed significant improvement for total and dissolved copper.

5.1.7 Assess the Impacts of Stormwater Runoff on Receiving Waters

The receiving waters impact study, one of the first to assess stormwater impacts on the marine environment, was very successful at assessing stormwater impacts on Santa Monica Bay. The study was performed by the Southern California Coastal Waters Research Project, the University of Southern California, and the University of California Santa Barbara. The plume study found that freshwater plumes extended for a number of miles out to sea and often persisted for a number of days after a storm. The toxicity study found that the stormwater discharge from Ballona Creek was toxic to sea urchin fertilization and that dissolved zinc and copper were contributors to the toxicity. The study also found that sediments offshore of Ballona Creek generally had higher concentrations of urban contaminants, including common stormwater constituents such as lead and zinc.

5.2 WIDE CHANNEL PILOT STUDY

The purpose of the wide channel pilot study (Woodward-Clyde et al, 1996) was to evaluate the accuracy of a single point water quality intake in representing the water quality in wide channels. Ballona Creek, Los Angeles River, San Gabriel River, and Coyote Creek can be considered wide

channels. The pilot study found the water homogenous through the depth and the width of the channel. Thus, the single point intake produces a representative sample, and no adjustments were made to the monitoring stations. A complete report of this pilot study may be found in Appendix E.

Additional analysis was conducted in 1998 confirming that vertical mixing was achieved.

5.3 LOW FLOW PILOT STUDY

The purpose of the low flow pilot study (Woodward-Clyde et al, 1996) was to assess the feasibility of modifying the automated sampling equipment at land use stations in order to sample storms as small as 0.1 inch rainfall. The pilot study concluded that: operational effectiveness of automated equipment dropped significantly for storms as low as 0.1" rainfall, the feasibility and effectiveness of sample retrieval and transport became very difficult for such storms, and the ability to program and maintain low flow settings at other automated samplers could only be accomplished through large investments in telemetry. A complete report of this pilot study may be found in Appendix D.

Further analysis was conducted in 1998 that concluded 94 percent of total runoff volumes are monitored using the 0.25 inch threshold. Therefore, monitoring continued unaltered.

5.4 FUTURE MONITORING RECOMMENDATIONS

The following recommendations include monitoring, research, and studies that should be considered or undertaken to advance the understanding of stormwater quality science and support future TMDL development. Because of their scope, such studies should be undertaken by various entities, such as the Regional Water Quality Control Board, NPDES permittees, or by collaborative efforts between private and public organizations.

5.4.1 Mass Emission Element

Because the Pacific Ocean is a primary resource to Southern California, it is recommended that mass emission monitoring continue at the five existing sites for up to five storm events per season.

Non-Detection Test: The Permit states that if a given constituent is not detected in at least 25% of the samples taken in ten consecutive storm events at a given station, then that constituent may qualify for removal from the analytical suite for the associated station. For mass emission stations, several constituents met this criterion (see Table 4-7). Carbonate, the majority of heavy metals (24 of the 38), and all of the pesticides met the criteria in each of the mass emission sites. All of the semi-volatile constituents that had more than 10 samples met the criteria in each mass emission site as well. (Due to the change in detection limits of many SVOCs, there were fewer than 10 samples tested under the new limit.) Cyanide, total phenols, MBAS, dissolved aluminum, dissolved nickel, and total lead had less than 25% detection in four of the five sites. It is recommended that these constituents be removed from the analytical suite for the associated stations.

5.4.2 Land Use Element

One of the goals of the land use monitoring element was to develop Event Mean Concentrations (EMCs) for constituents of concern. The EMCs are used in the County's GIS Loading Model to calculate seasonal loading from unmonitored watersheds.

EMC Test: The Permit allows the discontinuation of monitoring at a land use station for specific constituents once the event mean concentration (EMC) is derived with an error rate of 25% or less. We used the mean standard error as a substitute for error rate as mutually agreed upon with the RWQCB (Swamikannu, 1999). Nitrate-Nitrogen achieved the 25% error rate at each of the land use monitoring sites. Total kjeldahl nitrogen (TKN) and total phosphorus met the criteria at seven of the eight land use sites. Dissolved copper, total zinc, dissolved zinc, ammonia-nitrogen, nitrate, and dissolved phosphorus met the criteria at six of the eight sites.

Of 115 station-constituents under investigation, 26 of them had an EMC with a mean standard error higher than 25% (Table 4-14). In other words, there were 26 station-constituents which had a standard error (standard deviation of the mean) larger than 25% of their corresponding mean concentrations. Carbonate, the majority of heavy metals (24 of the 38), and all of the pesticides met the criteria in each of the land use sites. All of the semi-volatile constituents that had more than 10 samples met the criteria in each land use site as well. (Due to the change in detection limits of many SVOCs, there were fewer than 10 samples tested under the new limit.) Flouride, MBAS, dissolved aluminum, and total lead had less than 25% detection in seven of the eight sites.

Given the findings of both the non-detect test and the EMC test, it is recommended that the following land use stations monitor the following constituents only:

Constituents for Future Land Use Monitoring

LAND USE STATION	DRAINAGE SYSTEM	FUTURE MONITORING
Retail/Commercial	Santa Monica Pier Drain	Ammonia, total and dissolved copper, nitrate, total lead, TSS, PAH, diazinon, chlorpyrifos.
Vacant	Sawpit Wash	TKN, TSS, PAH, diazinon, chlorpyrifos.
High Density Single Family Residential	Bond Issue Project 620	Total Lead, PAH, diazinon, chlorpyrifos.
Transportation	Dominguez Channel	PAH, diazinon, chlorpyrifos.
Light Industrial	Bond Issue Project 1202	Total Copper, PAH, diazinon, chlorpyrifos.
Education	Bond Issue Project 474	Total Copper, Total Zinc, TSS, PAH, diazinon, chlorpyrifos.
Multifamily Residential	Bond Issue Project 404	Ammonia, Ammonia Nitrogen, Nitrite Nitrogen, TSS, PAH, diazinon, chlorpyrifos.
Mixed Residential	Bond Issue Project 156	Ammonia, Nitrate, Total Zinc, PAH, diazinon, chlorpyrifos.

Note that the retail/commercial site was removed in 1999 for construction of the City of Santa Monica's stormwater treatment plant. Future monitoring at this site may be in jeopardy.

5.4.3 Critical Source Element

Limited success was achieved in evaluating BMP effectiveness for two of the first three industries. The reasons for no discernable differences in concentrations before and after BMP implementation at the two industries are not obvious, but may include the voluntary nature of the BMP usage. However, valuable baseline data has been collected to date, and success was seen at one critical source industry. Therefore, it is recommended that the critical source program continue as described in the 1996 Municipal Stormwater Permit until eight critical industries are studied.

5.4.4 TMDLs in Los Angeles County

By March, 2006, at least 22 impaired water bodies in Los Angeles County will come under Total Maximum Daily Load (TMDL) regulation due to the recent Consent Decree (Los Angeles Regional Water Quality Control Board et al, 1999). The pollutants claimed to be causing impairment include trash, nutrients, coliform, nitrogen, metal, PCBs, pesticides, and chlordane. It is recommended that receiving water impact studies be performed on significant impaired water bodies to identify impacts due to stormwater. Such impact studies could include assessments of bioassessment.

5.4.5 Constituents of Concern

The following recommendations are based on the observation of problems identified by the monitoring program, namely: dry and wet weather bacteria indicators, zinc and copper toxicity in Ballona Ck., suspended solids linked to contaminated sediments, and toxicity in the Los Angeles and San Gabriel Rivers. These recommendations also recognize the concerns regarding possible stormwater impairment to water bodies under the forthcoming TMDL regulations.

5.4.5.1 Bacteria

Wet weather observations suggest that peak coliform levels may be related to regional hydrologic conditions. In an effort to characterize the presence and persistence of indicator bacteria in dry and wet weather, the Southern California Coastal Waters Research Project is conducting research and calibrating water quality models. Participation in these studies is recommended. It is further recommended that similar studies be initiated for other parts of the County where indicator bacteria impair beneficial uses.

5.4.5.2 Contaminated Sediments

Because contaminated sediments can be linked to suspended solids in stormwater, participation in the Corps of Engineers' Sediment Control Management Plan and the Coastal Commission Sediment Task Force is recommended. It is further recommended that receiving water impacts due to aerial deposition studies be conducted on inland watersheds.

5.4.5.3 Stormwater Toxicity

With the identification of zinc and copper in Ballona Creek stormwater discharge, it is recommended that major tributaries to Ballona Creek be surveyed to find possible contributing areas and sources.

It is recommended that two dry weather and two wet weather Toxicity Identification Evaluations be conducted for a full range of constituents on freshwater species on the L. A. River and Dominguez Channel.

It is recommended that two wet weather Toxicity Identification Evaluations be conducted for a full range of constituents on freshwater species on the San Gabriel River.

5.4.6 Receiving Waters Impacts

It is recommended that follow-up studies be conducted in Santa Monica Bay that address the persistence of stormwater plumes following storm events, the toxicity of stormwater on species other than sea urchins, and the fate of sediments in the Bay.

It is further recommended that a study be conducted assessing the impacts due to stormwater on San Pedro Bay.

5.4.7 Other Monitoring Activities

Participation and cooperation with local and regional monitoring programs is recommended, including but not limited to the Santa Monica Bay Restoration Project, the City of Long Beach, and the developing Southern California Regional Stormwater Monitoring Coalition.

It is also recommended that Best Management Practices and impacts be formally evaluated. Examples would include the City of Santa Clarita demonstration projects, catch basin inserts and deflectors, groundwater impacts due to stormwater infiltration, the Department of Public Works' parking lot retrofit, and storm drain low flow diversions.

Monitoring Program Review

Element	Objectives	Achievements	Recommendations
Land Use	1. Develop Event Mean Concentrations (EMCs) for constituents of concern listed in Attachment C, item B.1.c of the 1996 NPDES permit -> EMCs are used to calculate seasonal loading from unmonitored watersheds.	1. Identified constituents that may qualify for removal from the analytical suite (Table 4-13 in the integrated report).	1. According to the 1996 NPDES permit (Attachment C, item B.1.e), constituents with less than 25% detection in ten consecutive samples will not be further analyzed. We identified that most of SVOCs and all Pesticides met the above creteria.
	2. Identify possible sources of storm water pollutants.	2. EMCs were derived based on water quality data for last 6 storm seasons.	2. Monitoring shall be reduced at all stations to five events per year (four events for selected constituents and one for all constituents)
		3. Computed pollutant loads from SMBRP basins, Santa Clara River watershed and Dominguez Channel/L.A. Harbor watershed for last 6 storm seasons.	3. Restore the monitoring station in Santa Monica or build a new one for Retail/Commercial land use
		4. There are not enough data for constituents that belong to OG group such as oil and grease, total phenols, cyanide, TPH, and bacteria indicators. (We started taking grab samples this storm season.)	
Mass Emission	1. Calculate seasonal loads in major watershed management areas.	1. Identified constituents that may qualify for removal from the analytical suite (Table 4-7 in the integrated report).	1. According to the 1996 NPDES permit (Attachment C, item B.2.c), constituents with less than 25% detection in ten consecutive samples will not be further analyzed. We identified that most of SVOCs and all Pesticides met the above creteria.
	2. Identify pollutants of concern (by comparison with three water quality objectives).	2. Calculated pollutant loads from 5 major watersheds (L.A. River, S.G. River, Malibu Creek, Ballona Creek and Coyote Creek) for last 6 storm seasons.	2. Begin monitoring stormwater quality in Dominguez Channel/L.A. Harbors (highest overall imperviousness among major WMAs) to study urbanization impacts on stormwater quality.
		3. Identified 32 pollutants of concern (Table 4-6b in the integrated report).	3. According to the permit (Attachment C, item B.2.a), monitoring shall be reduced at all stations to five events per year.
			4. Monitor water quality of dry weather flow three times/year to investigate impacts of point source discharges and evaluate effectiveness of low-flow diversion projects..

Critical Source	1 Characterize the critical source runoff – 1st year.	1. Auto dismantling, auto repair and fabricated metals – done with 1st year and 2nd year sampling.	1. It is recommended that effectiveness of BMP equipment be evaluated by experiments under controlled environment because comparison study conducted last year between companies with BMPs and those without BMPs showed virtually no significant improvement in water quality as a result of implementing BMPs.
	2 Assess effectiveness of BMPs – 2nd year.	2. Motor freight and automobile dealers – done with 1st year sampling and in 2nd year sampling.	
		3. Chemical manufacturing, machinery manufacturing and rubber and plastics – in 1st year sampling.	
		4. Examined efficiency of BMPs at auto dismantling, auto repair and fabricated metals industries (Table 4-15 in the integrated report).	

Table1. Monitoring Cost Analysis

		Constituents analyzed							Cost Analysis					
Element	Storm Season	No. of Monitoring Events	General Minerals	Heavy Metals	Miscellaneous Constituents	Indicator Bacteria	SVOCs	Pesticides	Lab Cost	Capital Cost[1]	Sampling Labor[1]	Materials[1]	Station Maintenance[1]	Total
Land Use	2001-2002	4	X	X	X	X	X		$38,000					
		1	X	X	X	X	X	X	$13,000					
	2002-2003	4	X	X	X	X			$27,200					
		1	X	X	X	X	X	X	$13,000					
	2003-2004	4	X	X	X	X			$27,200	$60,000	$167,500	$16,250	$96,250	
		1	X	X	X	X	X	X	$13,000					
	2004-2005	4	X	X	X	X			$27,200					
		1	X	X	X	X	X	X	$13,000					
	2005-2006	4	X	X	X	X			$27,200					
		1	X	X	X	X	X	X	$13,000					
	Total	25							$211,800	$60,000	$167,500	$16,250	$96,250	$551,800

		Constituents analyzed							Cost Analysis					
Element	Storm Season	No. of Monitoring Events	General Minerals	Heavy Metals	Miscellaneous Constituents	Indicator Bacteria	SVOCs	Pesticides	Lab Cost	Capital Cost[1]	Sampling Labor[1]	Materials[1]	Station Maintenance[1]	Total
Mass Emission	2001-2002	4	X	X	X	X	X		$28,800					
		1	X	X	X	X	X	X	$9,700					
	2002-2003	4	X	X	X	X			$20,400					
		1	X	X	X	X	X	X	$9,700					
	2003-2004	4	X	X	X	X			$20,400	$60,000	$113,750	$13,750	$62,500	
		1	X	X	X	X	X	X	$9,700					
	2004-2005	4	X	X	X	X			$20,400					
		1	X	X	X	X	X	X	$9,700					
	2005-2006	4	X	X	X	X			$20,400					
		1	X	X	X	X	X	X	$9,700					
	Total	25							$158,900	$60,000	$113,750	$13,750	$62,500	$408,900

		Constituents analyzed							
Element	Dry Season	No. of Monitoring Events	General Minerals	Heavy Metals	Miscellaneous Constituents	Indicator Bacteria	SVOCs	Pesticides	Lab Cost
Mass Emission (dry)	2001	3	X	X	X	X	X	X	$29,100
	2002	3	X	X	X	X	X	X	$29,100
	2003	3	X	X	X	X	X	X	$29,100
	2004	3	X	X	X	X	X	X	$29,100
	2005	3	X	X	X	X	X	X	$29,100
	Total	15							$145,500

Total Cost= $1,544,348

1. Estimates based on monitoring costs under the 1996 permit.

Table . Monitoring Cost Analysis

Element	Storm Season	Motor Freight		Auto Dealers		Chemical Manufacturing		Machinery Manufacturing		Rubber/Plastics		Cost Analysis				
		T10,11,12	C10,11,12	T13,14,15	C13,14,15	T16,17	C16,17	T19,20	C19,20	T22,23,24	C22,23	Total Annual Lab Cost	Capital Cost[1]	Sampling Labor[1]	Materials[1]	Total
Critical Source	2001-2002	7	7	7	6	0	1	1	2	3	3	$70,729	$41,250	$221,250	$7,500	
	2002-2003	0	0	0	0	10	10	10	10	10	10	$97,420				
	Total	7	7	7	6	10	11	11	12	13	13	$168,148	$41,250	$221,250	$7,500	$438,148

R0001319

1 Estimates based on monitoring costs under the 1996 permit.

Future Monitoring Recommendations		
Element	Recommendations	Estimated Cost
Monitoring Program	1) Continue Land Use Monitoring at existing locations and a new location for Retail/Commercial land use type (total eight stations) for five storms of each season (four storms for selected constituents and one for all constituents).	$552,000 (for five storm seasons)
	2) Continue Mass Emission Monitoring at existing locations and a new location in Dominguez Channel/L.A. Harbor (total six stations) for five storms of each season (four storms for selected constituents and one for all constituents).	$409,000 (for five storm seasons)
	3) Monitor water quality of dry weather flow at Mass Emission monitoring stations for three times of each year to investigate impacts of point source discharges on surface water quality and evaluate effectiveness of low-flow diversion projects.	$146,000 (for five years)
	4) Complete Critical Source monitoring program as originally planned.	$438,000
Bacteria	1) Participate in SCCWRP bacteria TMDL modeling for L.A. River (Already underway; $100,000).	$75,000
	2) Encourage and participate in development of similar modeling of Ballona Creek, Malibu Creek, San Gabriel River, Dominguez Channel and Coyote Creek.	$200,000
Contaminated Sediments	1) Cooperate in source identification work by Corps and RWQCB Task Force (already underway; $110,000)	$110,000
	2) Aerial Deposition: Fund further inland studies by SCCWRP	$100,000
Stormwater Toxicity	1) Investigate sources of zinc and copper in Ballona Creek drainage area using quick response kits	$75,000
	2) Conduct L.A. River 2 dry and 2 wet weather TIEs over 2 years	$80,000
	3) Conduct Dominguez Channel 2dry and 2 wet weather TIEs over 2 years	$80,000
	4) Conduct San Gabriel River 2 wet weather TIEs over 2 years.	$60,000
Receiving Waters Impact	1) San Pedro Bay over 3 years	$700,000
	2) Santa Monica Bay Follow-up	
	a) Plume persistence	?
	b) Stormwater toxicity using other species	?
	3) Biological Diversity (Bioassessment) Monitoring on up to 22 303d Water Bodies a la FoLAR and Heal the Bay	$45,000 per site & year

Other Activities	1) Participate in Local and Regional Monitoring Program	
	a) Santa Monica Bay Restoration Project (already underway)	$118,000
	b) So. California Stormwater MonitoringCoalition (on hold by Orange Co.; $14,000)	$14,000
	c) City of L.A. Beach Water Quality Advisory Group (already underway)	$2,000
	2) BMP Evaluation	
	a) Santa Clarita demonstration projects (already underway; $5,000/year)	$25,000
	b) County catch basin inserts/deflectors ($5,000/year)	$25,000
	c) Groundwater impacts of infiltration (LA/SG Rivers; $50,000/year)	$100,000
	d) DPW parking lot retrofit (already underway; $3,000,000)	$200,000
	e) Low flow diversions (already underway; $5,000/year)	$25,000
	3) Form the BMP Task Force and evaluate BMPs	$100,000
Total		$3,634,000

Table 4-13. 1994-2000 Land Use Constituent Detection Rates

	Commercial	Vacant	High Density Single Family Residential	Trans-portation	Light Industrial	Educational	Multi-Family Residential	Mixed Residential
Miscellaneous Constituents								
Cyanide*	&	X	&	&	&	&	&	&
TPH	&	X	&	&	&	&	&	&
Oil and Grease	&	X	&	&	&	&	&	&
Total Phenols	&	X	&	&	&	&	&	&
Indicator Bacteria*	&	-	&	&	&	&	&	&
General Minerals								
Ammonia	-	X	-	-	-	X	-	-
Calcium	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-
Bicarbonate	-	-	-	-	-	-	-	-
Carbonate	X	X	X	X	X	X	X	X
Chloride	-	-	-	-	-	-	-	-
Flouride	X	-	X	X	X	X	X	X
Nitrate	-	-	-	-	-	-	-	-
Sulfate	-	-	-	-	-	-	-	-
Alkalinity	-	-	-	-	-	-	-	-
Hardness	-	-	-	-	-	-	-	-
COD	-	X	-	-	-	-	-	-
pH	-	-	-	-	-	-	-	-
Specific Conductance	-	-	-	-	-	-	-	-
Total Dissolved Solids*	-	-	-	-	-	-	-	-
Turbidity*	-	-	-	-	-	-	-	-
Total Suspended Solids*	-	-	-	-	-	-	-	-
Volatile Suspended Solids	-	-	-	-	-	-	-	-
MBAS	X	X	X	X	-	X	X	X
Total Organic Carbon	-	-	-	-	-	-	-	-
BOD	-	-	-	-	-	-	-	-
Nutrients								
Dissolved Phosphorus*	-	X	-	-	-	-	-	-
Total Phosphorus*	-	X	-	-	-	-	-	-
NH3-N*	-	X	-	-	-	X	-	-
Nitrate-N*	-	-	-	X	-	X	X	X
Nitrite-N*	-	X	-	-	-	X	-	-
TKN*	-	-	-	-	-	-	-	-
Metals								
Dissolved Aluminum	X	X	X	X	X	-	X	X
Total Aluminum*	X	X	-	X	-	-	-	-
Dissolved Antimony	X	X	X	X	X	X	X	X
Total Antimony	X	X	X	X	X	X	X	X
Dissolved Arsenic	X	X	X	X	X	X	X	X
Total Arsenic	X	X	X	X	X	X	X	X
Dissolved Barium	-	-	-	-	-	-	-	-
Total Barium	-	-	-	-	-	-	-	-
Dissolved Beryllium	X	X	X	X	X	X	X	X
Total Beryllium	X	X	X	X	X	X	X	X
Dissolved Boron	-	X	X	-	X	-	-	X
Total Boron	-	-	-	-	-	-	-	X
Dissolved Cadmium*	X	X	X	X	X	X	X	X
Total Cadmium	X	X	X	X	X	X	X	X
Dissolved Chromium	X	X	X	X	X	X	X	X
Total Chromium	X	X	X	X	X	X	X	X
Dissolved Chromium +6	X	X	X	X	X	X	X	X
Total Chromium +6	X	X	X	X	X	X	X	X

Table 4-13. 1994-2000 Land Use Constituent Detection Rates

	Commercial	Vacant	High Density Single Family Residential	Trans-portation	Light Industrial	Educational	Multi-Family Residential	Mixed Residential
Dissolved Copper*	-	X	-	-	-	-	-	-
Total Copper*	-	-	-	-	-	-	-	-
Dissolved Iron	-	X	X	X	-	-	X	X
Total Iron	-	-	-	-	-	-	-	-
Dissolved Lead*	X	X	X	X	X	X	X	X
Total Lead*	X	X	-	X	X	X	X	X
Dissolved Manganese	X	X	X	X	X	X	X	X
Total Manganese	X	X	X	X	X	X	X	X
Dissolved Mercury	X	X	X	X	X	X	X	X
Total Mercury*	X	X	X	X	X	X	X	X
Dissolved Nickel*	X	X	X	X	X	X	X	X
Total Nickel*	-	X	X	X	-	X	X	X
Dissolved Selenium	X	X	X	X	X	X	X	X
Total Selenium	X	X	X	X	X	X	X	X
Dissolved Silver	X	X	X	X	X	X	X	X
Total Silver	X	X	X	X	X	X	X	X
Dissolved Thallium	X	X	X	X	X	X	X	X
Total Thallium	X	X	X	X	X	X	X	X
Dissolved Zinc*	-	X	X	-	-	-	-	-
Total Zinc*	-	X	X	-	-	-	-	-
SVOCs								
Bis(2-ethylhexyl)phthalate*	&	&	&	&	&	&	&	&
PAHs								
Phenanthrene*	&	&	&	&	&	&	&	&
Pyrene*	&	&	&	&	&	&	&	&
All other PAHs	&	&	&	&	&	&	&	&
All other SVOCs	X	X	X	X	X	X	X	X
Pesticides								
Organochlorine Pesticides & PCBs	X	X	X	X	X	X	X	X
Carbofuran	X	X	X	X	X	X	X	X
Glyphosate	X	X	X	X	X	X	X	X
Organo-Phosphate Pesticides								
Diazinon*	X	X	X	X	X	X	X	X
Chlorpyrifos*	X	X	X	X	X	X	X	X
N- and P-Containing Pesticides								
Thiobencarb	X	X	X	X	X	X	X	X
All other N- and P- Pesticides	X	X	X	X	X	X	X	X
Phenoxyacetic Acid Herbicides								
2,4-D	X	X	X	X	X	X	X	X
2,4,5-TP	X	X	X	X	X	X	X	X
Bentazon	X	X	X	X	X	X	X	X

X = less than 25% detection in ten consecutive samples

- = more than 25% detection in ten consecutive samples

& = less than 10 samples tested

* Constituent of concern

Table 4-7. 1994-2000 Mass Emission Constituent Detection Rates

	Ballona Creek	Malibu Creek	Los Angeles River	Coyote Creek	San Gabriel River
Miscellaneous Constituents					
Cyanide*	X	X	X	&	X
TPH	X	X	-	&	X
Oil and Grease	X	X	-	&	X
Total Phenols	X	X	X	&	X
Indicator Bacteria*	-	-	-	&	-
General Minerals					
Ammonia	-	X	-	-	X
Calcium	-	-	-	-	-
Magnesium	-	-	-	-	-
Potassium	-	-	-	-	-
Sodium	-	-	-	-	-
Bicarbonate	-	-	-	-	-
Carbonate	X	X	X	X	X
Chloride	-	-	-	-	-
Flouride	-	-	-	-	-
Nitrate	-	-	-	-	-
Sulfate	-	-	-	-	-
Alkalinity	-	-	-	-	-
Hardness	-	-	-	-	-
COD	-	-	-	-	-
pH	-	-	-	-	-
Specific Conductance	-	-	-	-	-
Total Dissolved Solids*	-	-	-	-	-
Turbidity*	-	-	-	-	-
Total Suspended Solids*	-	-	-	-	-
Volatile Suspended Solids	-	-	-	-	-
MBAS	-	X	X	X	X
Total Organic Carbon	-	-	-	-	-
BOD	-	-	-	-	-
Nutrients					
Dissolved Phosphorus*	-	-	-	-	-
Total Phosphorus*	-	-	-	-	-
NH3-N*	-	X	X	-	X
Nitrate-N*	-	-	-	-	-
Nitrite-N*	-	X	-	-	-
TKN*	-	-	-	-	-
Metals					
Dissolved Aluminum	X	X	-	X	X
Total Aluminum*	-	-	-	-	-
Dissolved Antimony	X	X	X	X	X
Total Antimony	X	X	X	X	X
Dissolved Arsenic	X	X	X	X	X
Total Arsenic	X	X	X	X	X
Dissolved Barium	-	-	-	-	-
Total Barium	-	-	-	-	-
Dissolved Beryllium	X	X	X	X	X
Total Beryllium	X	X	X	X	X
Dissolved Boron	-	-	-	-	-
Total Boron	-	-	-	-	-
Dissolved Cadmium*	X	X	X	X	X
Total Cadmium	X	X	X	X	X
Dissolved Chromium	X	X	X	X	X
Total Chromium	X	X	X	X	X
Dissolved Chromium +6	X	X	X	X	X
Total Chromium +6	X	X	X	X	X

Table 4-7. 1994-2000 Mass Emission Constituent Detection Rates

	Ballona Creek	Malibu Creek	Los Angeles River	Coyote Creek	San Gabriel River
Dissolved Copper*	-	X	-	-	X
Total Copper*	-	-	-	-	-
Dissolved Iron	X	X	-	-	X
Total Iron	-	-	-	-	-
Dissolved Lead*	X	X	X	X	X
Total Lead*	X	X	-	X	X
Dissolved Manganese	X	X	X	X	X
Total Manganese	X	X	X	X	X
Dissolved Mercury	X	X	X	X	X
Total Mercury*	X	X	X	X	X
Dissolved Nickel*	X	X	-	X	X
Total Nickel*	-	-	-	-	X
Dissolved Selenium	X	X	X	X	X
Total Selenium	X	X	X	X	X
Dissolved Silver	X	X	X	X	X
Total Silver	X	X	X	X	X
Dissolved Thallium	X	X	X	X	X
Total Thallium	X	X	X	X	X
Dissolved Zinc*	X	X	X	X	X
Total Zinc*	-	X	-	X	X
SVOCs					
Bis(2-ethylhexyl)phthalate*	&	&	&	&	&
PAHs					
Phenanthrene*	&	&	&	&	&
Pyrene*	&	&	&	&	&
All other PAHs	&	&	&	&	&
All other SVOCs	X	X	X	X	X
Pesticides					
Organochlorine Pesticides & PCBs	X	X	X	X	X
Carbofuran	X	X	X	X	X
Glyphosate	X	X	X	X	X
Organo-Phosphate Pesticides					
Diazinon*	X	X	X	X	X
Chlorpyrifos*	X	X	X	X	X
N- and P-Containing Pesticides					
Thiobencarb	X	X	X	X	X
All other N- and P- Pesticieds	X	X	X	X	X
Phenoxyacetic Acid Herbicides					
2,4-D	X	X	X	X	X
2,4,5-TP	X	X	X	X	X
Bentazon	X	X	X	X	X

X = less than 25% detection in ten consecutive samples

- = more than 25% detection in ten consecutive samples

& = less than 10 samples tested

* Constituent of concern

Table 4-6b. 1994-2000 Comparison of Mass Emissions Annual Mean Concentrations to Objectives by Site

Class Constituent	Ballona Creek *							Malibu Creek *							Los Angeles River *						Coyote Creek						San Gabriel River *						Grand Total
	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	Total	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	Total	1995-96	1996-97	1997-98	1998-99	1999-2000	Total	1995-96	1996-97	1997-98	1998-99	1999-2000	Total	1995-96	1996-97	1997-98	1998-99	1999-2000	Total	
Total Rainfall (in.)	14.76	*	11.18	28.28	9.48	10.59		35.41	17.9	9.22	37.51	8.48	17.24		10.5	6.17	17.8	6.34	7.98		*	6.06	23.03	6.64	5.29		13.11	8	28.8	6.2	12.41		
Cyanide	-	-	-	-	-	-		-	-	-	X	-	-	1	-	-	-	X	-	1	-	-	-	-	-		X	X	X	X	-	4	6
Total Coliform	X	X	X	X	X	X	6	X	X	X	X	X	X	6	X	X	X	X	X	5	X	NS	NS	NS	NS	1	X	X	X	X	X	5	23
Fecal Coliform	X	X	X	X	X	X	6	X	X	X	X	X	X	6	X	X	X	X	X	5	X	NS	NS	NS	NS	1	X	X	X	X	X	5	23
Fecal Streptococcus																						NS	NS	NS	NS								
Fecal Enterococcus	X	X	-	-	X	X	4	X	X	-	-	X	X	4	X	-	-	X	X	3	X	-	-	-	-	1	X	-	-	X	X	3	15
Total Dissolved Solids	-	-						-	-	-	X	X	X	3				X		1	X			X	X	3	X	X		X	X	4	11
Turbidity	-	-		X	X		2	-	-	-	X	X	X	3	X		X	X	X	4	X		X	X		3			X		X	2	14
Total Suspended Solids	-	-						-	-	-																							
Dissolved Phosphorus	-	-						-	-	-																							
Total Phosphorus	-	-						-	-	-																							
NH3-N	-	-						-	-	-																					-		
Nitrate-N	-	-						-	-	-																							
Nitrite-N	-	-						-	-	-	-	-	-																				
TKN	-	-						-	-	-																							
Total Aluminum	-	-	-	X			1	-	-	-	X			1	-	X	X	X		3	-	X	X			2	-		X			1	8
Dissolved Cadmium	-	-	-	-	-	-		-	-	-		-	-		-	-	X	-	-	1	-	-		-	-		-	-	-	-	-		1
Dissolved Copper	-	-		X	X	X	3	-	-	-	X	-	X	2	X	X	X	X	X	5	X		X	X	X	4	-		X	-	-	1	15
Total Copper	-	-		X	X	X	3	-	-	-	X			1	X	X	X	X	X	5	X	X	X	X		4	X	X	X			3	16
Dissolved Lead	-	-	-	X	-	-	1	-	-	-	-	-	-		X	X	X	-	X	4	-		X	-	-	1	-	-	X	-	-	1	7
Total Lead	-	-	X	X			2	-	-	-	X	-	-	1	X	X	X	X	X	5	X	X	X	-	-	3	-	X	X	-	-	2	13
Total Mercury	-	-	X	-	-	-	1	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		1
Dissolved Nickel	-	-		X	-	-	1	-	-	-	X			1			X			1	-	-		-	-		-			-	-		3
Nickel	-	-						-	-	-	X			1	X		X			2										-			3
Dissolved Zinc	-	-		X			1	-	-	-		-	-				X		-	1		-	X		-	1	-	-	X		-	1	4
Total Zinc	-	-	X	X	X		3	-	-	-	X	-	-	1	X	X	X	X		4	X	X	X			3		X	X		-	2	13
Bis(2 ethylhexyl)phthalate	-	-	X	X	X	-	3	-	-	-	X	X	X	3	X	X	X	-	-	3	X	X	X	X	-	4	X	X	X	-	-	3	16
Phenanthrene	-	-	-	-	-	-		-	-	-	-	-	X	1	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		1
Pyrene	-	-	-	-	-	-		-	-	-	-	-	X	1	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		1
Diazinon	-	-	-	-		-		-	-	-	-	-	-		-	-	-				-	-	-				-	-	-	-			
Chlorpyrifos	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		
Total	3	3	6	12	8	5	37	3	3	2	13	6	10	37	11	9	14	11	8	53	10	5	9	5	2	31	7	8	12	5	5	37	195

X = Greater than objective[1] Except for indicator bacteria, there are no numerical water quality standards that apply to stormwater or "non-point source" pollution. Current federal and state numerical standards apply only to "point source pollution," such as sanitary sewage, industrial and commercial discharges to the ocean, and other waterbodies. Water quality standards described in the 1995 Los Angeles Region Basin Plan or the 1997 California Ocean Plan do not apply to stormwater runoff, and any exceedance of values should not indicate violation nor noncompliance with the plans. Furthermore, a direct comparison of the sampling results with the Ocean Plan standards cannot be made since the results presented in the table are detected values before dilution, a factor allowed by the Ocean Plan.

* Required by Permit

* = Rain gage not active

- = Statistically invalid data, not enough samples or data above detection limit collected

NS = Not Sampled

Blank = No Exceedance

1 = Objectives are presented in Table 4-3

Table 4-15. Comparison of Critical Source Results Before and After BMP Implementation

			Auto Dismantling-Control					Auto Dismantling-BMP					BMP	
Class Constituent	DL	Units	No. of Samples	Percent Detects	Mean	Median	CV	No. of Samples	Percent Detects	Mean	Median	CV	Post BMP Median	Percent Change
Miscellaneous Constituents														
Oil and Grease	1	mg/l	98	56	7.4	1.6	2.08	24	92	7.0	5.2	0.92	Increased	222%
TPH as Gasoline	0.5	mg/l	105	9	S.I.D.	S.I.D.	S.I.D.	24	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
TPH as Diesel	0.5	mg/l	105	2	S.I.D.	S.I.D.	S.I.D.	22	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
Indicator Bacteria[1]														
Total Coliform	20	MPN/100ml	24	100	361,667	300,000	0.69	24	100	603,375	300,000	0.96	No Change	0%
Fecal Coliform	20	MPN/100ml	24	100	169,651	130,000	1.01	24	100	416,708	300,000	1.00	Increased	131%
Ratio Fecal Coliform/Total Coliform			0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
Fecal Streptococcus	20	MPN/100ml	24	100	407,167	240,000	1.63	24	100	951,542	300,000	2.08	Increased	25%
Fecal Enterococcus	20	MPN/100ml	24	100	216,883	110,000	1.63	24	100	480,429	240,000	2.10	Increased	118%
General Minerals														
COD	5	mg/l	35	100	114	84	0.91	6	83	72	62	0.83	Decreased	-26%
pH	0.14		133	100	6.6	6.5	0.06	26	100	6.4	6.4	0.03	Decreased	-2%
Specific Conductance	1.0	umhos/cm	131	100	203	189	0.58	26	100	145	131	0.46	Decreased	-31%
Total Dissolved Solids	2.0	mg/l	27	100	104	90	0.43	6	100	71	66	0.38	Decreased	-27%
Total Suspended Solids	2.0	mg/l	29	100	71	50	0.73	6	100	58	56.5	0.53	Increased	13%
MBAS	0.05	mg/l	35	60	0.17	0.08	1.54	6	100	0.10	0.09	0.28	Increased	8%
Total Organic Carbon	1.0	mg/l	31	100	22	18	0.59	6	100	13	12	0.23	Decreased	-34%
Metals														
Dissolved Aluminum	100	µg/l	37	41	189	50	1.84	6	0	&	&	&	Possible Decrease	0%
Total Aluminum	100	µg/l	37	100	918	329	2.57	6	50	115	90	0.75	Decreased	-73%
Dissolved Cadmium	1	µg/l	37	54	1.6	1.0	1.09	6	33	1.0	0.5	0.80	Decreased	-50%
Total Cadmium	1	µg/l	37	81	2.6	2.0	0.88	6	83	1.7	1.4	0.77	Decreased	-31%
Dissolved Chromium	5	µg/l	37	14	S.I.D.	S.I.D.	S.I.D.	6	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
Total Chromium	5	µg/l	37	46	6.0	2.5	1.07	6	17	&	&	&	Possible Decrease	0%
Dissolved Copper	5	µg/l	37	100	42	31	0.91	6	100	18	14	0.51	Decreased	-54%
Total Copper	5	µg/l	37	100	62	42	0.96	6	100	25	21	0.59	Decreased	-51%
Dissolved Iron	100	µg/l	37	41	307	50	2.23	6	33	108	50	0.83	No Change	0%
Total Iron	100	µg/l	37	95	1580	650	2.21	6	67	215	210	0.71	Decreased	-68%
Dissolved Lead	5	µg/l	37	38	20	2.5	3.03	6	17	&	&	&	Possible Decrease	0%
Total Lead	5	µg/l	37	100	46	17	2.12	6	67	6.4	5.9	0.63	Decreased	-65%
Dissolved Nickel	5	µg/l	37	95	16	15	0.65	6	83	8.5	7.2	0.52	Decreased	-51%
Nickel	5	µg/l	37	100	20	17	0.60	6	100	12	11	0.33	Decreased	-35%
Dissolved Zinc	50	µg/l	37	100	283	192	1.06	6	100	228	202	0.53	Increased	5%
Total Zinc	50	µg/l	37	100	355	254	0.86	6	100	281	252	0.43	Decreased	-1%
SVOCs														
Bis(2-ethylhexyl)phthalate	3	µg/l	105	98	33	26	0.90	22	95	33	11	2.09	Decreased	-57%
PAHs[2]	0.5-5.0	µg/l	105	0	S.I.D.	S.I.D.	S.I.D.	22	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
All other SVOCs	0.5-10	µg/l	105	0	S.I.D.	S.I.D.	S.I.D.	22	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	

1 Indicator Bactena tested during 1999-2000 storm season only

2 PAHs tested during 1999-2000 storm season only

S.I.D. = Statistically Invalid Data, not enough data above detection limit collected

& = Statistically valid data in the control sites but detected in less than 20% of the samples in the BMP sites

CV = Coefficient of variation

DL = Detection Limit

Possible Decrease = Less than 20% detects BMP, but existing data shows a possible lowered median.

Table 4-15. Comparison of Critical Source Results Before and After BMP Implementation

			Auto Repair-Control					Auto Repair-BMP					BMP	
Class Constituent	DL	Units	No. of Samples	Percent Detects	Mean	Median	CV	No. of Samples	Percent Detects	Mean	Median	CV	Post BMP Median	Percent Change
Miscellaneous Constituents														
Oil and Grease	1	mg/l	97	63	10	3.2	1.62	24	100	10	6.6	0.79	Increased	105%
TPH as Gasoline	0.5	mg/l	98	0	S.I.D.	S.I.D.	S.I.D.	24	4	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
TPH as Diesel	0.5	mg/l	97	0	S.I.D.	S.I.D.	S.I.D.	23	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
Indicator Bacteria[1]														
Total Coliform	20	MPN/100ml	21	100	44,510	500	4.40	24	100	97,426	40,000	1.06	Increased	7900%
Fecal Coliform	20	MPN/100ml	21	100	4,935	300	3.95	24	100	51,568	19,500	1.51	Increased	6400%
Ratio Fecal Coliform/Total Coliform			9	100	39%	33%	0.58	2	S.I.D.	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
Fecal Streptococcus	20	MPN/100ml	21	100	4,368	1,300	1.48	24	100	53,939	22,500	1.30	Increased	1631%
Fecal Enterococcus	20	MPN/100ml	21	100	2,873	700	2.16	24	100	21,169	5,000	1.85	Increased	614%
General Minerals														
COD	5	mg/l	29	97	112	62	1.40	7	71	97	46	1.51	Decreased	-27%
pH	0.14		118	100	6.5	6.6	0.11	28	100	6.0	6.0	0.09	Decreased	-9%
Specific Conductance	1.0	umhos/cm	120	100	114	81	0.96	28	100	60	50	0.75	Decreased	-39%
Total Dissolved Solids	2.0	mg/l	23	100	60	48	0.68	7	100	49	32	0.61	Decreased	-33%
Total Suspended Solids	2.0	mg/l	27	100	184	121	1.17	7	100	144	86	1.08	Decreased	-29%
MBAS	0.05	mg/l	31	55	0.20	0.066	1.66	7	100	0.14	0.15	0.32	Increased	124%
Total Organic Carbon	1.0	mg/l	28	100	25.9	13.2	1.47	7	100	21	11	1.14	Decreased	-17%
Metals														
Dissolved Aluminum	100	µg/l	32	34	151	50	1.20	7	0	&	&	&	Possible Decrease	0%
Total Aluminum	100	µg/l	32	81	876	385	1.88	7	14	&	&	&	Possible Decrease	-87%
Dissolved Cadmium	1	µg/l	31	26	1.02	0.50	1.03	7	0	&	&	&	Possible Decrease	0%
Total Cadmium	1	µg/l	31	58	2.35	1.70	1.21	7	14	&	&	&	Possible Decrease	-71%
Dissolved Chromium	5	µg/l	32	13	S.I.D.	S.I.D.	S.I.D.	7	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
Total Chromium	5	µg/l	32	47	7.6	2.5	1.22	7	0	&	&	&	Possible Decrease	0%
Dissolved Copper	5	µg/l	32	91	40	29.2	0.85	7	100	35	22.0	1.04	Decreased	-25%
Total Copper	5	µg/l	32	94	76	51	1.45	7	100	43	28	0.89	Decreased	-45%
Dissolved Iron	100	µg/l	32	53	366	95	1.78	7	29	99	50	0.89	Decreased	-47%
Total Iron	100	µg/l	32	84	2820	1119	1.72	7	57	224	260	0.78	Decreased	-77%
Dissolved Lead	5	µg/l	32	66	48	13	1.86	7	100	47	43	0.83	Increased	220%
Total Lead	5	µg/l	32	81	246	51	3.50	7	100	75	60	0.68	Increased	18%
Dissolved Nickel	5	µg/l	32	56	7.2	5.3	0.77	7	14	&	&	&	Possible Decrease	-53%
Nickel	5	µg/l	32	78	33	12	3.18	7	43	9.7	2.5	1.15	Decreased	-79%
Dissolved Zinc	50	µg/l	32	88	232	189	0.98	7	100	221	229	0.43	Increased	21%
Total Zinc	50	µg/l	32	94	466	276	1.75	7	100	263	256	0.39	Decreased	-7%
SVOCs														
Bis(2-ethylhexyl)phthalate	3	µg/l	97	90	32	18	1.07	23	96	53	26	1.98	Increased	44%
PAHs[2]	0.5-5.0	µg/l	98	0	S.I.D.	S.I.D.	S.I.D.	23	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
All other SVOCs	0.5-1.0	µg/l	98	0	S.I.D.	S.I.D.	S.I.D.	23	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	

1 Indicator Bacteria tested during 1999-2000 storm season only

2 PAHs tested during 1999-2000 storm season only

S.I.D. = Statistically Invalid Data, not enough data above detection limit collected

& = Statistically valid data in the control sites but detected in less than 20% of the samples in the BMP sites

CV = Coefficient of variation

DL = Detection Limit

Possible Decrease = Less than 20% detects BMP, but existing data shows a possible lowered median

Table 4-15. Comparison of Critical Source Results Before and After BMP Implementation

Class Constituent	DL	Units	Fabricated Metal-Control					Fabricated Metal-BMP					BMP	
			No. of Samples	Percent Detects	Mean	Median	CV	No. of Samples	Percent Detects	Mean	Median	CV	Post BMP Median	Percent Change
Miscellaneous Constituents														
Oil and Grease	1	mg/l	49	73	13.6	3.5	1.98	20	85	5	3.9	0.92	Increased	11%
TPH as Gasoline	0.5	mg/l	49	0	S.I.D.	S.I.D.	S.I.D.	20	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
TPH as Diesel	0.5	mg/l	49	0	S.I.D.	S.I.D.	S.I.D.	20	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
Indicator Bacteria[1]														
Total Coliform	20	MPN/100ml	15	100	288,713	30,000	2.17	20	100	61,506	1,300	3.26	Decreased	-96%
Fecal Coliform	20	MPN/100ml	15	100	84,875	14,000	1.67	20	100	56,419	415	3.58	Decreased	-97%
Ratio Fecal Coliform/Total Coliform			2	S.I.D.	S.I.D.	S.I.D.	S.I.D.	2	S.I.D.	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
Fecal Streptococcus	20	MPN/100ml	15	100	286,931	9,000	1.92	20	100	59,740	500	1.73	Decreased	-94%
Fecal Enterococcus	20	MPN/100ml	15	100	236,303	1,400	2.37	20	100	16,939	95	2.08	Decreased	-93%
General Minerals														
COD	5	mg/l	15	93	87	76	0.64	6	83	42	49	0.65	Decreased	-35%
pH	0.14		64	100	6.1	6.0	0.10	23	100	6.1	6.0	0.07	Decreased	-1%
Specific Conductance	1.0	umhos/cm	64	100	122	89	1.12	23	100	51	30	1.94	Decreased	-67%
Total Dissolved Solids	2.0	mg/l	15	100	69	64	0.55	6	100	22	22	0.33	Decreased	-66%
Total Suspended Solids	2.0	mg/l	15	100	318	176	1.72	6	100	97	99	0.57	Decreased	-44%
MBAS	0.05	mg/l	15	100	0.27	0.25	0.63	6	67	0.060	0.057	0.56	Decreased	-77%
Total Organic Carbon	1.0	mg/l	15	100	22	23	0.70	6	100	5.2	5.2	0.31	Decreased	-78%
Metals														
Dissolved Aluminum	100	µg/l	15	87	434	205	0.99	6	67	633	129	1.39	Decreased	-37%
Total Aluminum	100	µg/l	15	100	1859	1020	1.55	6	83	670	211	1.28	Decreased	-79%
Dissolved Cadmium	1	µg/l	15	33	0.93	0.50	0.87	6	0	&	&	&	Possible Decrease	0%
Total Cadmium	1	µg/l	15	53	1.5	1.2	1.04	6	17	&	&	&	Possible Decrease	-58%
Dissolved Chromium	5	µg/l	15	27	7.4	2.5	1.74	6	0	&	&	&	Possible Decrease	0%
Total Chromium	5	µg/l	15	53	12	7.1	1.55	6	0	&	&	&	Possible Decrease	-65%
Dissolved Copper	5	µg/l	15	100	285	122	1.33	6	100	42	25	0.89	Decreased	-80%
Total Copper	5	µg/l	15	100	475	235	1.26	6	100	39	30	0.66	Decreased	-87%
Dissolved Iron	100	µg/l	15	100	719	511	0.75	6	67	405	280	1.10	Decreased	-45%
Total Iron	100	µg/l	15	100	2054	942	1.27	6	67	548	460	0.96	Decreased	-51%
Dissolved Lead	5	µg/l	15	100	54	36	0.85	6	50	31	10	1.56	Decreased	-72%
Total Lead	5	µg/l	15	100	151	126	1.04	6	100	51	13	1.39	Decreased	-89%
Dissolved Nickel	5	µg/l	15	93	58	20	1.73	6	0	&	&	&	Possible Decrease	-87%
Nickel	5	µg/l	15	100	72	23	1.51	6	17	&	&	&	Possible Decrease	-89%
Dissolved Zinc	50	µg/l	15	100	494	373	0.92	6	100	268	210	0.54	Decreased	-44%
Total Zinc	50	µg/l	15	100	574	449	0.79	6	100	310	299	0.43	Decreased	-34%
SVOCs														
Bis(2-ethylhexyl)phthalate	3	µg/l	49	86	14	9	1.24	20	95	20	8.3	1.81	Decreased	-3%
PAHs[2]	0.5-5.0	µg/l	49	0	S.I.D.	S.I.D.	S.I.D.	20	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	
All other SVOCs	0.5-10	µg/l	49	0	S.I.D.	S.I.D.	S.I.D.	20	0	S.I.D.	S.I.D.	S.I.D.	S.I.D.	

1 Indicator Bacteria tested during 1999-2000 storm season only

2 PAHs tested during 1999-2000 storm season only

S.I.D. = Statistically Invalid Data, not enough data above detection limit collected

& = Statistically valid data in the control sites but detected in less than 20% of the samples in the BMP sites

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Possible Decrease = Less than 20% detects BMP, but existing data shows a possible lowered median.

Table 4-16. Installed Critical Source BMPs for the 1999-2000 Storm Season

BMP EQUIPMENT/SUPPLIES	WHOLESALE TRADE INDUSTRIES			AUTO REPAIR INDUSTRIES			METAL FABRICATION INDUSTRIES		
	T1	T2	T3	T4	T5	T6	T7	T8	T9
Oil Absorbent Fabrics	X	X	X	X	X	X	X	X	X
65 Gallon Salvage Drums	X	X	X	X	X	X			
Spill Control Pallets	X	X	X	X	X	X			
2 - Drum Poly Pallets	X	X	X	X	X	X			
Tarps	X	X	X	X	X	X			
Safety Drum Funnel	X	X	X	X	X	X			
Cleaners/Degreasers	X	X	X	X	X	X			
8' Oil Booms	X	X	X	X	X	X			
Commercial Shelving	X	X	X	X	X	X			
Absorbent Drum Covers	X	X	X	X	X	X			
Drum Pallets	X	X	X						
Canopy		X						X	
Sand Absorbents							X	X	X
Powerful Magnets							X	X	X
Drip Pans							X	X	X
Wooden Pallets							X	X	X

LACDPW WATER QUALITY MONITORING COSTS 1990 Permit Totals								
Element	No. of Sites	No. of Events	Capital	Sampling Labor	Materials	Station Maintenance	Laboratory	TOTAL
Mass Emissions	9	31	$540,000	$80,010	$37,373	$161,939	$115,476	$934,798
Land Use	15	18	$900,000	$133,350	$67,601	$354,226	$97,126	$1,552,303
Corporate Yd. (MD3)	1	5	N/A	$381	N/A	N/A	$55,682	$56,063
TOTAL	25	54	$1,440,000	$213,741	$104,974	$516,165	$268,284	$2,543,164

LACDPW WATER QUALITY MONITORING COSTS 1996 Permit Totals as of: 07/20/00								
Element	No. of Sites	No. of Events*	Capital (not including 1990 permit costs, above)	Sampling Labor	Materials	Station Maintenance	Laboratory	TOTAL
Receiving Waters to Date	2	13	$628,500	N/A	N/A	N/A	N/A	$628,500
Mass Emissions to Date	5	50	$0	$91,487	$11,130	$49,733	$237,598	$389,948
Land Use to Date	8	67	$30,000	$134,258	$13,104	$77,214	$546,695	$801,271
Critical Source to Date	48	26	$33,293	$177,284	$5,510	N/A	$245,313	$461,400
River Toxicity to Date	2	6	N/A	$2,365	N/A	N/A	$7,200	$9,565
El Nino Study to Date	1	4	$48,735	$0	$0	$0	$0	$48,735
Aerial Deposition to Date	1	14	$75,000	N/A	N/A	N/A	N/A	$75,000
TOTAL TO DATE	67	180	$815,528	$405,394	$29,744	$126,947	$1,036,806	$2,414,419

N/A = Not Applicable

* Not every station collected every storm.

California Regional Water Quality Control Board

Los Angeles Region

(50 Years Serving Coastal Los Angeles and Ventura Counties)

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

March 2, 2001

Harry W. Stone
Director of Public Works
County of Los Angeles, Department of Public Works
900 South Fremont Avenue, P.O. Box 1460
Alhambra, CA 91802-1460

REVIEW OF THE REPORT OF WASTE DISCHARGE FOR THE REISSUANCE OF THE MUNICIPAL STORM WATER PERMIT FOR LOS ANGELES COUNTY AND CITIES IN LOS ANGELES COUNTY.

Dear Mr. Stone:

Thank you for submitting, on January 31, 2001, the Report of Waste Discharge (ROWD) for reissuance of the Los Angeles County Municipal Storm Water Permit (Los Angeles County MS4 permit), and a sample MS4 permit. The County of Los Angeles and Cities (except the City of Long Beach) are covered under Board Order No. 96-054, which expires on July 30, 2001.

Federal regulations at 40 CFR 122.21(d) require that the ROWD be submitted at least 180 days prior to the MS4 permit expiration date and that the permitting authority respond as to its completeness. The US Environmental Protection Agency (USEPA), in addition, has issued guidelines for review and consideration of MS4 permit reapplications. (*61 Fed Reg. 41697*).

The purpose of our review and comment is to: (i) identify possible gaps in the application, (ii) suggest potential areas for improvement in program implementation and the Storm Water Quality Management Plan (SQMP), (iii) recommend a direction in monitoring to emphasize identification and control of pollutant sources and eliminate the causes of receiving water impairment, (iv) invite input on objective measures of successful program implementation (i.e. performance standards), and (v) highlight subject areas for further discussion during permit reissuance. Our comments are also intended to communicate Board staff strategy to update the Los Angeles County MS4 permit in accordance with current laws and policies and provide Permittees the opportunity to provide any additional information that will assist Board staff in permit development. During permit development, we intend to look at the sample MS4 permit submitted by Permittees for useful content, but it will not form the basis for developing permit requirements.

So far as the ROWD and accompanying Storm Water Quality Management Plan (SQMP) did not include better and improved Best Management Practices (BMPs) for the next permit term, as required under USEPA's Interim Permitting Policy (*61 Fed. Reg. 43761*), the application is incomplete. Permittees did not demonstrate that they evaluated the monitoring results and model program implementation experience from the current permit term and utilized them to propose enhancements to the SQMP for the next permit term. As a result, we identified several apparent deficiencies in this initial review. Our review of your reapplication evaluated the following areas of the Los Angeles County MS4 program for consistency with federal and state storm water regulations: (i) Illicit Connection and Illicit Discharge Elimination, (ii) Industrial

Commercial Inspection, (iii) Development Planning, (iv) Development Construction, Public Agency Activities, (v) Public Information/ Education, and (vi) Monitoring. Our comments are in the attachment (and, for your convenience, summarized in a table).

Please note that this review does not in any way restrict our privilege to bring up for discussion additional subject matters during the permit reissuance process, that have not been commented upon herein. We intend to conduct a series of work-group meetings to receive input over the coming months, with Permittee representatives and interested persons, to assist us in developing permit requirements.

While our comments, which accompany this letter, pertain to the ROWD for Los Angeles County and incorporated cities for the MS4 permit reissuance, the comments may also be deemed applicable to common elements in the separate ROWD and sample permit submitted concurrently by you and the City of Santa Clarita for the Santa Clara Watershed.

If you have any questions, please do not hesitate to contact me at (213) 576-6510 or Dr. Xavier Swamikannu at (213) 576-6654.

Sincerely,

Dennis A. Dickerson
Executive Officer

Enclosure

cc: Jorge Leon, Office of Chief Council, State Water Resources Control Board
John Youngerman, Storm Water Section, State Water Resources Control Board
Eugene Bromley, CWA Standards and Permits Office, USEPA Region IX
Laura Gentile, CWA Compliance Office, USEPA Region IX
Mustafa Ariki, Watershed Management Division, County of Los Angeles Department of Public Works
Permittees – See attached Distribution List

County of Los Angeles Municipal Co-Permitees

First Name	Last Name	Title	Organization Name
James	Thorsen	City Manager	City of Agoura Hills
James	Funk	City Engineer	City of Alhambra
Terry	Hagen	City Engineer	City of Arcadia
Maria	Dadian	City Engineer	City of Artesia
Robert	Clark	City Manager	City of Avalon
Nasser	Abbaszadeh	City Engineer	City of Azusa
Shafique	Naiyer	Interim City Engineer	City of Baldwin Park
Carlos	Alvarado	City Engineer	City of Bell
Bill	Pagett	City Engineer	City of Bell Gardens
Jerry	Crabell	City Engineer	City of Bellflower
David	Gustavson	City Engineer	City of Beverly Hills
Dan	Heil	City Engineer	City of Bradbury
Robert	Ovrom	City Manager	City of Burbank
Charles	Mink	Interim City Manager	City of Calabasas
Jerome	Groomes	City Manager	City of Carson
Vince	Brar	City Engineer/Director of Public Works	City of Cerritos
Craig	Bradshaw	City Engineer	City of Claremont
Linda	Olivieri	City Clerk	City of Commerce
John	Johnson	City Manager	City of Compton
Mary	Southall	City Clerk	City of Covina
James	Guerra	City Engineer	City of Cudahy
Jim	Davis	City Engineer/Director of Public Works	City of Culver City
Terry	Belanger	City Manager	City of Diamond Bar
Desi	Alvarez	City Engineer/Director of Public Works	City of Downey
Jesse	Duff	City Manager	City of Duarte
Kev	Tcharkhoutian	City Engineer	City of El Monte
Bellur	Davaraj	City Engineer	City of El Segundo
Woody	Natsuhara	City Engineer	City of Gardena
Lou	LeBlanc	City Engineer	City of Glendale
Richard	Cantwell	City Engineer/Director of Public Works	City of Glendora
Dan	Heil	City Engineer	City of Hawaiian Gardens
Charles	Herbertson	City Engineer/Director of Public Works	City of Hawthorne
Stephen	Burrell	City Manager	City of Hermosa Beach
Bob	Draper	City Engineer	City of Hidden Hills
Pat	Fu	City Engineer	City of Huntington Park
John	Ballas	City Engineer	City of Industry
Hermanita	Harris	City Clerk	City of Inglewood
Robert	Griego	City Manager/City Clerk	City of Irwindale
Jerry	Fulwood	City Manager	City of La Canada Flintridge
Sheryl	Lindsey	City Manager/City Clerk	City of La Habra Heights
Gary	Sloan	City Manager	City of La Mirada
Robert	Gutierrez	City Manager	City of La Puente
Martin	Lomeli	City Manager	City of La Verne
Denise	Hayward	City Clerk	City of Lakewood
Vangie	Schock	City Manager	City of Lawndale
Dawn	Tomita	City Clerk	City of Lomita
Vitaly	Troyan	City Engineer	City of Los Angeles
Gary	Moore	Div. Stormwater Manager	City of Los Angeles
Ralph	Davis III	Interim City Manager	City of Lynwood
Rick	Morgan	City Engineer	City of Malibu
Dana	Greenwood	City Engineer	City of Manhattan Beach
Bill	Pagett	City Engineer	City of Maywood
Don	Hopper	City Manager	City of Monrovia
Richard	Chen	City Engineer	City of Montebello
Ronald	Merry	City Engineer/Director of Public Works	City of Monterey Park
Jerry	Stock	City Engineer	City of Norwalk
James	Hendrickson	City Manager	City of Palos Verdes Estates
Patrick	West	City Manager/City Clerk	City of Paramount

First Name	Last Name	Title	Organization Name
Dan	Rix	City Engineer	City of Pasadena
Dennis	Courtemarche	City Manager	City of Pico Rivera
Severo	Esquivel	City Manager	City of Pomona
Les	Evans	City Manager	City of Rancho Palos Verdes
Steve	Huang	City Engineer	City of Redondo Beach
Craig	Nealis	City Manager/City Clerk	City of Rolling Hills
Douglas	Prichard	City Manager/City Clerk	City of Rolling Hills Estate
Ken	Rukavina	City Engineer	City of Rosemead
John	Garcia	City Engineer/Director of Public Works	City of San Dimas
Wilmas	Miller	City Clerk	City of San Fernando
P. Michael	Paules	City Manager	City of San Gabriel
Carlos	Alvarado	City Engineer	City of San Marino
George	Caravalho	City Manager	City of Santa Clarita
John	Price	City Engineer/Director of Public Works	City of Santa Fe Springs
Anthony	Antich	City Engineer	City of Santa Monica
Nancy	Schollenberger	City Clerk	City of Sierra Madre
Kenneth	Farsfing	City Manager	City of Signal Hill
Jim	Harris	City Engineer/Director of Public Works	City of South El Monte
Ed	Mino	City Engineer	City of South Gate
Jim	Winkle	City Engineer/Director of Public Works	City of South Pasadena
Charlie	Martin	Interim City Manager	City of Temple City
Richard	Burtt	City Engineer	City of Torrance
Bruce	Malkenhorst	City Administrator/City Clerk	City of Vernon
Ronald	Kranzer	City Engineer	City of Walnut
Daniel	Hobbs	City Manager	City of West Covina
Sharon	Peristein	City Engineer	City of West Hollywood
John	Knipe	City Engineer	City of Westlake Village
Stephen	Helvey	City Manager	City of Whittier

SUMMARY OF COMMENTS

MUNICIPAL STORM WATER AND URBAN RUNOFF DISCHARGES
WITHIN LOS ANGELES COUNTY, AND
THE CITIES OF LOS ANGELES COUNTY
[EXCLUDING THE CITY OF LONG BEACH]

Program	Key Enhancements Proposed for Renewed Permit
Public Information and Participation	1. Targeted Outreach: Implement targeted programs that draw on results of the integrated monitoring program 2. Site Visit Program: - Upgrade commercial/industrial educational site visits to inspections - Revise outreach component to continue business sponsorships 3. Performance: Provide performance standards for each Permittee
IC/ID Elimination	1. Surveying the storm drain: – Prioritize, and add a performance measure – Clarify responsibilities among the County and municipalities 2. Non-storm water discharges exempt from prohibition: – For proposed new categories, provide a supporting rationale and an analysis of water quality impacts – For conditioned exemptions, clarify conditions (and obtain Executive Officer approval 3. Training: Expedite
Public Agency Activities	1. Public Construction Projects – Require public construction projects 1 acre or more to implement construction and post-construction storm water controls 2. Pesticide Application – Provide a standardized protocol for the routine and non-routine application – Prohibit application during rain events forecasted to be greater than 0.25 inches 3. Phase 1 Facilities – Demonstrate that such facilities apply the stricter compliance based on technology or water quality for Phase 1 facilities 4. Performance – Include appropriate performance standard to measure successful implementation
Industrial and Commercial Inspections	1. Develop a stand-alone program component (business educational should remain under PIPP) 2. Include Phase I (including sites with NOIs under State Permit), vehicle repair shops, vehicle body shops, vehicle parts and accessories, gasoline stations, restaurants 3. Emphasize issues specific to the watershed and receiving waters impairments by targeting known or potential sources or sectors (as a way to prioritize the schedule) 4. Continue critical sources identification process to bring new categories of facilities,

	if identified, in to the system and address them through a prioritization process or as designated by WMC 5. Specify a clear frequency and schedule for the inspections 6. Standardize the database for scheduling and tracking of activities performed, including constant updates of facilities list, inspections, follow-up inspections and enforcement activities 7. Coordinate with RB activities 8. Incorporate suggestions made in the *CSWMP Report of Effectiveness* 9. Specify clearly defined measurable goals/performance standards, by identifying a baseline, a defined target and milestones to be achieved during the 5-year life of the permit 10. Include enforcement criteria for sites under the State General Construction Permit: Permittees must first enforce and complete followup inspections under their legal authority; then escalate to Regional Board for additional enforcement (except in situations when RB or USEPA involvement is solicited 11. Tiered training timetables: expedite to six months for cities less than 1 million population, one year for cities with population over 1 million
Development Planning	1. Complete revisions to CEQA guidelines to mitigate storm water runoff from new developments and redevelopment. 2. Complete revisions to General Plans to include storm water and watershed considerations. 3. Implement a program to make available to developers development planning information such as guidelines on siting and design of BMPs etc. 4. Specify peak discharge rate criteria to control post-development peak discharge rates. 5. Add performance standards.
Development Construction	1. Accelerate local enforcement 2. Add performance standards
Monitoring	1. Trash Monitoring: Implement a baseline trash-monitoring program for watersheds not presently listed for impairment from trash. 2. Critical Source Characterization: Implement a program to characterize critical sources that contribute a CWA 303(d) listed pollutant in watersheds 3. Treatment Control BMP Effectiveness: Develop program to evaluate the effectiveness of structural and treatment control BMPs at critical sources and as watershed improvement projects.

REPORT OF WASTE DISCHARGE

MUNICIPAL STORM WATER AND URBAN RUNOFF DISCHARGES
WITHIN LOS ANGELES COUNTY, AND
THE CITIES OF LOS ANGELES COUNTY
[EXCLUDING THE CITY OF LONG BEACH]

REVIEW AND COMMENT

I. Program for Public Information and Participation

Background

An informed and knowledgeable community is crucial to the success of a storm water quality management program. Changing public patterns of behavior that contribute to storm water pollution through education is a significant challenge. In addition, communities can play an important role in successful implementation of the storm water program when given the opportunity to participate.

The objective of a Public Information and Participation Program (PIPP) is to: (i) increase awareness among the public to build broad support for the program; (ii) increase compliance as the public become aware of the personal responsibilities expected of them for program success; and (iii) reinforce successful public education and participation strategies.

The objective of the storm water PIPP may be achieved by: (i) distributing brochures or fact sheets for general public and specific audiences such as business and industry; (ii) propagating alternative information sources through websites, public fairs, bus-stop posters, refrigerator magnets, bumper stickers, and placemats; (iii) stocking a library of educational materials for community and school groups; (iv) promoting volunteer citizen educators to educate the public and schools; (v) implementing a program for K-12 school-age children; (vi) stenciling storm drains with appropriate messages; (vii) installing a storm water hotline for information and citizen reporting; (viii) providing economic incentives to citizens and businesses; (ix) conducting public meetings/ citizen panels to receive input and disseminate information; (x) supporting volunteer water quality monitoring groups; (xi) supporting community clean-ups; (xii) supporting citizen watch groups; (xiii) encouraging vicinity adoption programs to keep areas free of storm water pollutants; (xiv) and establishing measurable goals to evaluate successful program implementation.

Permittees propose to continue the following PIPP components,

- Advertising - traditional and non-traditional
- Media Relations
- Corporate Partnerships
- Special Events

- Business Outreach
- School Education K-12
- 1-888-CLEAN-LA hotline and website
- Project Pollution Prevention identifying signature
- Research to target audiences and allocate budget resources accordingly.
- Coordination with other pollution prevention programs such as solid wastes recycling and used oil recycling.

Deficiencies

The PIPP implemented by Permittees under the current permit term was well formulated and objectively implemented. However, the PIPP program for the next permit term appears deficient as indicated below:

- **Targeted Outreach**: PIPP program for the next permit term is not upgraded to implement targeted public education programs that draw on the results of the integrated monitoring program.

- **Site Visit Program**: The commercial/ industrial educational site visits program is not upgraded to an inspection and enforcement program [see comment under IV. Program for Industrial/Commercial Inspection], and the education/ participation component of the program separated.

- **Performance**: A performance standard for each Permittee, in addition to a countywide performance standard, has not been provided.

Possible Advancements

- Targeted Outreach: Use the results from the completed 5-year PIPP and monitoring program in the current permit term to identify target audiences for special outreach (such as zinc, copper, and TSS generating facilities in the Ballona Creek watershed). Materials and information specific to known problem areas should be developed to target specific audiences. The results of research conducted during the current permit term should be used to augment the PIPP through the next permit term.

- Business education/ participation: Revise the business/ industrial outreach component to continue business sponsorships, providing easy-to-understand brochures, consulting assistance [e.g. City of Los Angeles Environmental Affairs HTM program] etc.

- Cost-sharing: The County of Los Angeles should retain its existing PIPP partnerships and continue to forge new ones. The budget for the program the last five years was approximately U.S. $5.2 million. The County indicates that an estimated 3 - 5 times that amount may be needed to support an adequate PIPP, partially due to the increase in advertising costs. The proposed PIPP budget for the new permit term is $7.5 million. Permittee contributions on pro-rate basis may be considered to fill the funding gap.

II. Program to Eliminate Illicit Connections and Illicit Discharges (IC/ID)

Background

During dry weather, much of the discharge to storm drain systems consists of wastes and wastewaters from non-storm water sources. A significant amount of such discharges may be from illicit discharges or connections, or both. Illicit discharges may occur either through direct connections (deliberate or mistaken piping) or indirect connections (infiltration, spills, washdowns, or dumping). The objective of the Permittees' proposed IC/ID program should be to detect illicit connections and illicit discharges (including unpermitted non-storm water discharges) to the storm drain system, and to promptly eliminate such discharges and connections.

The IC/ID elimination program objective may be achieved by: (i) mapping locations of outfalls of the MS4 and the names and locations of all waters of the U.S. that receive discharges from the outfalls; (ii) adopting a storm water/ urban runoff ordinance to prohibit unauthorized non-storm water discharges into the MS4, and implementing appropriate enforcement procedures and actions; (iii) implementing a program to detect and eliminate non-storm water discharges to the MS4, including illegal dumping; (iv) educating public employees, businesses, and the general public about the dangers associated with illegal discharges and improper disposal; (v) establishing a public reporting hotline or other mechanism to report illicit discharges and illegal dumping; and (v) establishing measurable goals to evaluate successful program implementation.

In the ROWD, the Permittees propose to continue implementation of IC/ID program elements, listed below, at a level of effort similar to that undertaken for the previous five years:

- Illicit Discharge Elimination
- Illicit Connection Elimination
- Public Reporting of Illicit Discharges, including Hazardous Substances

Deficiencies

The proposed IC/ID program does not specify important performance standards to detect and eliminate illicit connections and discharges. For example:

- **Progress in surveying the storm drain system:** Under the IC/ID program in existing permit, Permittees have been screening the storm drain system for illicit connections and discharge during regularly scheduled maintenance activity. But the proposed program does not discuss how much of the storm drain system has been surveyed to date, what methods have been used, and how much remains to be surveyed. Performance standards are needed measure progress on this program element.

- **Responsibility for surveys:** It is not clear who has lead responsibility in various segments of the County's and municipalities' storm drain system. Additional information is needed to clarify responsibilities.

- **Non-storm water discharge exemptions:** The Los Angeles County MS4 permit allows several categories of exemptions to the general prohibition on un-permitted non-storm water discharges. The Permittees have proposed adding several new exemption categories; e.g. unspecified discharges from emergency floor drains, and blood and human tissue from accident sites. However, no rationale and analyses of possible impacts to water quality are submitted to justify the addition of new categories to the prohibition exemption. In addition, several of the exemptions in the existing permit are subject to conditions; these conditions need to be clarified, and are subject to approval by the Regional Board Executive Officer.

- **Training:** Permittees propose to train employees in targeted positions to identify and report illicit discharges one year from the permit adoption date (page 28 of the ROWD, Part 4, E.2). However, because Permittees were required to possess training materials by March 1997, and the IC/ID model program was to be implemented no later than July 1999, the one-year time period appears unwarranted. All that may be required is refresher training. Pending clarification from the Permittees, Board staff intend to propose that the refresher training be conducted no later than 90 days from permit adoption date.

Possible Advancements

- Overview of IC/ID problems: Based on Annual Reports and the ROWD, it is not clear what types of discharges have been most problematic, and what type of response and/or corrective action has been required. It would be helpful for Permittees to provide additional information. This will facilitate the Regional Board and Permittees' efforts to enhance the IC/ID program, by focusing our efforts in the most problematic areas.

- Public reporting (including hazardous materials): Permittees may enhance the Public Reporting component of the program, including Hazardous Wastes Reporting, by posting records of illicit discharges and connections (i.e. those not subject to criminal investigation) on Permittee's websites.

- GIS database: The County of Los Angeles and several cities already have storm drain data mapped on a Geographic Information System. Consider digitizing the information for the entire MS4 permitted area and consolidation to one comprehensive GIS database.

III. Program for Public Agency Activities

Background

Municipal operations can be a potential source of pollutants to the MS4. These include pollutants: (i) that collect on streets, parking lots, open spaces, storage and vehicle maintenance areas, park and recreation lands, and (ii) that are generated from land development practices, flood management practices, storm sewer maintenance, pesticide application, and facilities maintenance.

The objective of a program for public agency activities is to ensure that public agencies: (i) minimize storm water pollution impacts from public agency activities; and (ii) hold their level of performance to an equivalent or better standard than private business/ industry.

Permittees propose to continue their implementation under the current permit term in the following subject areas:

- Sewage Systems Operations
- Public Construction Activities Management
- Vehicle Maintenance/Material Storage Facilities Management
- Landscape and Recreational Facilities Management
- Storm Drain Operation and Management
- Streets and Roads Maintenance
- Parking Facilities Management
- Public Industrial Activities (optional)
- Emergency Procedures

Deficiencies

The program proposed does not contain the following components:

- **Public construction projects**: Does not require public construction projects to implement construction and post-construction storm water controls similar to that required of private construction projects, including numerical mitigation criteria for post-construction BMPs.

- **Pesticide application**: Does not provide a standardized protocol for the routine and non-routine application of pesticides, herbicides (including preemergents), and fertilizers, and a prohibition on application during rain events (e.g. within one day of rain event forecasted to be greater than 0.25 inches except for application of preemergent herbicides; and after rain event where water is leaching or running or when water is running off-site).

- **Phase 1 facilities**: Does not demonstrate that it applies the stricter compliance standard based on technology or water quality criteria for Phase 1 facilities. Eliminate the current provision that allows publicly owned Phase 1 facilities to be covered under the MS4 permit. This provision has largely been unused during the current permit term and may cause some confusion because of the different compliance standard than for other MS4 programs.

- **Performance:** An appropriate performance standard to measure successful implementation is not included.

Possible Advancements

- Trash collection: Collect trash and debris from open channels twice a year (Aug-Oct; March-May) before and after the storm season, and create a voluntary program for collection of trash in natural stream channels.

- Priority catch-basin threshold: Permittees may lower the priority catch-basin classification threshold to be 25 percent full from 40 percent full for clean out. Permittees may submit mapping (preferably as a GIS layer) of all catch basins in a municipality and identify which are city-owned/ county-owned, and which are priority for frequent cleaning.

- Priority Projects below 1 acre: For construction projects between 5,000 square feet and less than 1 acre, Permittees may develop a checklist to identify projects that will need to implement construction and post-construction BMP controls.

- Contractor Self-Inspections: Permittees may require that contractors perform self-inspections before and after every rainfall event with 0.25 inch or more predicted or actual precipitation.

IV. Program for Industrial/ Commercial Inspection

Background

The purpose of the industrial/ commercial inspection program is to conduct site visits to priority businesses (Phase 1, automotive service, gas stations, restaurants) and to evaluate on-site business practices to ensure compliance with local storm water regulations. Inspections of industrial/ commercial facilities and enforcement of storm water requirements are crucial to the success of the program and maintaining support among the public.

The objective of the industrial/ commercial program can be achieved by: (i) establishing a single electronic database of all facilities to be inspected and a schedule for inspection; (ii) distributing to industry and business owners specific brochures on appropriate BMPs to minimize storm water pollution; (iii) conducting site visits to evaluate compliance with local storm water ordinances; (iv) implementing appropriate enforcement procedures and actions; and (v) establishing measurable goals to evaluate successful program implementation.

Permittees propose to continue implementation of the following components of the program for industrial/ commercial business inspection:

- Conduct educational site visits and distribute brochures
- Maintain a database on industrial/ commercial facilities visited

Deficiencies

The ROWD does not include:

- **Inspection Program**: The industrial/ commercial educational site visit program should be upgraded to an inspection and enforcement program, since Permittees have had five years to gain experience. The U.S. EPA requires this change [see letter from Alexis Strauss, Director, Water Division, USEPA, Region IX to Dennis A. Dickerson, Regional Board Executive Officer, dated December 19, 2000, which is attached and was also distributed at the January 2001 EAC Meeting].

- **Performance:** An appropriate performance standard to measure successful implementation.

Possible Advancements

- Tracking database: Consider using the educational site-visits database to create a tracking database for the inspection and enforcement program. The database should be streamlined and a single standard format used for ease of updating and coordination. Consider a web-based database. See suggestions for modifying and augmenting the database that are contained in the CSWMP Report of Effectiveness [July 31, 2000].

- Inspection program: Submit an industrial/ commercial facilities inspection and enforcement program for consideration. Key components may include: (i) a proposed schedule of inspections with frequencies; (ii) a proposed performance standard to evaluate successful implementation; (iii) inspection schedule tie-in with the critical sources findings, characteristics of the watershed, and known impacts on the receiving waters; and (iv) specifics on the use of a comprehensive database for tracking and appropriate modifications and augmentations.

V. Program for Development Planning

Background

Post-construction mitigation of storm water runoff in areas undergoing new-development or redevelopment is necessary because storm water from these areas significantly affects receiving water bodies. Studies indicate that prior planning and design for the minimization of pollutants in post-construction storm water is the most cost-effective approach to storm water quality management.

The objective of a program for new development planning is to ensure that new developments and redevelopment are designed to minimize or prevent adverse impacts on water quality from storm water discharges. Municipalities are required to develop, implement, and enforce the program to comply with storm water regulations. Federal regulations do not limit the categories

of development that may be subject to storm water mitigation requirements nor does it limit them to the nature of the approval action as defined under the California Environmental Quality Act (CEQA) or the National Environmental Protection Act (NEPA) [i.e. discretionary or ministerial].

The development planning program objective may be achieved by, (i) requiring the implementation of combinations of structural BMPs, treatment control BMPs, and source control BMPs, (ii) adopting an ordinance requiring the implementation of post-construction BMPs, (iii) providing a mechanism to ensure long-term maintenance and operation of treatment control and structural BMPs; (iv) revising General Plans and CEQA procedures to ensure that developments mitigate post-construction storm water runoff; and (iv) establishing measurable goals to evaluate successful program implementation.

Permittees have proposed to continue the following components,

- SUSMP requirements for development categories authorized by the State Water Resources Control Board Order No. 2000-11 and projects in environmentally sensitive areas;
- checklist to identify non-SUSMP projects that may require post-construction BMP controls and an urban storm water mitigation plan; and
- developer and contractor information program.

Deficiencies

The program is deficient because the SQMP does not:

- **CEQA Guideline Revisions**: Require completion of CEQA guidelines and checklist revision, if not already done so, for consideration and mitigation of the potential water quality impacts of new development and redevelopment no later than the date of permit adoption. This revision should have been done under the current permit term.

- **General Plans**: Require completion of revision to General Plans, if they have not already been done, to include watershed and storm water management considerations no later than date of permit adoption. This revision should have been done under the current permit term.

- **Developer Information**: The SQMP does not contain a program for Permittee to provide or make available to developers Development Planning Information that includes: (i) guidelines on BMP selection; (ii) guidelines on the siting and design of BMPs; (iii) Standard Urban Storm Water Mitigation Plans (SUSMPs); and (iv) guidance on post-construction storm water mitigation for non-SUSMP categories, no later than 90 days from the date of permit adoption.

- **Peak storm water discharge rate criteria:** Permittees need to establish numerical criteria to control post-development peak storm water runoff discharge rates to not exceed pre-development peak discharge rates where the discharge will result in potential downstream erosion and/or impair protect stream habitat. Permittees should work with the County of Ventura to develop criteria.

- **Performance:** An appropriate performance standard to measure successful implementation is not included

Possible Advancements

- Possible categories to add to the SUSMP: Extend SUSMP standards and post-construction storm water mitigation to ministerial (non-discretionary) projects. Also extend SUSMP standards to: (i) locations within or directly adjacent to or discharging directly to an environmentally sensitive areas; and (ii) heavy industrial development on one acre of more.

- Commercial/Industrial category: Lower the threshold for application of SUSMP requirements for commercial and industrial developments from 100,000 square feet to 1 acres, beginning March 8, 2003, to be consistent with USEPA Phase II regulations for small construction projects [See USEPA Fact Sheets – Small Construction; Construction Site Runoff; Post-Construction Runoff, which are attached]

- Retail gasoline outlets: Make the numerical BMP design criteria applicable to proposed medium and high-output retail gasoline outlet developments.

- Non-SUSMP listed projects: Use project characteristics and a checklist to identify additional development types for post-construction storm water runoff. The characteristics may include (i) vehicle or equipment fueling areas; (ii) vehicle or equipment maintenance areas; (iii) outdoor storage or handling of hazardous materials or waste; (iv) commercial or industrial waste handling or storage; (v) hillside location; (vi) outdoor manufacturing work areas; (vii) exposed animal confinement areas; and (viii) any other pollutant generating areas with the potential to be exposed to storm water runoff.

- Mitigation funding: Propose a funding mechanism for regional or watershed-based BMP solutions such as a storm water mitigation fund or "bank". Developers who obtain waivers from the numerical BMP design standards will in part fund the mitigation bank.

VII. Program for Development Construction

Background

Polluted storm water from construction sites often flow to MS4s and are discharged to receiving water bodies. Sediment is usually the main pollutant of concern although other pollutants that are generated from poor on site waste management practices can be a problem. These pollutants can impact natural waters by destroying habitats and causing siltation.

The objective of a program for development construction is to ensure that construction projects are (I) managed to minimize the potential for soil erosion and sediment transport, and (ii) to reduce pollutants generated during construction and post-construction.

The objective of the program may be achieved by, (I) adopting an ordinance requiring the implementation of proper erosion and sediment controls, and controls for other wastes; (ii) implementing procedures for site plan review of construction plans that consider potential for water quality impacts; (iii) implementing procedures for construction site inspection and enforcement of control measures; (iv) utilizing sanctions and penalties to ensure compliance; (v) establishing procedures for the receipt and consideration of information and non-compliance reports submitted by the public; (vi) identifying appropriate BMPs for implementation on construction sites; (vii) establishing measurable goals to evaluate successful program implementation.

Permittees propose to continue the following Development Construction program components:

- local storm water pollution prevention plans for projects less than five acres
- minimum control measures at all construction sites
- State storm water pollution prevention plan and notice of intent filing for construction projects five or more acres
- Brochures and information material for developers, construction affiliates, and the public
- Employee training

Deficiencies

The program is deficient because it does not include:

- **SWPPP Enforcement**: Permittees need to enforce SWPPP requirements at all sites under their municipal and MS4 permit authority, including sites under the State General Construction Activity Storm Water Permit, independent of the Regional Board's inspection program.

- **Performance:** An appropriate performance standard to measure successful implementation.

Possible Advancements

- Training: Tier employee training schedules to allow a completion time of six months for cities with a population less than 1 million and one year for cities with a population of 1 million or more.

- Regulation of Additional Construction Sites: Lower the threshold for storm water pollution prevention plans from 5 acres to "1 acre or more," to be consistent with USEPA Phase II regulations. [See USEPA Phase II Small Construction Projects Fact Sheet]. Also consider requiring such plans for high-risk projects that are within or discharging directly to or directly adjacent to an environmental sensitive area, are located in a hillside area; and/or are less than an acre – but need to be regulated as deemed necessary by priority criteria to be proposed by Permittees.

- Tracking database: Develop a construction inspection and enforcement tracking system, similar to the one for the industrial program. A standardized database may be created to identify projects subject to the construction program requirements and inspection and enforcement fields attached. The database will also enable measuring the performance and progress.

- Program detail: Provide detail on compliance inspection, follow-up procedures, fate of self-inspection forms, use of building code violation forms for storm water violations, and guidelines on sanctions.

- Preference: Emphasize the use of erosion control BMPs first and only then sediment control BMPs. Guidance materials about BMPs that may be considered for implementation should be made readily available through diverse media such as websites and public counters.

VIII. Program for Storm Water Monitoring in Los Angeles County

Background

Permittees implemented a successful comprehensive monitoring and assessment program during the current permit at two watersheds to better understand receiving water impacts. In addition they measured mass emissions at four rivers, conducted land-use pollutant load studies, and evaluated a couple of critical sources.

The objective of a monitoring program for Los Angeles County is to: (i) identify sources of storm water pollutants; (ii) assess impacts of storm water discharges on receiving waters; (iii) measure pollutant loads to waters of the U.S. and establish long-term trends; and (iv) evaluate the effectiveness of BMPs.

The objective of the storm water program may be achieved by: (i) monitoring critical sources and priority land-uses; (ii) profiling storm water discharge plumes and evaluating the causes of toxicity; (iii) conducting bioassessments of resident flora and fauna to assess the health of the ecosystem; (iv) measuring mass-emissions of pollutants to the coastline at river and stream mouths; and (v) evaluating the effectiveness of structural and treatment control BMPs.

Permittees propose to implement a monitoring program for Los Angeles County that includes:

- Landuse monitoring for selected pollutant parameters
- Mass emission monitoring at Ballona Creek, Malibu Creek, Los Angeles River, Dominguez Channel and San Gabriel River for selected parameters
- Plume profile, bioassessment, sediment fate and transport, and storm water toxicity at San Pedro Bay and Santa Monica Bay
- Wet and dry weather flow toxicity in the Los Angeles River, Coyote Creek, and Dominguez Channel
- Impact of aerial deposition on inland watersheds

- Co-participation with the Southern California Coastal Water Research Project pathogen modeling study; and with the Coastal Commission and the U.S. Army Corp to manage contaminated sediments

Deficiencies

The proposed monitoring program is deficient as follows:

- **Trash monitoring**: Does not implement a baseline trash-monitoring program for watersheds not presently listed for impairment from trash.

- **Treatment Control BMP Effectiveness**: Does not evaluate the effectiveness of structural and treatment control BMPs at critical sources and as watershed improvement projects.

Possible Advancements

- Source Identification Strategy: Submit strategies for source identification and reduction of zinc and copper in the Ballona Creek watershed and nutrients in the Malibu watershed, and for pollutants scheduled in respective watersheds within the next 5 years for Total Maximum Daily Load (TMDL) development.

- New Development Controls: Conduct a study to measure the effectiveness of new development and redevelopment standards in improving the quality of storm water discharges.

- Coordination: Coordinate the monitoring program with the California Department of Transportation (Caltrans), the Santa Monica Bay Restoration Program, and the Southern California Coastal Water Research Project (SCCWRP) Regional Monitoring Program.

IX. Miscellaneous

Small Municipality Temporary Delay: Municipalities with a population of less than 100,000 (1990 census), who availed themselves of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 temporary delay provisions for publicly operated Phase 1 industrial facilities and construction projects, will be required to obtain coverage for storm water discharges no later than March 10, 2003.

Administrative Review Procedure: The Administrative Review procedure followed in the current permit term is likely to be revised significantly, with 'Notice of Intent to Meet and Confer' and other administrative review provisions eliminated. The USEPA has commented that MS4 permits should not include such administrative steps that restrain the ability of the permitting authority to enforce the federal Clean Water Act.

WMAPs: The requirement to develop detailed Watershed Management Area Plans (WMAPs) is likely to be eliminated, because WMAPs submitted with the ROWD did not demonstrate that municipalities intend to tailor implementation to accommodate watershed characteristics. Permittees are invited to submit a separate list of watershed specific programs that are different than the countywide baseline for consideration [or reference the WMAP page]. Such sub-programs may de-emphasize some countywide program components, strengthen others, or offer a wholly new augmentation.

TMDL Provisions: The tentative permit is likely to include provisions that will require Permittees to: (i) modify the SQMP within 180 days of approval of a TMDL, pursuant to the procedures established under state and federal law and regulations, and (ii) implement a program to achieve pollutant load reductions as specified in the TMDL.

From: "Young, Jr., Rufus C." <ryoung@BWSLAW.COM>
To: "'Dickerson, Dennis'" <DDICKERS@rb4.swrcb.ca.gov>
Date: 3/6/01 3:03PM
Subject: Suggested Revisions to the Draft Report of Waste Discharge for the Reissuance of the Municipal Storm Water Permit for Los Angeles County and Cities in Los Angeles County Required for Conformity with the Clean Water Act and Implementing Regulations

Dennis: On behalf of the cities of Alhambra and Santa Clarita, I compiled a list of proposed revisions to the Draft WDR/NPDES Storm Water permit. In my opinion, these revisions are required for consistency with the Clean Water Act and the EPA's implementing regulations at 40 C.F.R. 122.26. They are based on my review of what I understand is the version submitted to you on January 31, 2001, for consideration. I believe these views are also shared by a number of other cities and their respective city attorneys.

Comments on Report of Waste Discharge (ROWD) for Reissuance of the Los Angeles County Municipal Storm Water Permit

1. A glaring example of the inconsistency in the terminology used in the Draft Permit with the EPA's terminology is the use of the term "stormwater" [one word] in the Draft Permit rather than the EPA's term, "storm water" [two words]. To reduce the inconsistencies between the Draft Permit and both the Clean Water Act and the US EPA storm water regulations, the EPA term, "storm water" [two words] not "stormwater" [one word] should be used throughout the document.

2. The Draft Permit's FINDINGS, under "Nature of Discharges and Sources of Pollutants" does not comply with the requirements of 40 CFR § 122.27(d)(iii) and (iv) regarding source identification and general discharge characterization of the pollutants addressed by this Draft Permit.

3. Under "Permit Background" this section should be further defined to meet the requirements in 40 CFR § 122.26 (d)(iii).

4. In the first paragraph under "Coverage" the population figures (1990 census) are very stale. Current figures can be obtained from the State of California website.

5. In the Draft Permit's FINDINGS section, the section heading "Coverage" should be replaced with a new title, "Coverage and Exemptions" as there are findings regarding exemptions to the coverage of this Draft Permit.

6. In the same section, the Draft Permit lacks findings regarding pollutants over which the Permittees have no control. The second paragraph enumerates pollutants from activities which the Permittees cannot control, but then goes on to state that Permittees "can implement measures to attempt to reduce entry of these pollutants into storm water. This is inconsistent and illogical. Permittees cannot prevent these pollutants from getting into the storm water (which is what runs off streets when it rains). They may be able to attempt to reduce the discharge into waters of the United States and the States.

7. In the first paragraph under "Federal, State and Regional Regulations" (and throughout the document) the citation to the "Federal Clean Water Act should be changed to make the "F" in federal lower case, and

adding "33 U.S.C. Sections 1251-1387." Also, the cite to the Code of Federal Regulations is incomplete. It should be changed to "40 CFR Part 122" and the redundant "Code of Federal Regulations" should be deleted.

8. In the same paragraph, the cites to the Federal Register should include volume and page number, as in 56 Fed.Reg. 12345.

9. Also in the first paragraph under "Federal, State and Regional Regulations" it appears that the drafter was not aware that the U.S. EPA has defined the Municipal Separate Storm Sewer Systems (MS4) into three different categories: large, medium and small. These terms should be incorporated for clarity and consistency purposes.

10. In the second paragraph under "Federal, State and Regional Regulations" there is a singular-plural disconnect. I suggest revising it to read "...states with approved regulatory programs."

11. In the third paragraph under "Federal, State and Regional Regulations" the cite to CZARA is incomplete, as it fails to indicate just what CZARA amended. Consider changing the period after CZARA to a comma and adding "to the Coastal Zone Management Act of 1972, 16 U.S.C. Sections 1451-1465."

12. In the sixth paragraph under "Federal, State and Regional Regulations" the term "Watershed Management Approach" [first-letter caps in original] is used, apparently as a defined term, but the term is not defined. I recommend changing the first letter caps to lower case in the term "watershed management approach" throughout the document.

13. The eleventh paragraph under "Federal, State and Regional Regulations" paraphrases the California Water Code (CWC) § 13263(a). This paraphrase of the Code fails to include the cross-reference to CWC § 13241. This should be corrected by adding the missing language: "and the provisions of CWC § 13241."

14. In the second paragraph under "Other Findings" I must point out that "facilities" do not perform fueling. Consider revising "or facilities which perform vehicle repair, maintenance or fueling...." to read "or facilities at which vehicle repair, maintenance, or fueling is performed...."

15. In the fourth paragraph under "Other Findings" consider adding "the" before "Los Angeles Flood Control District."

16. In the fifth paragraph under "Other Findings" please revise the second line to state "through Municipal Separate Storm Sewer Systems. These difficulties include, but are not limited to, the intermittent and variable nature of discharges...."

17. In Part 1, DISCHARGE PROHIBITION, in the list "not identified as a significant source of pollutants," for the sake of clarity, change "individual residential car washing" to "Individual, non-commercial, car washing in residential areas."

18. In Part 2, RECEIVING WATER LIMITATIONS, in the first paragraph "water quality objectives" appears to be used as a defined term, although Part 5, DEFINITIONS, does not define this term.

19. In Part 2, RECEIVING WATER LIMITATIONS, the second paragraph states that "Discharges from the MS4 of storm water, or non-storm water, for which a Discharger is responsible, shall not cause ...." This statement is circular, as it is the inability of the discharges (permittees) to control things which are beyond their control (e.g. PAHs, lead from fuels, etc.) which is precisely what allegedly contributes to the impairment of the receiving waters. If this finding is true, then there is no need for this Draft Permit.

20. In Part 2, RECEIVING WATER LIMITATIONS, in the third paragraph, second sentence, the term "receiving water limitations" is used as a defined term, but it is not defined, and is therefore dangerously elastic, potentially exposing permittees to CWA citizen suit liability.

21. Under "Responsibilities of the Permittees" the item regarding implementation of the SQMP should be revised to read "Implement the SQMP upon approval by the Executive Officer and adoption by its governing body."

22. Further, in the same paragraph, the eight prohibited discharges listed should be further defined in terms of classifications of facilities or appropriate SIC code sections defining the various types of gas stations, auto repair garages, or other types of automotive service facilities. These eight prohibitions appear to address the cleaning of these facilities or items at these facilities and should be restated in a more clear fashion. Note that these go well beyond what the EPA regulations require.

23. In Part 3, STORM WATER QUALITY, Section B, first paragraph, "[a] Permittee is required only to comply with the requirements of this Order applicable to discharges which originate from places within its boundaries over which it had authority to enforce the requirements of this order." This statement does not account for the possibility of pollutants which may be found in storm water which "originates" outside a given city, but which flows into a Permittee's boundaries.. Nor does this address whether or not a Permittee is required to and/or has the authority to enforce the requirements of this Order against discharges which do not originate in its boundaries.

24. In Part 3, "STORM WATER QUALITY...," Section B-4, the term "technically knowledgeable representative" is unclear and should be further defined and should not be construed to preclude participation by attorneys knowledgeable with the CWA and the EPA storm water regulations.

25. In PART 3, in the third "responsibility" of the "Principal Permittee" delete the second sentence and replace it with "Any permittee has the right to negotiate directly with the Regional Board." Reason: The EAC has no authority under California Law to act on behalf of, and in place of, any City which is a permittee. Provide for a JPA if necessary, but the approach in the WDR Draft, to substitute the EAC for the permitee, by Permit fiat, is questionable at best.

26. In Part 3, Section E, "General Requirements" the third paragraph requires that the SQMP comply with the applicable requirements of 40 CFR § 122.26(d)(2) which has a lengthy and a comprehensive list of applicable requirements that should be defined and included under "General Requirements."

27. In Part 3, Section H "Legal Authority" is a paraphrased, but over-broad and inaccurate restatement of 40 CFR § 122.26(d)(2)(i). That section should be quoted and should be cited to for legal authority.

28. Under Part 3, "Legal Authority" a statement regarding 40 CFR § 122.26(d)(2)(i)(A) should be included to discuss the legal authority for permittees to control, through ordinance, permit, contract or other similar means, a contribution of pollutants to the MS4 by storm water discharges associated with industrial activities and from discharges from the sites of industrial activities. Moreover, under the heading "Legal Authority" the first sentence is garbled.

"Permittees shall possess the necessary legal authority to prohibit discharges, to the maximum extent practicable, the contribution of pollutants to the storm drain system from storm water discharges, including, but not limited to:"

"Prohibit Discharges?" Does this mean that permittees are to have the authority to prohibit discharges? Or instead to prohibit the contribution of pollutants, to the maximum extent practicable? In this regard, please note that the governing US EPA implementing regulation, 40 CFR 122.26(d)(2)(i)(A) requires not prohibition of discharges, but "control ... [of] the contribution of pollutants" Note also that the EPA requirements are limited to "discharges associated with industrial activity and the quality of storm water discharges discharged from sites of industrial activity. The EPA regulations say nothing about "other types of automotive service facilities are cleaned."

In any event, if the Draft Permit is to go beyond the US EPA storm water permit requirements, and address "gas stations, auto repair garages, or other types of automotive service facilities" I strongly recommend revising the somewhat vague "gas stations, auto repair garages, or other types of automotive service facilities" category to the more specific "Discharge of wash waters resulting from the hosing or cleaning of gas stations, automotive repair shops or other similar automotive service facilities in any one of the following Standard Industrial Classification ("SIC") codes: 5013, 5014, 5541,7532-7534 or 7536-7539."

29. In Part 3, "Legal Authority" the defined terms "illicit discharges" and "illicit connections" are used. They are defined terms and should have the first-letters capitalized to indicate use of a defined term. Additionally, the authority for the prohibition of Illicit Discharges and Illicit Connections is 40 CFR § 122.26(d)(2)(i)(B) which should be cited in this paragraph.

30. Also in the "Legal Authority," the terms should be further defined. For example, the "state or federally banned pesticide, fungicide or herbicide" should refer to or incorporate an EPA list which defines or lists these banned substances. Further, the term "food wastes" is a vague term. It might be better defined as: "food and food-related trash including but not limited to restaurant kitchen waste and polluted waters from such sites".

31. In the interests of clarity, consider changing the "Food wastes" prohibition to "Discharges of food and food-related wastes, including, but not limited to grease, restaurant kitchen mat wash and rinse water and trash container wash and rinse water."

32. The "Legal Authority" subsection re compliance with contracts,

ordinances, etc. restates 40 CFR § 122.26(d)(2)(i)(E) and therefore, should cite that section.
33. The "Legal Authority", subsection re inspections restates 40 CFR § 122.26(d)(2)(i)(F) and therefore, should cite that section.
34. The "Legal Authority" section fails to include the authority required by 40 CFR § 122.26(d)(2)(i)(D).

35. In Part 4, SPECIAL PROVISIONS, the section "Programs for Industrial/Commercial Businesses" fails to provide any definition for "Automotive Services" and "Food Service Facilities". Failure to define these terms is makes them dangerously elastic, potentially exposing permittees to CWA citizen suit liability.

36. In Part 4, SPECIAL PROVISIONS, under the heading "Programs for Development Construction" the third paragraph requiring that Permittees shall "ensure the following minimum requirements are met" does not provide what authority the Permittees have to impose these requirements. I recommend including a statement of the Permittees authority.

37. Under "Programs for Industrial/Commercial Businesses" the provision that "Each Permittee shall visit a maximum of 125 such businesses during the term of the permit" would seem to prohibit a permittee from visiting more than that number. Limiting a municipal permitee's exercise of its police powers, through the issuance of a permit by a state agency, poses constitutional issues, and this limitation should be deleted. Could it be that what is intended is to require permittees to visit 125 such businesses, but to permit them to visit more, if desired.

38. Under the heading "Municipal Agency Activities" the use of the term "new fueling areas" implies that this condition is to be limited to recently constructed fueling locations rather than the more inclusive term "fueling areas." Just how "new" is "new?"

39. Part 5, DEFINITIONS. Many of the definitions in Part 5 appear to be identical to the definitions section found in the LOS ANGELES COUNTY MUNICIPAL STORM WATER PERMIT ORDER NO. 96-054, NPDES NO. CAS614001. A comparison of the two definition sections reveals that while a majority of the definitions are identical, some definitions such as Countywide Storm Water Management Plan (CSWMP), Effective Prohibition, Storm Water Management Program have been excluded in the instant NPDES Draft Permit.

40. Many of the definitions in Part 5, DEFINITIONS, are to be overly broad and lack the precision of the U.S. EPA regulations. This obviously has the potential to create confusion and subjects the Draft Permit to varying interpretation regarding the conduct required and conduct prohibited. For example, the definition of "Construction Activity" fails to provide a limitation regarding the size of the construction activity which is to be subjected to the requirements of the Draft Permit. The Principal Permittee and the EAC should provide justification for imposing more stringent requirements, or should use the EPA terms.

41. PART 5, DEFINITIONS. Many of the definitions (for example "Illicit Discharge") are inconsistent with the US EPA's storm water program definitions. Moreover, in at least one instance, in the definition of "Illicit Discharge" a defined term, "storm drain system" is used, without the first-letter capitalization which indicates that the meaning ascribed to

a defined term is intended, thereby creating the possibility that some other meaning is intended.

42. Many of the definitions in PART 5, DEFINITIONS, appear overly broad and lack the precision necessary for those subject to the Draft Permit to be able to determine what conduct is permitted and what is prohibited. For example, the definition of "Illicit Disposal: Any disposal, either intentionally or unintentionally, of a material(s) or waste(s) that can pollute stormwater or urban runoff." This goes far beyond the reach of the Clean Water Act. The Congress, in drafting the Clean Water Act prohibited the discharge of "Pollutants" a term which it defined. Oddly, the term "Pollutant" is defined in PART 5, DEFINITIONS, but that definition is not used in the definition of "Illicit Disposal" which uses the vague "can pollute" and therefore might be construed as meaning something other than a "Pollutant." This lack of precision invites disagreement and, potentially, litigation. The definition of "Illicit Disposal" should be changed to "the unpermitted disposal of a Pollutant into a Municipal Separate Storm Sewer." The EAC and principal Permittee should explain to the permittees why the EPA definition is not being used.

43. In Part 5, DEFINITIONS, the definition of "Illicit Discharge" fails to include "discharge resulting from fire fighting activities" as one of the exceptions to non-storm water discharges that are exempted, pursuant to 40 CFR § 122.26(b)(2).

44. In Part 5, DEFINITIONS, the definition "Pollutants of Concern: constituents identified in the annual monitoring report as being 'constituents of concern' or 'pollutants of concern'" is circular and vague.

45. In Part 5, DEFINITIONS, the definition of "Receiving Water Objectives" defines the objectives of the receiving waters by referring to the California Ocean Plan, the Los Angeles Basin Plan and the California Toxic Rule. These plans should be cited in a clearer fashion to indicate which plans are actually setting the receiving water objectives.

46. In Part 5, DEFINITIONS, the definition of "Storm Drain System" is overly broad and lacks precision found in U.S. EPA standards. Further, 40 CFR § 122.26(b)(8) provides a more comprehensive definition of "Storm Drain System" and I recommend that the EPA definition be used.

47. In Part 5, DEFINITIONS, the definition of "Storm Drain System" is far broader than the definition of "Municipal Separate Storm Sewer" in the US EPA storm water program definitions. Unlike the EPA definition, which is limited to "man-made channels, or storm drains" the PART 5, DEFINITION of "Storm Drain System" includes all "natural or artificial drains, channels and watercourses." The EPA definition should be used, or it should be explained to the permittees on whose behalf this document is prepared, why the EPA definition is not being used.

48. Oddly, the definition of "Stormwater" in PART 5, DEFINITIONS, varies from that in the EPA storm water program definitions, and seems to leave out the essential element of "runoff" although that term is used in the definition of "Stormwater Runoff." [After all, that is what this program is all about, the runoff, not the falling to Earth. I recommend that the EPA definition be used.

49. Part 6, STANDARD PROVISIONS, fails to include a description or requirement for monitoring and record keeping as required by 40 CFR § 122.41(J).

50. Additionally, in Part 6, STANDARD PROVISIONS, the undefined, but very important term "wastes" is used. Failure to define this term makes it dangerously elastic, potentially exposing permittees to CWA citizen suit liability. I recommend using the defined term "Pollutants".

51. Additionally, in Part 6, STANDARD PROVISIONS, under the heading "Duty to Mitigate" the first paragraph goes beyond the U.S. EPA standards and requires a "Discharger" to take steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment. This requirement goes far beyond the U.S. EPA standards limiting the duty to mitigate to only those discharges in violation of the subject matter of the Draft Permit. I recommend the term "in violation of this permit" be inserted prior to "has a reasonable" to parallel the requirements of the U.S. EPA or justification for the more stringent requirements should be provided.

52. Part 6, STANDARD PROVISIONS. In the section "Inspection and Injury" the four obligations in which the Permittees must allow authorized representatives to inspect, the Draft Permit fails to include a provision requiring that such access is to be conducted at a reasonable time. 40 CFR § 122.41(i) requires that access to all documents as may be required by law shall be conducted at "reasonable times." I recommend that a "reasonable time" condition be included in all four subsections.

Let me know if you have any questions. I'll be happy to try to answer them and to work with you and your staff.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

DEC 19 2000

In Reply
Refer to: W

Dennis A. Dickerson
Executive Officer
California Regional Water Quality Control Board,
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Dear Mr. Dickerson:

The letter is in follow up to our meeting on October 5, 2000 concerning the NRDC Petition to Withdraw the NPDES storm water permit program administered by the Los Angeles Regional Board. One of the NRDC's principal concerns with the Regional Board's program is the alleged absence of an effective program for controlling pollutants in storm water discharges from industrial facilities. NRDC also recognizes, however, that the root of the problem is the lack of adequate staffing at the Regional Board to implement the program. At the October 5 meeting, we suggested that the upcoming MS4 permit reissuance for Los Angeles County require that the MS4 permittees provide more assistance to the Regional Board in this regard. We also indicated that we would provide this letter of support to the Regional Board for such requirements.

EPA's storm water permit application regulations of November 16, 1990 (55 Fed. Reg. 47990) set forth the permit application requirements for industries and municipalities and also provide guidance concerning the implementation of the program over the longer term. The storm water regulations envision a cooperative effort on the part of the NPDES permitting authority and permitted MS4s in the implementation of the industrial storm water program (55 Fed. Reg. 47997). The regulations at 40 CFR 122.26(d)(2)(iv)(C) also specifically require that MS4 permittees develop and implement controls on industrial sources which discharge into the storm sewer system, including:

> "a description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system."

The current MS4 permit for Los Angeles County requires "educational visits" by MS4 personnel to assist industrial/commercial facilities in complying with local ordinances and prohibitions. We understand that the intent of this particular requirement was to provide time for

the permittees to gain experience in controlling pollutants in storm water discharges from these facilities. Now that the permittees have had five years to gain such experience, we recommend that the next permit explicitly require that the permittees require compliance with local ordinances and implement an effective enforcement program to ensure compliance. For industrial facilities, such a requirement would be fully consistent with EPA regulations at 40 CFR 122.26(d)(2)(iv)(C). We also believe that the Regional Board's extension of the program to commercial facilities is consistent with EPA regulations at 40 CFR 122.26(d)(2)(iv)(A); however, NRDC's concerns are primarily related to industrial facilities.

Since the intent and requirements of local MS4 ordinances are usually similar (but perhaps less detailed) to the requirements of the State's general NPDES permit for industries, the above recommendation should significantly assist the Regional Board in more effectively controlling pollutants in storm water discharges from industrial (and commercial) facilities. As noted above, NRDC's concerns with the Regional Board's program are fundamentally resource-related, and by utilizing the resources of the MS4 permittees more effectively, this should help to address NRDC's concerns.

It should also be noted that the above recommendation would be nothing new for California MS4 permits. For example, the MS4 permits issued in 1996 for Orange and Riverside Counties already include explicit requirements for enforcement of local ordinances for storm water pollution control. Detailed enforcement requirements for local ordinances have also been proposed by the San Diego Regional Board for the upcoming reissuance of the San Diego County MS4 permit.

Should you have any questions regarding this matter, please call me at (415) 744-1860, or refer your staff to Eugene Bromley of the CWA Standards and Permits Office at (415) 744-1906.

Sincerely,

Alexis Strauss
Director, Water Division

cc: Xavier Swamikannu, Los Angeles RWQCB
David Beckman, NRDC

United States Environmental Protection Agency
Office of Water (4203)
EPA 833-F-00-008
January 2000
Fact Sheet 2.6

EPA

Storm Water Phase II Final Rule

Construction Site Runoff Control Minimum Control Measure

This fact sheet profiles the Construction Site Runoff Control minimum control measure, one of six measures that the operator of a Phase II regulated small municipal separate storm sewer system (MS4) is required to include in its storm water management program to meet the conditions of its National Pollutant Discharge Elimination System (NPDES) permit. This fact sheet outlines the Phase II Final Rule requirements and offers some general guidance on how to satisfy them. It is important to keep in mind that the small MS4 operator has a great deal of flexibility in choosing exactly how to satisfy the minimum control measure requirements.

Why Is The Control of Construction Site Runoff Necessary?

Polluted storm water runoff from construction sites often flows to MS4s and ultimately is discharged into local rivers and streams. Of the pollutants listed in Table 1, sediment is usually the main pollutant of concern. Sediment runoff rates from construction sites are typically 10 to 20 times greater than those of agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation, and the contribution of other pollutants from construction sites, can cause physical, chemical, and biological harm to our nation's waters. For example, excess sediment can quickly fill rivers and lakes, requiring dredging and destroying aquatic habitats.

Table 1

Pollutants Commonly Discharged From Construction Sites
Sediment
Solid and sanitary wastes
Phosphorous (fertilizer)
Nitrogen (fertilizer)
Pesticides
Oil and grease
Concrete truck washout
Construction chemicals
Construction debris

What Is Required?

The Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement, and enforce a program to reduce pollutants in storm water runoff to their MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. The small MS4 operator is required to:

- ❑ Have an ordinance or other regulatory mechanism requiring the implementation of proper erosion and sediment controls, and controls for other wastes, on applicable construction sites;
- ❑ Have procedures for site plan review of construction plans that consider potential water quality impacts;
- ❑ Have procedures for site inspection and enforcement of control measures;
- ❑ Have sanctions to ensure compliance (established in the ordinance or other regulatory mechanism);

- ❑ Establish procedures for the receipt and consideration of information submitted by the public; and
- ❑ Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure. Suggested BMPs (i.e., the program actions/activities) and measurable goals are presented below.

What Are Some Guidelines for Developing and Implementing This Measure?

Further explanation and guidance for each component of a regulated small MS4's construction program is provided below.

Regulatory Mechanism

Through the development of an ordinance or other regulatory mechanism, the small MS4 operator must establish a construction program that controls polluted runoff from construction sites with a land disturbance of greater than or equal to one acre. Because there may be limitations on regulatory legal authority, the small MS4 operator is required to satisfy this minimum control measure only to the maximum extent practicable and allowable under State, Tribal, or local law.

Site Plan Review

The small MS4 operator must include in its construction program requirements for the implementation of appropriate BMPs on construction sites to control erosion and sediment and other waste at the site. To determine if a construction site is in compliance with such provisions, the small MS4 operator should review the site plans submitted by the construction site operator before ground is broken.

Site plan review aids in compliance and enforcement efforts since it alerts the small MS4 operator early in the process to the planned use or non-use of proper BMPs and provides a way to track new construction activities. The tracking of sites is useful not only for the small MS4 operator's recordkeeping and reporting purposes, which are required under their NPDES storm water permit (see Fact Sheet 2.9), but also for members of the public interested in ensuring that the sites are in compliance.

Inspections and Penalties

Once construction commences, BMPs should be in place and the small MS4 operator's enforcement activities should begin. To ensure that the BMPs are properly installed, the small MS4 operator is required to develop procedures for site inspection and enforcement of control measures to deter infractions. Procedures could include steps to identify priority sites for inspection and enforcement based on the nature and extent of the construction activity, topography, and the characteristics of soils and receiving water quality. Inspections give the MS4 operator an opportunity to provide additional guidance and education, issue warnings, or assess penalties. To conserve staff resources, one possible option for small MS4 operators is to have these inspections performed by the same inspector that visits the sites to check compliance with health and safety building codes.

Information Submitted by the Public

A final requirement of the small MS4 program for construction activity is the development of procedures for the receipt and consideration of public inquiries, concerns, and information submitted regarding local construction activities. This provision is intended to further reinforce the public participation component of the regulated small MS4 storm water program (see Fact Sheet 2.4) and to recognize the crucial role that the public can play in identifying instances of noncompliance.

The small MS4 operator is required only to *consider* the information submitted, and may not need to follow-up and respond to every complaint or concern. Although some form of enforcement action or reply is not required, the small MS4 operator is required to demonstrate acknowledgment and consideration of the information submitted. A simple tracking process in which submitted public information, both written and verbal, is recorded and then given to the construction site inspector for possible follow-up will suffice.

What Are Appropriate Measurable Goals?

Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, should reflect the needs and characteristics of the operator and the area served by its small MS4. Furthermore, they should be chosen using an integrated approach that fully addresses the requirements and intent of the minimum control measure. An integrated approach for this minimum measure could include the following measurable goals:

Target Date	Activity
1 year.....	Ordinance or other regulatory mechanism in place; procedures for information submitted by the public in place.
2 years.....	Procedures for site inspections implemented; a certain percentage rate of compliance achieved by construction operators
3 years.....	Maximum compliance with ordinance; improved clarity and reduced sedimentation of local waterbodies.
4 years.....	Increased numbers of sensitive aquatic organisms in local waterbodies.

United States Environmental Protection Agency | Office of Water (4203) | EPA 833-F-00-013 Fact Sheet 3.0

EPA

Storm Water Phase II Final Rule

Small Construction Program Overview

The 1972 amendments to the Federal Water Pollution Control Act, later referred to as the Clean Water Act (CWA), prohibit the discharge of any pollutant to navigable waters of the United States from a point source unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit. Efforts to improve water quality under the NPDES program traditionally have focused on reducing pollutants in industrial process wastewater and municipal sewage treatment plant discharges. Over time, it has become evident that more diffuse sources of water pollution, such as storm water runoff from construction sites, are also significant contributors to water quality problems.

Sediment runoff rates from construction sites are typically 10 to 20 times greater than those from agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction activity can contribute more sediment to streams than can be deposited over several decades, causing physical and biological harm to our Nation's waters.

In 1990, EPA promulgated rules establishing Phase I of the NPDES storm water program. Phase I addresses, among other discharges, discharges from large construction activities disturbing 5 acres or more of land. Phase II of the NPDES storm water program covers small construction activities disturbing between 1 and 5 acres. Phase II became final on December 8, 1999 with small construction permit applications due by March 10, 2003 (specific compliance dates will be set by the NPDES permitting authority in each State). This fact sheet outlines the construction activities covered by Phase I and Phase II, including possible waiver options from Phase II coverage, and the Phase II construction program requirements.

Who Is Covered Under the Phase I Rule?

Sites Five Acres and Greater

The Phase I NPDES storm water rule identifies eleven categories of industrial activity in the definition of "storm water discharges associated with industrial activity" that must obtain an NPDES permit. Category (x) of this definition is construction activity, commonly referred to as "large" construction activity. Under category (x), the Phase I rule requires all ***operators*** of construction activity ***disturbing 5 acres or greater of land*** to apply for an NPDES storm water permit. Operators of sites disturbing less than 5 acres are also required to obtain a permit if their activity is part of a "larger common plan of development or sale" with a planned disturbance of 5 acres or greater. "Disturbance" refers to exposed soil resulting from activities such as clearing, grading, and excavating. Construction activities can include road building, construction of residential houses, office buildings, industrial sites, or demolition.

What Is Meant by a "Larger Common Plan of Development or Sale"?

As defined in EPA's NPDES storm water general permit for large construction activity, a "larger common plan of development or sale" means a contiguous area where multiple separate and distinct construction activities are occurring under one plan (e.g., the operator is building on three half-acre lots in a 6-acre development). The "plan" in a common plan of development or sale is broadly defined as any announcement or piece of documentation

(including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that construction activities may occur on a specific plot.

What Is the Definition of an "Operator" of a Construction Site?

As defined in EPA's storm water general permit for large construction activity, an "operator" is the party or parties that has:

- Operational control of construction project plans and specifications, including the ability to make modifications to those plans and specifications; *or*
- Day-to-day operational control of those activities that are necessary to ensure compliance with a storm water pollution prevention plan (SWPPP) for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

There may be more than one party at a site performing the tasks related to "operational control" as defined above. Depending on the site and the relationship between the parties (e.g., owner, developer, contractor), there can either be a single party acting as site operator and consequently be responsible for obtaining permit coverage, or there can be two or more operators, all obligated to seek permit coverage. It is important to note that NPDES-authorized States may use a different definition of "operator" than the one above.

How Is the Phase II Construction Rule Related to the Phase I Construction Rule?

In 1992, the Ninth Circuit court remanded for further proceedings portions of EPA's existing Phase I storm water regulation related to the category (x) discharges from large construction activity (NRDC v. EPA, 966 F.2d at 1292). EPA responded to the court's decision by designating under Phase II storm water discharges from construction activity disturbing less than 5 acres as sources that should be regulated to protect water quality. The Phase II Rule designates these sources as "storm water discharges associated with *small construction* activity," rather than as another category under "storm water associated with *industrial* activity."

Who Is Covered Under the Phase II Construction Rule?

Sites Between One and Five Acres

The Storm Water Phase II Rule automatically designates, as small construction activity under the NPDES storm water permitting program, all operators of construction site activities that result in a ***land disturbance of equal to or greater than 1 and less than 5 acres***.

Sites Less Than One Acre

Site activities disturbing less than 1 acre are also regulated as small construction activity if they are part of a larger common plan of development or sale with a planned disturbance of equal to or greater than 1 acre and less than 5 acres, or if they are designated by the NPDES permitting authority. The NPDES permitting authority or EPA Region may designate construction activities disturbing less than 1 acre based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to waters of the United States.

Are Waivers Available for Operators of Regulated Construction Activity?

Yes, but only for small, not large, construction activity. Under the Phase II Rule, NPDES permitting authorities have the option of providing a waiver from the requirements to operators of small construction activity who certify to either one of two conditions:

1. Low predicted rainfall potential (i.e., activity occurs during a negligible rainfall period), where the rainfall erosivity factor ("R" in the Revised Universal Soil Loss Equation [RUSLE]) is less than 5 during the period of construction activity; *or*
2. A determination that storm water controls are not necessary based on either:
   - (A) A "total maximum daily load" (TMDL) that address the pollutant(s) of concern for construction activities; **OR**
   - (B) An equivalent analysis that determines allocations are not needed to protect water quality based on consideration of instream concentrations, expected growth in pollutant concentrations from all sources, and a margin of safety.

Pollutants of concern include sediment or a parameter that addresses sediment (such as total suspended solids, turbidity, or siltation) and any other pollutant that has been identified as a cause of

The intent of the waiver provision is to waive only those sites that are highly unlikely to have a negative effect on water quality. Therefore, before applying for a waiver, operators of small construction activity are encouraged to consider the potential water quality impacts that may result from their project and to carefully examine such factors as proximity to water resources and sensitivity of receiving waters.

a. *What is the Rainfall Erosivity Factor in Waiver ❶?*

Waiver ❶ uses the Rainfall Erosivity Factor to determine whether the potential for polluted discharge is low enough to justify a waiver from the requirements. It is one of six variables used by the Revised Universal Soil Loss Equation (RUSLE)—a predictive tool originally used to measure soil loss from agricultural lands at various times of the year on a regional basis—to predict soil loss from construction sites. The Rainfall Erosivity Factor waiver is time-sensitive and is dependent on when during the year a construction activity takes place, how long it lasts, and the expected rainfall and intensity during that time. For information about the rainfall erosivity waiver, see Fact Sheet 3.1. Charts detailing the value of the Rainfall Erosivity Factor by particular regions can be found in Chapter 2 of the RUSLE user's guide, which can be downloaded at: http://www.epa.gov/owm/sw/phase2.

b. *What is a "TMDL" in Waiver ❷?*

For impaired waters where technology-based controls required by NPDES permits are not achieving State water quality standards, the CWA requires implementation of the TMDL process. The TMDL process establishes the maximum amount of pollutants a waterbody can assimilate before water quality is impaired, then requires that this maximum level not be exceeded.

A TMDL is done for each pollutant that is found to be contributing to the impairment of a waterbody or a segment of a waterbody. To allow a waiver for construction activities, a TMDL would need to address sediment, or a parameter that addresses sediment such as total suspended solids, turbidity, or siltation. Additional TMDLs addressing common pollutants from construction sites such as nitrogen, phosphorus, and oil and grease also may be necessary to ensure water quality protection and allow a waiver from the NPDES storm water program.

A TMDL assessment determines the source or sources of a pollutant of concern, considers the maximum allowable level of that pollutant for the waterbody, then allocates to each source or category of sources a set level of the pollutant that it is allowed to discharge into the waterbody. Allocations to point sources are called wasteload allocations.

How Would an Operator Qualify for, and Certify to, Waiver ❷?

EPA expects that when TMDLs, or equivalent analyses, are completed, there may be a determination that certain classes of sources, such as small construction activity, would not have to control their contribution of pollutants of concern to the waterbody in order for the waterbody to be in attainment with water quality standards (i.e., these sources were not assigned wasteload allocations). In such a case, to qualify for waiver ❷, the operator of the construction site would need to certify that its construction activity will take place, and the storm water discharges will occur, within the area covered either by the TMDLs or equivalent analysis. A certification form would likely be provided by the NPDES permitting authority for this purpose.

What Does the Phase II Construction Program Require?

The Phase II Final Rule requires operators of Phase II small construction sites, nationally, to obtain an NPDES permit and implement practices to minimize pollutant runoff. It is important to note that, locally, these same sites also may be covered by State, Tribal, or local construction runoff control programs (see Fact Sheets 2.6 and 2.7 for information on the Phase II small MS4's construction program). For the Phase II small construction program, EPA has taken an approach similar to Phase I where the program requirements are not fully defined in the rule but rather in the NPDES permit issued by the NPDES permitting authority.

EPA recommends that the NPDES permitting authorities use their existing Phase I large construction general permits as a guide to developing their Phase II small construction permits. In doing so, the Phase II requirements would be similar to the three general Phase I requirements summarized below.

- ❑ Submission of a ***Notice of Intent*** (NOI) that includes general information and a certification that the activity will not impact endangered or threatened species. This certification is unique to EPA's NOI and is not a requirement of most NPDES-delegated State's NOIs;
- ❑ The development and implementation of a ***Storm Water Pollution Prevention Plan*** (SWPPP) with appropriate BMPs to minimize the discharge of pollutants from the site; and

- Submission of a *Notice of Termination* (NOT) when final stabilization of the site has been achieved as defined in the permit or when another operator has assumed control of the site.

Can the Permitting Authority Reference a Qualifying Erosion and Sediment Control Program in NPDES Construction Permits?

Yes. The Phase II Rule allows the NPDES permitting authority to include in its NPDES permits for large and for small construction activity conditions that incorporate by reference qualifying State, Tribal, or local erosion and sediment control program requirements. A qualifying program must include the following requirements:

- Requirements for construction site operators to implement appropriate erosion and sediment control best management practices;
- Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste that may cause adverse impacts to water quality;
- Requirements for construction site operators to develop and implement a storm water pollution prevention plan; and
- Requirements to submit a site plan for review that incorporates consideration of potential water quality impacts.

In addition to the four elements above, a qualifying program for large construction activities must also include any additional requirements necessary to achieve the applicable technology-based standards of "Best Available Technology" (BAT) and "Best Conventional Technology" (BCT) based on the best professional judgment of the permit writer.

Should a State, Tribal, or local program include one or more, but not all, of the elements listed above, the permitting authority can reference the program in the permit, provided it also lists the missing element(s) as a condition in the permit.

What are Some Recommended BMPs for Small Construction Sites?

The approach and BMPs used for controlling pollutants in storm water discharges from small construction sites may vary from those used for large sites since their characteristics can differ in many ways. For example, operators of small sites may have more limited access to qualified design personnel and technical information. Also, small sites may have less space for installing and maintaining certain BMPs.

As is the case with all construction sites, erosion and sediment control at small construction sites is best accomplished with proper planning, installation, and maintenance of controls. The following practices have shown to be efficient, cost effective, and versatile for small construction site operators to implement. The practices are divided into two categories: non-structural and structural

- **Non-Structural BMPs**
  - Minimizing Disturbance
  - Preserving Natural Vegetation
  - Good Housekeeping
- **Structural BMPs**

  Erosion Controls
  - Mulch
  - Grass
  - Stockpile Covers

  Sediment Controls
  - Silt Fence
  - Inlet Protection
  - Check Dams
  - Stabilized Construction Entrances
  - Sediment Traps

Most erosion and sediment controls require regular maintenance to operate correctly. Accumulated sediments should be removed frequently and materials should be checked periodically for wear. Regular inspections by qualified personnel, which can allow problem areas to be addressed, should be performed after major rain events.

For Additional Information

Contact

- U.S. EPA Office of Wastewater Management
  - Phone: 202 260-5816
  - E-mail: SW2@epa.gov
  - Internet: www.epa.gov/owm/sw/phase2

- Your local soil conservation district office. They can provide assistance with RUSLE and other conservation related issues.
  - A list of conservation district contacts is available at: www.nacdnet.org/resources/cdsonweb.html

Refcrence Documents

- Storm Water Phase II Final Rule Fact Sheet Series
  - Internet: www.epa.gov/owm/sw/phase2

- Storm Water Phase II Final Rule (64 *FR* 68722)
  - Internet: www.epa.gov/owm/sw/phase2
  - Contact the U.S. EPA Water Resource Center
    - Phone: 202 260-7786
    - E-mail: center.water-resource@epa.gov

- *Agricultural Handbook Number 703, Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)*, Chapter 2, pp. 21-64, January 1997.
  - Internet: www.epa.gov/owm/sw/phase2

- *Guidance for Water Quality Based Decisions: The TMDL Process.* April 1991. U.S. EPA Office of Water. EPA 440/4-91-001.
  - Internet: www.epa.gov/OWOW/tmdl

- *NPDES General Permit for Storm Water Discharges from Construction Activities* (63 FR 7857).
  - Internet: www.epa.gov/owm/sw
  - Contact the U.S. EPA Water Resource Center
    - Phone: 202 260-7786
    - E-mail: center.water-resource@epa.gov

United States Environmental Protection Agency | Office of Water (4203) | EPA 833-F-00-009 January 2000 Fact Sheet 2.7

EPA

Storm Water Phase II Final Rule

Post-Construction Runoff Control Minimum Control Measure

This fact sheet profiles the Post-Construction Runoff Control minimum control measure, one of six measures that the operator of a Phase II regulated small municipal separate storm sewer system (MS4) is required to include in its storm water management program in order to meet the conditions of its National Pollutant Discharge Elimination System (NPDES) permit. This fact sheet outlines the Phase II Final Rule requirements for post-construction runoff control and offers some general guidance on how to satisfy those requirements. It is important to keep in mind that the small MS4 operator has a great deal of flexibility in choosing exactly how to satisfy the minimum control measure requirements.

Why Is The Control of Post-Construction Runoff Necessary?

Post-construction storm water management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly effect receiving waterbodies. Many studies indicate that prior planning and design for the minimization of pollutants in post-construction storm water discharges is the most cost-effective approach to storm water quality management.

There are generally two forms of substantial impacts of post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in storm water runoff. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams. Once deposited, these pollutants can enter the food chain through small aquatic life, eventually entering the tissues of fish and humans. The second kind of post-construction runoff impact occurs by increasing the quantity of water delivered to the waterbody during storms. Increased impervious surfaces interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The effects of this process include streambank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property.

What Is Required?

The Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement, and enforce a program to reduce pollutants in post-construction runoff to their MS4 from new development and redevelopment projects that result in the land disturbance of greater than or equal to 1 acre. The small MS4 operator is required to:

- Develop and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs);
- Have an ordinance or other regulatory mechanism requiring the implementation of post-construction runoff controls to the extent allowable under State, Tribal or local law.

- ❑ Ensure adequate long-term operation and maintenance of controls;
- ❑ Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

What Is Considered a "Redevelopment" Project?

The term "redevelopment" refers to alterations of a property that change the "footprint" of a site or building in such a way that there is a disturbance of equal to or greater than 1 acre of land. The term does not include such activities as exterior remodeling. Because redevelopment projects may have site constraints not found on new development sites, the rule provides flexibility for implementing post-construction controls on redevelopment sites that consider these constraints.

What Are Some Guidelines for Developing and Implementing This Measure?

This section includes some sample non-structural and structural BMPs that could be used to satisfy the requirements of the post-construction runoff control minimum measure. It is important to recognize that many BMPs are climate-specific, and not all BMPs are appropriate in every geographic area. Because the requirements of this measure are closely tied to the requirements of the construction site runoff control minimum measure (see Fact Sheet 2.6), EPA recommends that small MS4 operators develop and implement these two measures in tandem. Sample BMPs follow.

❑ Non-Structural BMPs

- **Planning and Procedures.** Runoff problems can be addressed efficiently with sound planning procedures. Master Plans, Comprehensive Plans, and zoning ordinances can promote improved water quality by guiding the growth of a community away from sensitive areas and by restricting certain types of growth (industrial, for example) to areas that can support it without compromising water quality.
- **Site-Based Local Controls.** These controls can include buffer strip and riparian zone preservation, minimization of disturbance and imperviousness, and maximization of open space.

❑ Structural BMPs

- **Storage Practices.** Storage or detention BMPs control storm water by gathering runoff in wet ponds, dry basins, or multichamber catch basins and slowly releasing it to receiving waters or drainage systems. These practices both control storm water volume and settle out particulates for pollutant removal.
- **Infiltration Practices.** Infiltration BMPs are designed to facilitate the percolation of runoff through the soil to ground water, and, thereby, result in reduced storm water quantity and reduced mobilization of pollutants. Examples include infiltration basins/trenches, dry wells, and porous pavement.
- **Vegetative Practices.** Vegetative BMPs are landscaping features that, with optimal design and good soil conditions, enhance pollutant removal, maintain/improve natural site hydrology, promote healthier habitats, and increase aesthetic appeal. Examples include grassy swales, filter strips, artificial wetlands, and rain gardens.

What Are Appropriate Measurable Goals?

Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, should reflect needs and characteristics of the operator and the area served by its small MS4. Furthermore, the measurable goals should be chosen using an integrated approach that fully addresses the requirements and intent of the minimum control measure. An integrated approach for this minimum measure could include the following goals:

Target Date	Activity
1 year.....	Strategies developed that include structural and/or non-structural BMPs.
2 years.....	Strategies codified by use of ordinance or other regulatory mechanism.
3 years.....	Reduced percent of new impervious surfaces associated with new development projects.
4 years.....	Improved clarity and reduced sedimentation of local waterbodies.

For Additional Information

Contact

☞ U.S. EPA Office of Wastewater Management
- Phone: 202 260-5816
- E-mail: SW2@epa.gov
- Internet: www.epa.gov/owm/sw/phase2

Reference Documents

☞ Storm Water Phase II Final Rule Fact Sheet Series
- Internet: www.epa.gov/owm/sw/phase2

☞ Storm Water Phase II Final Rule (64 *FR* 68722)
- Internet: www.epa.gov/owm/sw/phase2
- Contact the U.S. EPA Water Resource Center
  - Phone: 202 260-7786
  - E-mail: center.water-resource@epa.gov

LA County MS4 Public Information and Participation Program Meeting
March 12, 2001 at 10:00 - noon (Library)

1. Summary of the 1st 5 years of the Program and which components will be continued through the next 5 years (LA County)

2. Introduce potential improvements and target audiences (Regional Board)

   - Upgrading industrial/commercial educational site visit program to an inspection and enforcement program (Dan)

   - Address target areas and sources that were identified as results of the completed 5-year PIPP and monitoring programs (such as zinc, copper and TSS generating facilities in the Ballona watershed; PAHs in Malibu; high coliform counts in all watersheds)

3. How effective have outreach efforts been and how will they be modified to effectively address target areas? (LA County)

4. Performance Standards
   - Number of impressions/year
   - Amount of educational material to schools
   - Amount of educational material to businesses
   - Amount of educational material to employees
   - Other

5. Discussion (All)

LA COUNTY MS4 PIPP MEETING 3-12-01

NAME	ORGANIZATION	PHONE	EMAIL
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LA COUNTY MS4 PIPP MEETING 3-12-01

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Mark Gold	Heal the Bay	310-453-0395 x119	mgold@healthebay.org

Notes from PIPP Meeting, March 12, 2001

- Melinda Barrett began overview of the public education program
- Cities feel their contributions to the regional program are understated
- A coordination problem exists between the County and co-permittees. There is a need for coordinated meetings.
- The extent of the programs is difficult to determine without thorough review of all city's annual reports. There is a need for the County to review the City programs.
- It was agreed that city programs should draw on the regional program and not duplicate efforts, but that's not always happening, due to lack of coordination
- Gary pointed out that it's possible to supplement funding for the storm water program by using funding from related programs, such as used oil recycling
- The County has not conducted the final study of the program yet to determine what elements are the most effective. This will take place in June, as a phone survey.
- Radio is the most effective of the media campaigns
- The City of LA contributed $400,000 last year for advertising
- County newsletter was not effective
- Gary proposed that mass media advertising be eliminated or decreased and the funds be used to target Rubish Rebels, specifically for trash
- There was a consensus that mass media should be continued, but that it could possibly have a region-wide target such as trash.
- Need to develop Regional and local performance standards. The issue was not discussed in detail because general decisions about program targets had not been made.
- The idea of county consultants being available to cities was discussed
- The County needs to revise the SQMP to include education needs and priorities
- Local efforts need to be focused, people were open to the Regional Board selecting target pollutants
- The City of LAs program targeting businesses was mentioned as an example of a way to retain part of the Program for Businesses
- Services and materials should remain available to businesses

Conclusion:

- Mustafa will send letter describing how the SQMP will be revised to include needs and priorities, and the basis behind the $5 million budget
- Quarterly coordination meetings should be required
- Watershed-wide pollutants should be specified

Los Angeles County's
School Environmental Education Program

✏**Total Number of Schools (public and private)** - 1,503 elementary schools
850 secondary schools

✏**Air Waves Campaign** - All students attending secondary schools in Los Angeles County are reached through out air waves campaign through more than 1,000,000 impressions annually.

✏**Schools Visited** -1,353 (400-500 per year) Elementary
600 (120 per year) SEcondary

✏**Events** - Over 100 reaching 250,000 participants

✏**Annual Contract Amount** - $800,000 annually Elementary
$1,000,000 annually Secondary

PROJECT

Pollution

PREVENTION

Storm Water/Urban Runoff Public Education Program

Los Angeles County
Department of Public Works

Key Research Findings

- **Evaluation of the first three years of the public education program reveals that public awareness, attitudes and concern regarding storm water pollution and water quality have all shown significant and sustained increases**
  - **In 1997, LA county residents ranked water pollution as the #3 social issue causing them great concern - - after crime and quality of public schools**
  - **By 1998 - after only six months of the campaign -- water pollution showed a huge shift on the social issue meter and moved up to #2, indicating significantly more interest**

Getting Results:
What it Takes to Make Social Marketing Programs Work cont.

COMPARATIVE LOS ANGELES COUNTY PROGRAM BUDGETS STORM WATER VS. TOBACCO CONTROL PROGRAM		
Annual Program Budgets	**Storm Water/Urban Runoff Program**	**Los Angeles County Tobacco Control**
Advertising Budget	**$400,000** [2]	$390,000 [3]
Other Source Contributions	**$450,000** (City of Los Angeles and Permittee contributions) [2]	$5,500,000 [4]
Subtotal	**$850,000 per year**	**$5,890,000 per year**
Public Relations Budget	**$800,000** [2]	$500,000 [3]
Other Source Contributions	**NA**	$750,000 [4]
Subtotal	**$800,000 per year**	**$1,250,000 per year**
Total Annual Program Funds:	**$1,650,000 per year**	**$7,140,000 per year**

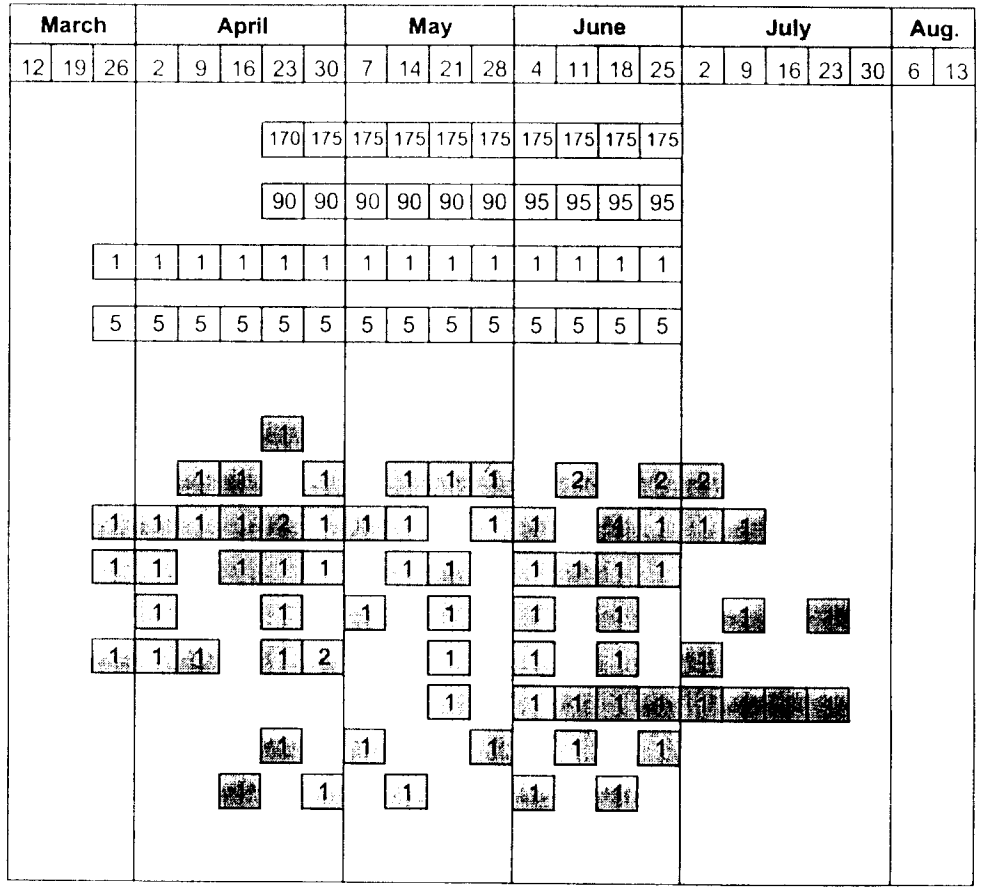
Advertising Cost/value and Impact

- It takes **more than twice as much money** to reach 1,000 people with an ad in a regional paper *(e.G. San Gabriel Valley Tribune)* than with one radio spot on a Top-10 rated station
  - Average radio cost per-spot is $250, which will reach more than 43,000 listeners - **cost-per-thousand is $5.78**
  - Average newspaper cost-per-ad (5"x7") is $1,500, which will reach at most 120,000 readers of the *San Gabriel Valley Tribune* - **cost-per-thousand is $12.47**
- $5,000 will purchase approximately 12,000 2-color newsletters, reaching one city's residents **cost-per-thousand is $416**; the same $5,000 will buy 20 Top-10 radio spots, reaching approximately 865,000 people countywide.

2001 Los Angeles Countywide Stormwater Advertising Campaign

Media Plan Flowchart - Radio & Newspaper

Rev. 1



	Units:	Cost:	%:
Spot Radio:			
General Market & Spanish (TRPs) Stations listed on schedule summary	1,745	$966,730.00	
Traffic Report Announcements Networks TBD	920	$71,760.00	
Garden Talk, KFI-AM (640) Sat., 5:00am - 6:00am	14	$2,800.00	
Back to the Garden, KFWB-AM (980) Sa. 8:53a, 12:53p, 2:28p & Su. 7:28a, 4:53p	70	$14,000.00	
		$1,055,290.00	88%
Newspaper: (# of insertions)*			
Los Angeles Times	1	$13,095.00	
Daily News	12	$28,365.00	
La Opinión	15	$18,525.00	
San Gabriel Valley Group**	11	$20,975.00	
Long Beach Press-Telegram	8	$17,175.00	
Daily Breeze	10	$18,850.00	
L.A. Weekly, Los Angeles Edition	9	$14,538.01	
Los Angeles Downtown News	5	$4,765.00	
L.A. Watts Times	5	$3,650.00	
	76	$139,938.01	12%
		$1,195,228.01	100%

Notes:

- Preferred radio stations:
  - Neat Neighbors (A25-54) 1) KOST-FM, 2) KTWV-FM, 3) KIIS-FM
  - Rubbish Rebels (M18-24) 1) KPWR-FM, 2) KROQ-FM, 3) KKBT-FM
  - Spanish (A25-54) 1) KSCA-FM, 2) KLVE-FM, 3) KBUE-FM
- Newspaper costs based on 5 column x 7" ad size

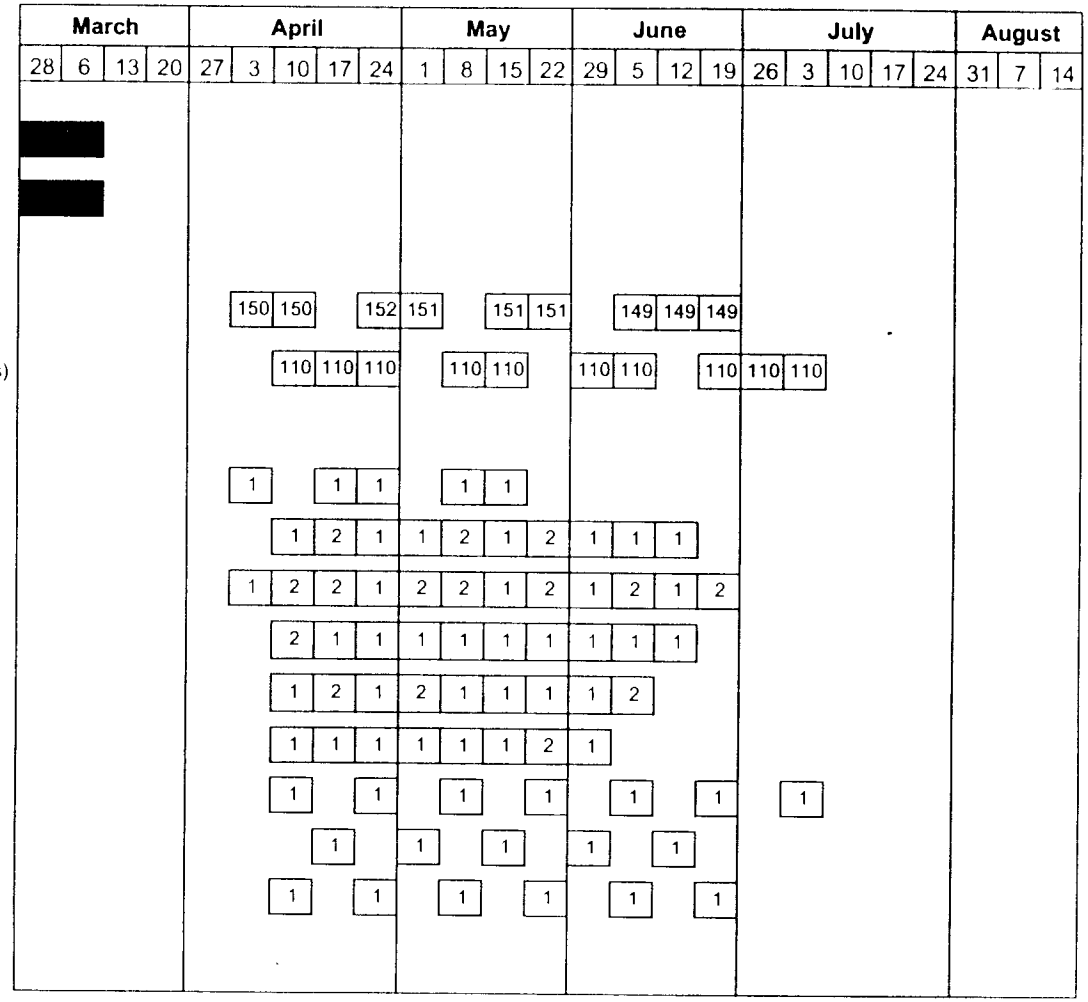
* Based on an ad size of 5 column x 7"
** San Gabriel Valley Tribune, Pasadena Star News, Whittier News

R0001378

2000 Los Angeles Countywide Stormwater Campaign

Media Schedule Flowchart

6/26/00
Actual #1



	Units:	Cost:	(%):
Political Ad Period:			
Presidential Primary - Mar. 7 - media window: 1/21 - 3/7			
State Primary - Mar. 7 - media window: 1/21 - 3/7			
Local Spot Radio:			
Gen, Mkt. & Hispanic (# TRPs) - refer to buy summary for stations	1,352	$639,372.00	
Traffic Report Spnsrshp (# Spots) - Metro and Shadow networks	1,100	$85,807.00	
		$725,179.00	83%
Newspaper: (# of insertions)*			
Los Angeles Times	5	$44,265.00	
Daily News	13	$25,130.00	
La Opinion	19	$15,060.00	
San Gabriel Valley Group**	11	$17,315.00	
Long Beach Press-Telegram	12	$16,072.00	
Daily Breeze	9	$15,114.00	
L.A. Watts Times	7	$4,485.00	
Los Angeles Downtown News	5	$4,658.00	
Wave Newspaper, Zone C	6	$3,888.00	
	87	$145,987.00	17%
Est. Radio Audience Delivery (A25-54): Gen. Market - Reach 62%, Freq. 15.7x; Hispanic - Reach 65%, Freq. 7.1x		**$871,166.00**	100%

R0001379

* Ad size = 5 column x 7"
** San Gabriel Valley Tribune, Pasadena Star News, Whittier News

INDUSTRIAL STRENGTH ADVERTISING

1999-2000 STORMWATER MEDIA CAMPAIGN

RADIO STATIONS	APRIL 2000				MAY 2000					JUNE 2000					
NUMBER OF 60 SECOND SPOTS PER WEEK	3	10	17	24	1	8	15	22	29	5	12	19	26	3	
KFI 640 AM (Talk)	24	24		24											
KABC 790 AM (Talk)					26		26	26		26	26	26			
KKHJ 930 AM (Spanish Talk)	23	23		23	29		29	29		23	23	23			
KFWB 980 AM (News)					30		30	30							
KTNQ 1020 AM (Spanish Talk)	20	20		20	21		21	21		22	22	22			
KRLA 1100 AM (Talk)	29	29		29	29		29	29							
KZLA 93.9 FM (Country)					27		27	27		27	27	27			
KBUA/KBUE 94.3/105.5 FM (Spanish)	23	23		23	29		29	29		23	23	23			
KTWV 94.7 FM (New Age)										24	24	24			
KLSX 97.1 FM (Talk)	33	33		33	33		33	33							
KRTH 101.1 FM (Oldies)					33		33	33							
KSCA 101.9 FM (Spanish)	23	23		23	24		24	24		24	24	24			
KIIS 102.7 FM (Adult Contempory)	22	22		22						22	22	22			
KACD/KBCD 103.1 FM (Alternative Rock)	32	32		32	32		32	32		32	32	32			
KOST 103.5 FM (Adult Contempory)	24	24		24											
KPWR 105.9 FM (Urban Adult Contempory)										23	23	23			
KLVE 107.5 FM (Spanish Adult Contempory)	20	20		21	21		21	21		22	22	22			TOTALS
TOTAL 60 SECOND SPOTS PER WEEK	**273**	**273**		**274**	**334**		**334**	**334**		**268**	**268**	**268**			**2626**
TOTAL 10 SECOND TRAFFIC SPONSORSHIPS* PER WEEK		110	110	110		110	110		110	110		110	110	110	**1100**

*Traffic Sponsorships via Metro Traffic and Shadow Broadcasting networks

NEWSPAPERS	APRIL 2000				MAY 2000					JUNE 2000					
NUMBER OF INSERTS PER WEEK	3	10	17	24	1	8	15	22	29	5	12	19	26	3	
Los Angeles Times	1		1	1		1	1								
Daily News		1	2	1	1	2	1	2	1	1	1				
La Opinion	1	2	2	1	2	2	1	2	1	2	1	2			
Long Beach Press-Telegram		1	2	1	2	1	1	1	1	2					
Daily Breeze		1	1	1	1	1	1	2	1						
San Gabriel Valley Tribune**		2	1	1	1	1	1	1	1	1	1				
Pasadena Star News**		2	1	1	1	1	1	1	1	1	1				
Whittier News**		2	1	1	1	1	1	1	1	1	1				
L.A. Watts Times		1		1		1		1		1		1		1	
Los Angeles Downtown News			1		1		1		1		1				
Wave Newspapers, Zone C		1		1		1		1		1		1			TOTALS
TOTAL INSERTIONS PER WEEK	2	13	12	10	10	12	9	12	8	10	6	4		1	109

**San Gabriel Valley Newspaper Group

Year One (1996 - 1997) Highlights

Research and Development of Five-Year Plan

- Developed ***Public Education Advisory Committee***, an ad hoc committee of various Permittee and County representatives, assembled to provide constructive input into the development of the ***Five-Year Public Education Plan*** and elicit buy-in from Permittee cities. Facilitated meetings throughout the fiscal year.

- Developed ***Initial Five-Year Public Education Plan – Part One***, detailing situation analysis, goals and objectives for the four primary target audiences: general public/residential; commercial/industrial and new development/ construction; K-12 school children; and public agencies.

- Developed ***Research Report on Issues, Pollutants and Materials***. The report served as a resource for reviewing and assessing the individual and collective efforts of Los Angeles County, 85 Permittees and some of the nation's leading storm water urban runoff prevention programs. Focus areas in the report included: complex issues surrounding storm water / urban runoff prevention efforts; the prioritization of pollutants of concern, land uses and associated target audiences; specific materials and programs being implemented throughout the country; and overall recommendations on how to proceed in developing the ***Five-Year Public Education Plan.***

- Developed ***Initial Five-Year Public Education Plan – Part Two***, detailing overall strategies and public education tactics.

- Developed ***Residents and Industry Storm Water Awareness, Practices and Communications Report***. Report detailed focus group findings on current levels of awareness, knowledge and concern about storm water pollution; current usage of BMPs; reactions to potential program messages, creative materials and outreach strategies.

- Developed two-volume ***Public Employee Trainers' Manual*** (Volume One: Municipal Activities; Volume Two: Construction). Manuals were developed to provide Permittees with training materials for educating appropriate Permittee employees regarding compliance with applicable storm water permits. Conducted three training sessions for public agency employees.

- Conducted ***Los Angeles County Segmentation Study*** to define target audiences, quantify polluting behaviors and provide a strategic foundation for the ***Five-Year Public Education Plan's*** goals, objectives, messages, strategies and outreach tactics. Study identified three primary target audience segments around which to strategically and cost-effectively focus public education efforts. Segments, characterized as "Neat Neighbors," "Fix-It Foul-ups," and "Concerned Non-Contributors," were defined as the largest contributors to storm water pollution and those most likely to change behaviors, and represent approximately 83% of LA County's 10 million residents.

Year One (1996 - 1997) Highlights - cont.

Research and Development of Five-Year Plan

- Conducted presentations on ***Segmentation Study*** results, creative concepts and scenarios within the ***Five-Year Public Education Plan*** to the Public Education Advisory Committee and WMA Committees.

- Developed first three BMP posters for Site Visit Program and began distribution.

Special Events

- Attended the Los Angeles County Fair and other community events.

Year Two (1997 - 1998) Highlights

Research and Development of Five-Year Plan

- Developed final ***Five-Year Public Education Plan*** for review and approval by the *Public Education Advisory Committee, WMA Committees*, and ultimately, the *RWQCB*.

- Conducted ***Interim "Touchbase" Tracking Study*** following six-month implementation of the advertising campaign. Study indicated that the media campaign proved to be: (1) communicating accurately; (2) perceived by LA County residents to be delivering important messages; (3) successful in changing attitudes; and (4) starting to impact behaviors.

Graphic Design/Advertising

- Developed and produced letterhead package, including the ***Channel Bulletin*** and media release letterhead, and ***The Report*** covers.

- Developed ***Project Pollution Prevention*** logo and made available to Permittees via the Internet (www.freethmoroz.com).

- Developed and planned Countywide media buy in accordance with the ***Segmentation Study***.

- Tested media messages through mall intercept studies done in partnership with the City of Los Angeles.

- Conceptualized and produced ***Now You Know*** media campaign in accordance with the ***Segmentation Study*** and mall intercept results. Creative materials utilizing the ***Now You Know*** theme, included radio spots, print ads, and bus shelter poster designs.

- Paid media campaign leveraged **$1,085,000 in pro bono outdoor and radio placements**.

Media Relations

- Secured print and electronic media stories garnering **upwards of 22,766,000 impressions** at a **value of $162,439.**

- Developed ***Guide to Storm Water Media Relations***, a comprehensive resource manual to assist Permittees in executing local media relations campaigns; conducted workshop for Permittees in conjunction with the distribution of the media guide.

- Developed and distributed Spanish and English radio PSAs.

Year Two (1997 - 1998) Highlights - cont.

Corporate Partnerships

- Confirmed partnerships with Metro Display Advertising, Eller Media, Vista Metropolitan Outdoor Media, Worldwide Pet Supply Association, LA County Police Canine Association, PETCO, CrazyDog, Doggie Walk Bags at an **estimated value of $2.7 million.**

- Implemented training partnership with County of Los Angeles Health Services Department for restaurant worker storm water BMP training. Upwards of 50,000 businesses were identified for training over the next fiscal year.

Business Outreach

- Developed ***Businesses and Industries for a Clean Environment*** overview brochure.

- Finalized copy and design of 18 BMP fact sheets, technically specific and researched among target audience.

- Conducted an auto repair workshop with the California Dept. of Toxic Substances Control and the LA Urban League Toyota Training Center.

- Developed ***Southeastern Targeted Opportunities to Prevent Pollution (STOPP) Business Outreach Pilot Program***, detailing site visit reports, recommendations for business outreach (to auto repair shops and restaurants) and preparations for public workshops.

- Conducted ***Auto Mechanics Clean Business Fair***, an entertainment-oriented education event for automotive repair shop managers and employees hosted by County inspector David Dolphin and KTNQ/KLVE Spanish-language radio celebrity, Humberto Luna.

- Developed ***Project Pollution Prevention (PPP) Automotive Repair Workshop Report,*** detailing the ***Auto Mechanics Clean Business Fair.***

- Conducted ***Clean Business Expo*** for restaurants in conjunction with California Department of Toxic Substances Control, California Restaurant Association, and Bell Gardens Merchants and Commerce Association.

- Developed and distributed a series of topical small space ads for Permittee use (available on disk and via the Internet).

Year Two (1997 - 1998) Highlights - cont.

Special Events

- Attended County special events (including Earth Fest '98, and Los Angeles County Fair). **Estimated attendance: 258,000.**

Bulletins

- Developed seven ***Channel Bulletins*** and distributed to Permittees, Public Education Advisory Committee and special interest mailing list.

Year Three (1998 - 1999) Highlights

Research

- Compiled results of ***Interim "Touchbase" Tracking Study***; produced and distributed research report to RWQCB, Public Education Advisory Committee, SCAG, SMBRP, County and Permittees.

Graphic Design/Advertising

- Conceptualized and produced new radio, print and outdoor media campaign reflecting 1998 interim evaluation results. Creative materials using the ***Warning Sign*** theme, included radio commercials, print ads, bus shelter poster designs and movie theatre slides.

- Paid advertising campaign leveraged **$900,000 in pro bono outdoor and radio placements**.

- Distributed ad launch materials to Permittees, Board of Supervisors and RWQCB.

- Secured advertising space on the screens of four high-traffic movie theaters coinciding with summer blockbuster season **(860,000 impressions)** and highlighted in the AMC Magazine's July issue **(circulation 100,000).**

- Secured advertising space on the back of grocery receipts in four high-traffic County stores for eight weeks, garnering **325,000 impressions**.

Tips Cards and Other General Public Collateral Materials

- Produced pesticide and fertilizer tips cards with PPP branding; produced used oil tips cards in conjunction with Chevron; produced recycling tips cards in conjunction with COSTCO.

- Produced interactive storm water pollution prevention game to increase participation at special events.

Corporate Partnerships

- Confirmed partnerships with Chevron, COSTCO, Petco, LA County Arboretum, Southern California Veterinary Medicine Association, and Doggie Walk Bags, garnering an **estimated 2,775,000 impressions** at a **value of $136,066**.

Year Three (1998 - 1999) Highlights - cont.

Media Relations

- Secured print and electronic media stories garnering **8,530,000 estimated impressions** at a **value of $157,030**.

- Secured media coverage regarding County storm water diversion systems in the *Los Angeles Times* (front page), *Beach Reporter*, *Daily Breeze* and *Long Beach Press-Telegram*. **Estimated impressions: 1,500,000**.

- Secured ad launch coverage in *Adweek*, *Daily Breeze*, *News-Pilot*, KFWB-AM and KCSN-FM. **Estimated impressions: over 500,000**.

- Secured County panelists and coordinated storm water program on Century *Cable's Bill Rosendahl Show*. **Estimated impressions: 404,000**.

- Developed and distributed five template media releases to all Permittees.

- Produced two audio news releases (general storm water pollution prevention and lawn and gardening care). **Estimated impressions: 1,075,000**.

Special Events

- Attended ten County special events (including Earth Faire, Los Angeles County Fair, America's Family Pet Expo, Long Beach Home and Garden Show). **Estimated attendance: over 250,000.**

Business Outreach

- Conducted meetings with the Building Industry Association regarding the new State Construction Permit.

- Conducted educational site visits.

Bulletins

- Developed four ***Channel Bulletins*** and distributed to Permittees, Public Education Advisory Committee and special interest mailing list.

Year Four (1999 – 2000) Highlights

Graphic Design/Advertising

- Secured and coordinated four-week radio promotion with KIIS FM, *2000 Superbowl Storm Water Sweep*, including: partnerships with Universal Studios, Pepsi and Popeye's Chicken; four weeks of on-air spots and announcements, Website postings, interactive phone messages and promotions at live remotes; and a station-sponsored beach clean-up and picnic, wherein more than 2,200 pounds of trash was collected along Santa Monica Beach. **Estimated impressions: 22,567,000.**

- Secured advertising space on the screens of five high-traffic movie theaters coinciding with holiday blockbuster season **(1,106,700 impressions)** and highlighted in the AMC Magazine's November issue **(circulation 100,000).**

- Secured advertising space on the back of grocery receipts in four high-traffic County stores for 12 weeks. **Estimated impressions: 975,000.**

- Produced two additional radio ads, "Encounter Group" and "Salute."

- Annual Countywide media campaign aired from April into July 2000 and has not been evaluated to date.

- Distributed media campaign materials to Permittees, Board of Supervisors and RWQCB.

Media Relations

- Secured print and electronic media stories garnering **53,892,100 estimated impressions** at a **value of $310,604.**

- Secured media coverage on less toxic/alternative products, used oil recycling centers and HHW Roundups, including four live feature segments on the *KTLA Morning* News and two segments on *KTLA Pacesetters*. **Estimated impressions: upwards of 2,120,000 at a value of $80,000.**

- Secured media coverage on launch of five new underground storm water diversion systems, in conjunction with Heal the Bay, the City of Long Beach and the American Lung Association. **Estimated impressions: upwards of 3,000,000 at a value of $22,000.**

Year Four (1999 - 2000) Highlights - cont.

Tips Cards and Other General Public Collateral Materials

- Produced 65,000 customized coffee jackets imprinted with PPP messages, and secured distribution at 31 County coffeehouses. **Estimated impressions: 1,296,000.**

- Produced 10,000 customized magnets – focused on used automotive fluid recycling – imprinted with PPP and CSK/Kragen logos. Initial distribution took place at the Toyota/Long Beach Grand Prix.

- Produced 7,500 general pollution prevention tips cards imprinted with PPP and Brita logos. Initial distribution took place at Earth Faire 2000.

- Produced 20,000 customized shop towels (10,000 English, 10,000 Spanish) – focused on used automotive fluid recycling – imprinted with PPP messages and logo, and developed in conjunction with the City of Los Angeles and CIWMB. Initial distribution took place at Eagle One Nationals.

Corporate Partnerships

- Confirmed partnerships with CSK/Kragen, Brita, American Lung Association, City of Los Angeles and CIWMB garnering **an estimated value of $66,000**. Note: partnership with high-profile corporate and nonprofit entities such as Kragen, Brita and American Lung contributed considerable added value to the Program, though one that is not quantifiable in traditional advertising/marketing dollars. The Program benefited significantly from these affiliations via their significant "brand equity," increased credibility among target audience segments and greatly expanded program visibility and reach.

Special Events

- Attended six County special events (including the Los Angeles County Fair, Latin Business Association Expo, Toyota/Long Beach Grand Prix, Earth Faire, Cinco de Mayo at Whittier Narrows and Eagle One Nationals); **estimated attendance: over 500,000**.

Business Outreach

- Developed and distributed specialized automotive repair BMP workbooks and videos to 319 automotive instructors at targeted high schools, ROP programs, adult vocational schools, community colleges (potentially **reaching upwards of 19,000 students**).

Bulletins

- Developed three ***Channel Bulletins*** and distributed to Permittees and special interests.

2000 Los Angeles Countywide Stormwater Advertising Campaign

Billing Summary - Contributions from Co-Permittees

7/11/00

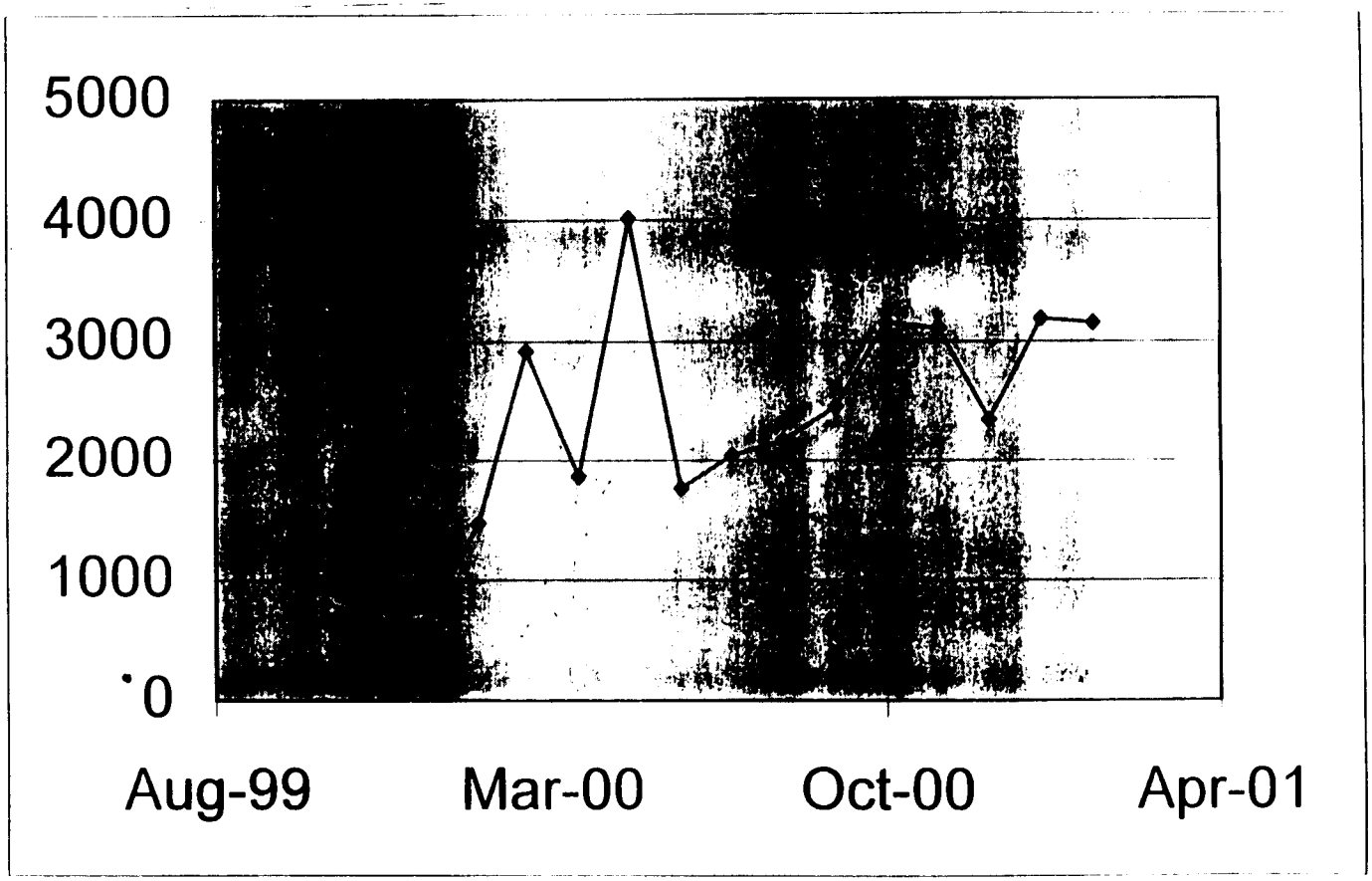
	City:	Amount:	Inv. #:	Invoice Date:	Status:	Check #:	Notes:
1.	Beverly Hills	$14,968.80	003-00	1/16/00	Recv'd	315782	
2.	Carson	$1,041.01	004-00	1/16/00	Recv'd	018156	
3.	La Mirada	$2,500.47	005-00	1/16/00	Recv'd	234918	
4.	Huntington Park	$2,500.00	006-00	1/16/00	Recv'd	5301	- Est. budget $3,592.13
5.	Maywood	$1,420.15	007-00	1/16/00	Recv'd	5302	
6.	San Dimas	$2,560.01	008-00	1/16/00	Recv'd	081442	
7.	La Canada Flintridge	$3,307.50	009-00	1/16/00	Recv'd	13136	
8.	West Covina	$3,988.85	010-00	1/16/00	Recv'd	191124	
9.	Alhambra	$2,923.83	012-00	2/8/00	Recv'd	192917	
10.	Glendale	$2,016.00	013-00	2/8/00	Recv'd	G8221159	Pymt. recv'd from County
11.	Santa Monica	$2,500.00	014-00	2/8/00	Recv'd	20788	
12.	Rosemead	$1,430.82	015-00	2/18/00	Recv'd	029961	
13.	Downey	$2,500.00	016-00	2/24/00	Recv'd	0006934	- Est. budget $9,523.33
14.	Baldwin Park	$500.00	024-00	3/27/00	Recv'd	116730	- Est. budget $1,839.63
15.	Signal Hill	$500.00	025-00	3/29/00	Recv'd	0058801	- Est. budget $3,141.03
16.	South El Monte	$500.00	027-00	4/7/00	Recv'd	011863	- Est. budget $1,430.82
17.	Redondo Beach	$500.00	028-00	4/7/00	Recv'd	196253	- Est. budget $1,636.20
18.	Bell	$1,000.00	037-00	5/10/00	Recv'd	18236	- Est. budget $1,420.15
19.	Hidden Hills	$500.00	038-00	5/15/00	Recv'd	8616	- Est. budget $943.80
20.	Cerritos	$2,217.20	039-00	5/15/00	Recv'd	015522	
21.	Gardena	$2,079.00	042-00	6/7/00	Recv'd	034662	
22.	Calabasas	$1,000.00	047-00	7/11/00	Recv'd	29409	
23.	South Gate	$500.00	048-00	7/11/00	Due		- Est. budget $2,673.22
24.	Azusa	$841.43	049-00	7/11/00	Due		
25.	West Hollywood	$1,000.00	050-00	7/11/00	Due		- Est. budget $6,924.00
	TOTAL. Invoiced:	$54,795.07					
	TOTAL. Recv'd:	$52,453.64					

TELEPHONE CALLS TO 1-888-CLEAN-LA

1/96	2/96	3/96	4/96	5/96	6/96	7/96	8/96	9/96	10/96	11/96	12/96	Total	Average
						5201	4792	4087	3805	3115	3014	24014	4002
1/97	2/97	3/97	4/97	5/97	6/97	7/97	8/97	9/97	10/97	11/97	12/97		
5578	3128	3701	3428	4376	4904	4632	3931	3538	3826	3008	3462	47512	3959
1/98	2/98	3/98	4/98	5/98	6/98	7/98	8/98	9/98	10/98	11/98	12/98		
5154	2912	3419	3657	4258	5085	3922	3453	3056		2699	2610	40225	3657
Jan-99	Feb-99	Mar-99	Apr-99	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99	Nov-99	Dec-99		
3559	2762		3418	3204	3787	3916	3974	3718	4052	3003	2803	38196	3472
Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00	Sep-00	Oct-00	Nov-00	Dec-00		
3453	3267	6578	6141	4920	7950	8457	7710	7569	4283	3842	4003	68173	5681
Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul-01	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01		
5759	3945											9704	4852

www.888CleanLA.com Hits

Month	Hits
Nov-99	808
Dec-99	674
Jan-00	657
Feb-00	1470
Mar-00	2922
Apr-00	1865
May-00	4014
Jun-00	1768
Jul-00	2044
Aug-00	2171
Sep-00	2458
Oct-00	3158
Nov-00	3112
Dec-00	2347
Jan-01	3192
Feb-01	3159



COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100

HARRY W. STONE, Director

ADDRESS ALL CORRESPONDENCE TO
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

March 12, 2001

IN REPLY PLEASE
REFER TO FILE EP-5

Mr. Dennis Dickerson, Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013-1105

Dear Mr. Dickerson:

2001 STORMWATER POLLUTION PREVENTION MEDIA CAMPAIGN

The Los Angeles County Department of Public Works, in partnership with the City of Los Angeles, will launch the fourth annual Media Campaign during the week of March 26, 2001. The Media Campaign will teach Los Angeles County residents about simple, everyday actions they can take to help prevent stormwater pollution. This 18-week radio and newspaper media campaign, outlined in the enclosed Media Plan Flowchart, is one component of our overall public education program designed to meet the requirements of the Municipal Stormwater National Pollutant Discharge Elimination System Permit.

Through a united effort with 84 cities, the County's highly targeted public education program is designed to help motivate County residents to take simple measures that will help restore our stormwater quality and improve the quality of life in Southern California. In all radio and newspaper advertisements, the County and cities will be identified by the Project Pollution Prevention tag line or logo, as displayed below.

If you have any questions, please contact me at (626) 458-4014 or your staff may contact Melinda Barrett at (626) 458-5975.

Very truly yours,

HARRY W. STONE
Director of Public Works

Donald L. Wolfe

DONALD L. WOLFE
Assistant Director

PROJECT Pollution PREVENTION

TJS
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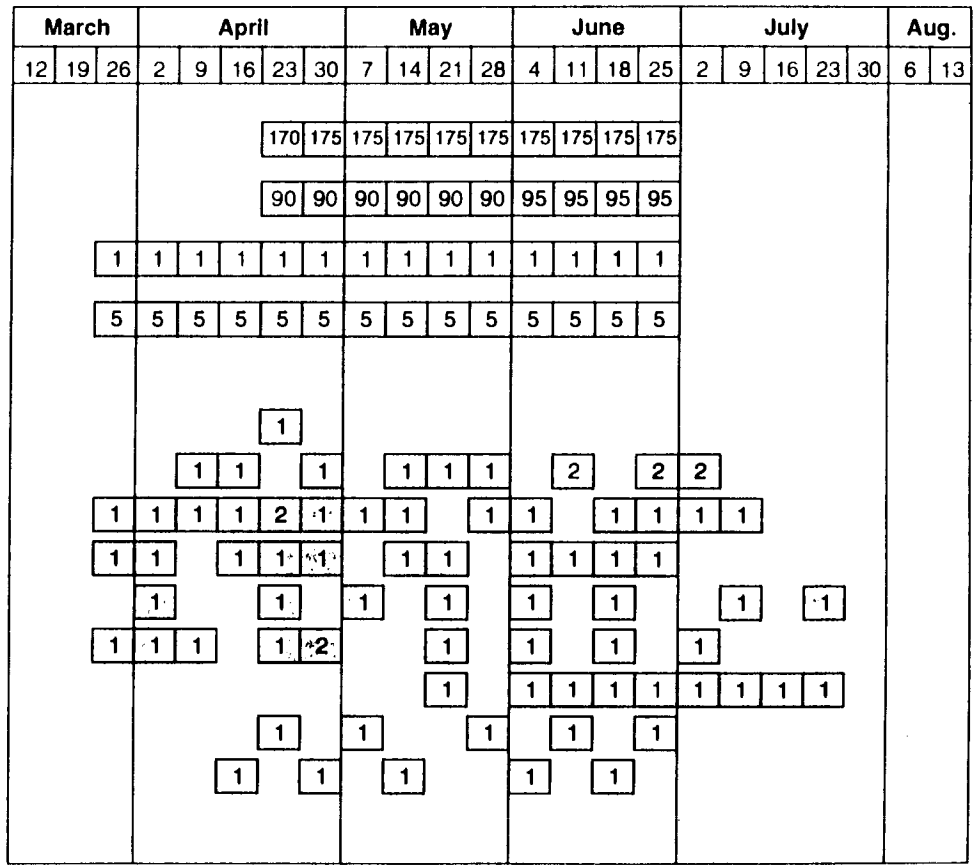
Enc.

R0001393

2001 Los Angeles Countywide Stormwater Advertising Campaign

Media Plan Flowchart - Radio & Newspaper

Rev. 1



	Units:	Cost:	%:
Spot Radio:			
General Market & Spanish (TRPs) Stations listed on schedule summary	1,745	$966,730.00	
Traffic Report Announcements: Networks TBD	920	$71,760.00	
Garden Talk, KFI-AM (640) Sat., 5:00am - 6:00am	14	$2,800.00	
Back to the Garden, KFWB-AM (980) Sa. 8:53a, 12:53p, 2:28p & Su. 7:28a, 4:53p	70	$14,000.00	
		$1,055,290.00	88%
Newspaper: (# of insertions)*			
Los Angeles Times	1	$13,095.00	
Daily News	12	$28,365.00	
La Opinión	15	$18,525.00	
San Gabriel Valley Group**	11	$20,975.00	
Long Beach Press-Telegram	8	$17,175.00	
Daily Breeze	10	$18,850.00	
L.A. Weekly, Los Angeles Edition	9	$14,538.01	
Los Angeles Downtown News	5	$4,765.00	
L.A. Watts Times	5	$3,650.00	
	76	$139,938.01	12%
		$1,195,228.01	100%

Notes:

- Preferred radio stations:
  - Neat Neighbors (A25-54): 1) KOST-FM, 2) KTWV-FM, 3) KIIS-FM
  - Rubbish Rebels (M18-24): 1) KPWR-FM, 2) KROQ-FM, 3) KKBT-FM
  - Spanish (A25-54): 1) KSCA-FM, 2) KLVE-FM, 3) KBUE-FM
- Newspaper costs based on 5 column x 7" ad size

* Based on an ad size of 5 column x 7"
** San Gabriel Valley Tribune, Pasadena Star News, Whittier News

R0001394

Los Angeles County
Municipal NPDES Permit
Executive Advisory Committee
Wednesday, March 14, 2001 - 1:30 P.M.
Los Angeles County Department of Public Works
900 South Fremont Avenue, Alhambra
12th Floor Conference Room

1. Call to Order
2. Approval of February 14, 2001, Minutes
3. Regional Board Update
4. Total Maximum Daily Load (TMDL)
   - Monitoring Plan
   - Task Force Report
5. Public Comments
6. Closed Session Discussion
7. Next Meeting - April 11, 2001
8. Adjournment

A:\EAC-AGENDA-MAR2001.WPD

LA County MS4
Proposed Renewal Schedule[1]

January 31st	Regional Board received ROWD from Permittees
February 14th	Regional Board – EAC Meeting
February 28th	Working Group meeting on IC/ID
Thursday, March 1st	Working Group Meeting on Monitoring
Friday, March 2nd	Regional Board issued ROWD comment letter
Wed, March 14th	1:30: Regional Board – EAC meeting 3:00: Working group meeting on the Construction Program
Thursday, March 15th	Regional Board to provide "preliminary" draft permit for permittee review – for discussion purposes only.
Thursday, March 22nd	Working group meeting with subcommittee of permittees to review preliminary draft
TBA	*Working group meeting on Commercial/Industrial Inspection Program*
TBA	*Working group meeting on Public Agency Program*
TBA	*Working group meeting on Development Planning*
TBA	*Working group meeting on Santa Clarita issues*
Mon, April 2nd	Issue first draft of permit/staff report (containing technical basis)
Wed, April 11th	1:30: Regional Board – EAC meeting
Wed, April 18th	Conduct workshop (Regional Board office, 1st floor auditorium)
Thurs, April 26th	Brief Board on renewal process at Board meeting (pasadena)
Tues, May 8th	Comments on first draft due
Wed, May 9th	1:30 Regional Board – EAC meeting
Fri, June 1st	Issue final draft of permit and staff report, including responses to initial comments
Wed, June 13th	1:30 Regional Board – EAC meeting
Fri, July 6th	Final written comments due
Wed, July 11th	1:30 Regional Board – EAC meeting
Wed, July 18th	Issue "Response to Comments" to public and to Board
Thurs, July 26th	Propose adoption at Board meeting (location TBA)

[1] Additional working group meetings – to discuss technical details of the SQMP – will probably need to be scheduled, depending on progress made at the first set of working group meetings.

Revised on March 14, 2001

CONTROLLING URBAN RUNOFF
NEW SUSMP REGULATIONS

A WORKSHOP FOR MUNICIPAL BUILDING & SAFETY AND PLANNING DEPARTMENTS

South Bay Cities Council of Governments and the City of Torrance invite you to participate in a free workshop designed for the Municipal Building & Safety and Planning Departments. This workshop will increase your understanding of:

- Urban runoff issues and problems, solutions and regulations
- Current and new Standard Urban Stormwater Mitigation Plan (SUSMP) requirements for development
- The technical aspects of Best Management Practices (BMPs)

The workshop activities include:

- A regulatory update by Xavier Swamikannu of the California Regional Water Quality Board.
- Speakers including representatives of the City of Los Angeles and Santa Monica explaining the requirements for controlling runoff from development.
- A creative, hands-on BMP design activity.

WHEN: March 27, 2001 10:00 AM - 4:00 PM
(Check-In and Registration – 9:00 AM)

WHERE: Torrance Cultural Arts Center
3330 Civic Center Drive
Torrance, California 90503

Space is Limited. Please RSVP by March 20, 2001 to:
Jacki Bacharach, Executive Director, SBCCOG
(ph) 310-377-8987; (fax) 310-377-5790
jackibacharach@compuserve.com

For information, please call: Wendell Johnson, City of Torrance Engineering Department @ (310) 618-2820

NAME:_____

COMPANY:_____

PHONE:_____ **FAX:**_____

EMAIL:_____ **# ATTENDING:**_____

R0001397

WASTE NEWS™

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Reporting on solid waste management, from product design to disposal and recovery

Volume 6, Issue 39 February 26, 2001 www.wastenews.com $2 per copy

'Butt bill' targets Maine smokers

Deposits aim at cigarette waste

By Cheryl A. McMullen

No butts about it — the state of Maine has a problem.

Smokers toss their cigarette butts along sidewalks, outside of businesses and in scenic Maine parks. Bunches of butts pile up outside of bars and public buildings where state laws prohibit smoking.

So what's a state that annually generates 2.3 billion cigarette butts to do?

State Rep. Joseph Brooks, a Democrat, is sponsoring a bill many have nicknamed the "Returnable Butts Bill" that calls for a deposit program on filtered cigarettes.

The bill would add a surcharge of 5 cents per cigarette or $1 per pack that could be redeemed by smokers who return cigarette butts to redemption centers. It also creates the Returnable Tobacco Products Fund, dedicated for payment of deposits and redemptions.

Brooks and others discussed the proposal in a hearing with the state Legislature's Business and Economic Committee last week.

"The goal, of course, is to get [the butts] up off the streets," Brooks said.

Smokers make up an estimated 20 percent of Maine's population, he said.

"However, we estimate only 10 percent throw their cigarettes out willy-nilly," Brooks said.

It is not an anti-smoking campaign, said Brooks, who opposed the law that bans smoking in Maine restaurants.

Cigarette makers would label each filtered cigarette offered for sale in Maine with the refund value and the state name. Each package would display the refund value of the entire pack of cigarettes.

See Butts, Page 23

AP PHOTO/PAT WELLENBACH

EXPENSIVE HABIT: If a Maine state legislator has his way, smokers like Rebecca Ray of Boothbay Harbor, Maine, will pay a 5-cent deposit on each cigarette they purchase, refundable only if they turn in their butts.

Butts

Continued from Page 1

Any unclaimed deposits will remain with the state to pay administrative costs and fund smoking cessation or other health and environmental laws, the Maine Innkeepers Association in Portland said. No stores or supermarkets would be required to accept returnable cigarette butts.

The innkeepers association helped research and create the proposed bill and supports it as an anti-litter campaign.

The association — which represents inns, bed-and-breakfasts, hotels and motels in the state — estimates businesses spend millions of dollars in payroll costs per year to pick up cigarette butts.

The proposed bill would reduce cigarette butt litter in Maine, an association spokesman said.

"People who would never consider throwing a wrapper from a McDonald's hamburger out the window think nothing of throwing out a cigarette butt," he said.

Doing the math

Maine's proposed "Returnable Butts Bill" would force smokers to pay an additional:

5 cents per cigarette

$1 per pack

$10 per carton

The legislation is not a tax and would not create additional costs for smokers if they properly dispose of the butts, he said. The redemption centers already are in place because of the bottle bill, so it makes sense to redeem them there, he said.

Other business groups aren't supportive of the bill.

The Maine Merchants Association is against the proposal for economic and health reasons, said Jim McGregor, the association's executive vice president.

There is confusion whether store clerks would be responsible for handling the butts and if they would be exposed to nicotine and other problems, McGregor said.

Some have compared the law to Maine's bottle bill, which sets up a redemption system for returned used drink containers, McGregor said. "But you don't pick up a bottle by the mouth," he said.

The law also could filter money into bordering New Hampshire, where no sales tax exists, McGregor said.

The bill would add $1 per package and $10 per carton, which could spark a black market for out-of-state cigarettes. Smokers would pay $4 to $5 per pack vs. $3 to $4.

"It's one more issue to prompt people to go to New Hampshire to shop," McGregor said.

But Brooks said he believes smokers will continue to buy cigarettes in Maine because they would get the money back when they return the butts to redemption centers in sealed plastic bags with 20 butts in each bag. Each bag would be worth $1.

> *It's one more issue to prompt people to go to New Hampshire to shop.*
>
> **Jim McGregor**
> *Maine Merchants Association*

But a resident brought a bag of cigarette butts to the meeting, and the foul smell permeated the committee room, McGregor said. "It was offensive," he said.

Tobacco companies are smoldering on the issue. Uncertain of the details of the law and how the state would expect them to stamp only those cigarettes going to Maine, companies such as R.J. Reynolds Tobacco Co., based in North Carolina, are taking a wait-and-see approach.

"We are very much in favor of a clean environment," said John Singleton, a spokesman for R.J. Reynolds. The company participates in river cleanups and other environmental programs, he said.

Singleton, who hadn't read the Maine bill, said the company supports enforcement of current litter laws over an increase in the price of cigarettes that could force smokers over state lines. That exodus would hit retailers in the pockets when smokers, who typically buy other products when buying cigarettes, go elsewhere, he said.

The Business and Economic Committee will address the issue again March 8 in a work session and could send it to the state House of Representatives for consideration. ■

March 14, 2001 – Major Issues from meeting with the:

Building Industry Association (BIA) of Southern California
1330 South Valley Vista Drive
Diamond Bar, CA 91765
(909) 396-9993
http://www.biasc.org

I. Permit - Construction General Permit

A. Issues

1. No SWPPPs on site
2. No implementation

B. Ways to improve

1. Cooperation between inspectors and developers
2. Enforcement tools used to change the mentality and attitude
3. Workshops
4. Phase II and monitoring

C. Issue on transfer of parcels from a big development site – the new owner must apply for own NOI

D. Catch basins – addressing the SUSMP and trash

E. SEP money from the ACL penalties

II. Municipal Issues

A. SUSMPs – alternative methods (especially for residential)

B. Immigration controllers (runoff, native plants)

C. Homeowner's Guide

D. Rain events

E. Categories v. existing data

Attendance:

1. Tim Piasky
2. Richard Laubros, BIA
3. Laura Gentile, US EPA
4. Dan Radulescu
5. Wendy Phillips
6. Xavier Swamikannu
7. Dennis Dickerson, RWQCB

1330 South Valley Vista Drive
Diamond Bar, California 91765
909.396.9993
fax: 909.396.1571
http://www.biasc.org
e-mail: rlambros@biasc.org

Richard J. Lambros
Executive Vice President

Building Industry Association
of Southern California

Proposed Agenda
Working Group to Address Construction Program Issues
On
March 14, 2001, 3:00 to 5:00
At the
Los Angeles County Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91803

1. Introductions, review agenda, etc.

2. Scope of Construction Program - Overview
   - current inspection program and record keeping
   - project thresholds [any exclusions, prioritization]
   - evidence necessary for issuing grading permits to projects covered under the state storm water permit

3. Local Enforcement Issues
   - legal authority
   - enforcing department
   - enforcement procedures
   - follow-up etc.
   - record keeping

4. Performance Standards
   - priority categories of projects
   - priority periods etc.

5. Proposed improvements to the Tracking system
   - database [web-based?]
   - GIS
   - Other

6. Coordination between Regional Board and Permittees Inspection Programs

7. Next Steps

PLEASE PRINT FOR RECORD OF PARTICIPATION Workshop Meeting on Construction Progress

Location: ~~CRWQCB - REGION 4~~ @ DPW
JUNIPERO-SERRA BUILDING
320 W. FOURTH STREET, SUITE 200, LOS ANGELES, CA 90013

Date: 3/14/01

~~PLEASE WRITE LEGIBLY~~

	NAME	AGENCY/COMPANY/ RESIDENT	MAILING/E-MAIL ADDRESS	TEL. NO.	FAX NO.
1.	Dan Radulescu	RWQCB - LA		213 5766668	
2.	Wendy Phillips	"		213.576.6618	
3.	Laura Gentile	US EPA Reg. 9		415-744-1913	
4.	Wendell Johnson	City of Torrance		310 618 5951 ~~310 660~~	618 2822
5.	Ed Schroder	Signal Hill		562 989-7355	562 989-7391
6.	Mustafa Ayaki			626- 455-5948	
7.	MORAD SEDRAK	City of LA		213 847-6353	847-5443
8.	Glenn Howe	LA Co. DPW		626-458-5563	
9.	Carolina Treviño	LACDPW	ctrevino@dpw.co.la.ca.us	(626) 458-3978	

R0001402

	NAME	AGENCY/COMPANY/ RESIDENT	ADDRESS	TEL. NO.	FAX NO.
10.	Wai Su	CACDPW	nivais@dpw.co.la.ca.us	(626) 458-6986	
11.					
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21.					
22.					

From: Xavier Swamikannu
To: internet:mariki@dpw.co.la.ca.us
Date: 3/15/01 5:05PM
Subject: Prelim Draft

Hi Mustapha:

Please find attached the prelim draft for discussion purposes at our meeting on March 22. It includes Part 1, Part 2, and Part 3 Special Provisions. At this time Findings, Standard Provisions, Monitoring, Definitions, and Attachments are not included [They are being worked on].

Recall that the contents are a starting point for discussion only and do not necessarily represent conclusive determinations.

Please limit circulation to those who are members of your sub-committee.

Thanks

Xavier

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
***For a list of simple ways to reduce demand and cut your energy costs, see the tips at: http://www.swrcb.ca.gov/news/echallenge.html ***

Dr. Xavier Swamikannu
Storm Water Program
CalEPA - RWQCB - Los Angeles
320 W. 4th Street
Los Angeles, CA 90013

e-mail: xswami@rb4.swrcb.ca.gov
phone: (213)576-6654

CC: Dan Radulescu; Wendy Phillips

Part 1. DISCHARGE PROHIBITIONS

A. The Permittee shall effectively prohibit non-storm water discharges into the MS4 and watercourses except where such discharges are presumed to be free of pollutants and are either:

1. Are covered by a separate individual or general NPDES permit; or

2. Are in one of the categories below, and meet all conditions specified by the Executive Officer:

a) Categories of natural flow:

(1) Springs and rising ground water;

(2) Flows from riparian zones or wetlands;

(3) Stream diversions, permitted by the State Board; and

(4) Storm water infiltrating into the ground and then into storm drains.

b) Categories of emergency flows:

(1) Emergency fire fighting runoff.

c) Categories of flows incidental to urban activities, all of which are subject to conditions that shall be approved by the Executive Officer:

(1) Landscape irrigation runoff from potable or Title 22 recycled waters;

(2) Water line flushing of potable water distribution systems;

(3) Incidental runoff from potable water sources;

(4) Passive drains for foundations, footings, and crawl spaces;

(5) Air conditioning condensate;

(6) Dechlorinated swimming pool discharges;

(7) Non-commercial car washing by residents or by non-profit organizations; and

(8) Sidewalk washing.

In the event that any of the above categories of non-storm water discharges are determined to be a source of pollutants by the Executive Officer, the discharge will no longer be exempt from this prohibition unless the Permittee implements conditions approved by the Executive Officer to ensure that the discharge is not a source of pollutants. Notwithstanding the above, the Regional Board Executive Officer may impose additional prohibitions of non-storm water discharges in consideration of anti-degradation policies.

Part 2. RECEIVING WATER LIMITATIONS

B. Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited.

C. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance.

D. The Permittee shall comply with the permit through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the SQMP and its components and other requirements of this permit including any modifications. The SQMP and its components shall be designed to achieve compliance with receiving water limitations. If exceedances of water quality objectives or water quality standards (collectively, water quality standards) persist, notwithstanding implementation of the SQMP and its components and other requirements of this permit, the Permittee shall assure compliance with discharge prohibitions and receiving water limitations by complying with the following procedure:

1. Upon a determination by either the Permittee or the Regional Board that discharges are causing or contributing to an exceedance of an applicable water quality standard, the Permittee shall promptly notify and thereafter submit a report to the Regional Board that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedances of water quality standards. This report may be incorporated in the annual update of the SQMP and its components unless the Regional Board directs an earlier submittal. The report shall include an implementation schedule. The Regional Board may require modifications to the Report.

2. Submit any modifications to the report required by the Regional Board within 30 days of notification

3. Within 30 days following the approval of the report, the Permittees shall revise the SQMP and its components and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, implementation schedule, and any additional monitoring required

4. Implement the revised SQMP and its components and monitoring program according to the approved schedule

E. So long as the Permittee has complied with the procedures set forth above and is implementing the revised SQMP and its components, the Permittee does not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Regional Board to develop additional BMPs.

Part 3. STORM WATER QUALITY MANAGEMENT PLAN IMPLEMENTATION, MONITORING, AND REPORTING

F. Responsibilities of the Principal Permittee

The Principal Permittee will coordinate and facilitate activities necessary to comply with the requirements of this Order, but is not responsible for ensuring compliance of any individual Permittee. The County of Los

Angeles is hereby designated as the Principal Permittee, and as such shall:

1. Coordinates permit activities among Permittees and negotiate NPDES requirements with the Regional Board.

   All Permittees will be given the opportunity to have an active role in, provide input and participate in the development of permit requirements. However, the Principal Permittee and the watershed Executive Advisory Committee (EAC) representative(s) will conduct formal discussions with the Regional Board on behalf of Permittees.

2. Provide personnel and fiscal resources for the necessary update of the SQMP and its components;

3. Convene the Watershed Management Committees (WMCs) constituted pursuant to Part H., below, upon designation of representatives;

4. Provide technical and administrative support for committees that will be organized to implement the SQMP and its components;

5. Implement the Countywide Monitoring Program required in this Order;

6. Provide personnel and fiscal resources for the preparation and submittal to the Regional Board of annual reports and summaries of other reports required under the SQMP; and

7. Comply with the "Responsibilities of the Permittees" in Part G., below;

G. Responsibilities of the Permittees

Each Permittee is only responsible for the implementation of the appropriate storm water management program developed pursuant to the requirements of this Order, and not for the implementation of the provisions applicable to the Principal Permittee or other Permittees. A

Permittee is required to comply only with the requirements of this Order applicable to discharges, which originate from places within its boundaries over which it has authority to enforce the requirements of this Order. Each Permittee shall, within its geographic jurisdiction:

1. Comply with the requirements of the SQMP and its amendments;

2. Coordinate among its internal departments and agencies, as appropriate, to facilitate the implementation of the requirements of the SQMP and its components applicable to such Permittee in an efficient and cost-effective manner;

3. Participate in the update of the SQMP and its components;

4. Designate a technically knowledgeable representative to the appropriate WMC;

5. Implement the SQMP upon approval by the Executive Officer; and,

6. Work with other public agencies (e.g. Fire Department, Building and Safety, Code Enforcement, etc.) toward the successful implementation of the provisions of this Order and SQMP components. As such, these organizations are expected to actively participate in implementing the area wide storm water program.

H. Watershed Management Committees (WMCs)

1. Each WMC shall be comprised of a voting representative from each Permittee in the Watershed Management Area (WMA).

2. The WMC's chair and secretary shall be chosen by the WMC upon permit adoption and on an annual basis, thereafter. In the absence of volunteer Permittee(s) for the positions, the Principal Permittee shall assume those roles until the WMC chooses members of the committee for the positions.

3. Each WMC shall:

a) Facilitate cooperation and exchange of information among Permittees;

b) Establish additional goals and objectives and associated deadlines for the WMA, as the program implementation progresses;

c) Prioritize pollution control efforts based on beneficial use impairment(s), watershed characteristics and analysis of results from studies and the monitoring program;

d) Develop and/or update and monitor the adequate implementation, on an annual basis, of the tasks identified for the WMA;

e) Assess the effectiveness of, prepare revisions for, and recommend appropriate changes to the SQMP and its components;

f) Continue the Industrial/Commercial Source Identification program. Additional industrial/commercial or other types of activities will be investigated and those identified as priority shall be included in the IIEP;

g) Conduct joint WMC meetings at least four times per year and, as necessary.

I. Executive Advisory Committee (EAC)

1. The EAC is constituted by one representative from the Malibu Creek WMA and by two representatives from each of the other WMAs, along with representatives from the City of Los Angeles, and the Los Angeles County.

J. General Requirements

1. The Permittees shall, at a minimum, adopt and implement the elements of the SQMP and its components that are consistent with the terms of this permit.

   Additionally, modifications to the SQMP made during the term of the permit including those made in accordance with part 3.B.(?) of this permit shall be implemented.

2. The SQMP shall, at a minimum, comply with applicable requirements of 40 CFR 122.26(d)(2). The SQMP and its components shall be implemented so as to reduce the discharges of pollutants in storm water to the maximum extent practicable. The SQMP and its components are described in attachments A to X.

3. Each Permittee shall be responsible for implementation of the relevant portions of the SQMP within its jurisdictional boundaries. The Principal Permittee shall be responsible for program coordination as described in III.A, as well as, compliance with the relevant portions of the permit within its jurisdiction.

K. SQMP Modifications

1. The Permittees shall modify the SQMP and its components adopted with this Order to make it consistent with the requirements herein. The revised SQMP and its components will be submitted to the Regional Board Executive Officer for approval no later than (six months from the adoption of this Order).

2. The Permittee shall modify the SQMP to comply with waste load allocations developed and approved pursuant to the process for the designation and implementation of Total Daily Maximum Loads (TMDLs) for impaired water bodies.

3. The Regional Board Executive Officer may approve changes to the SQMP and its components, except noted in (above paragraph), either:

a) Upon petition by the Permittees or interested parties, and after providing for and considering public comment, or,

b) As deemed necessary by the Regional Board Executive Officer following notice to the Permittees, and after providing for and considering public comments.

4. The Permittees shall modify the SQMP and its components, at the direction of the Regional Board Executive Officer, to incorporate regional provisions. Such provisions may include watershed specific requirements for watersheds shared by Permittees with other MS4 programs.

L. Legal Authority

1. Permittees shall possess the necessary legal authority to prohibit non-storm water discharges, to the maximum extent practicable, to the storm drain system, including, but not limited to:

a) A prohibition on illicit discharges and illicit connections and a requirement for removal of illicit connections;

(1) Prohibit the discharge of wash waters to the MS4 from the cleaning of gas stations, auto repair garages, or other types of automotive service facilities;

(2) Prohibit the discharge of runoff to the MS4 from mobile auto washing, steam cleaning, mobile carpet cleaning, and other such mobile commercial and industrial operations;

(3) Prohibit the discharge of runoff to the MS4 from areas where repair of machinery and equipment which are visibly leaking oil, fluid or antifreeze, is undertaken;

(4) Prohibit the discharge of runoff to the MS4 from storage areas of materials containing grease, oil, or

other hazardous substances, and uncovered receptacles containing hazardous materials;

(5) Prohibit the discharge of chlorinated swimming pool water and filter backwash to the MS4;

(6) Prohibit the discharge of untreated runoff from the washing of toxic materials from paved or unpaved areas to the MS4;

(7) Prohibit washing impervious surfaces in industrial/commercial areas that results in a discharge of untreated runoff to the MS4, unless specifically required by State or local health and safety codes; and

(8) Prohibit the discharge from washing out concrete trucks, pumps, tools, and equipment to the MS4.

b) A prohibition on spills, dumping, or disposal of materials into the MS4, other than storm water, such as;

(1) Litter, landscape debris and construction debris;

(2) Any state or federally banned pesticide, fungicide or herbicide;

(3) Food wastes; and

(4) Fuel and chemical wastes, animal wastes, garbage, batteries, and other materials that have potential adverse impacts on water quality.

c) A mechanism to control, through interagency agreement, the contribution of pollutants from one portion of the MS4 to another portion of the MS4;

d) A requirement for compliance with conditions in Permittees ordinances, permits, contracts, or orders (i.e. hold dischargers to its MS4 accountable for their contributions of pollutants and flows);

e) Utilize enforcement mechanisms to require compliance with Permittees ordinances, permits, contracts, or orders;

f) Control the contribution, or potential contribution, of pollutants in discharges of storm water runoff associated with industrial activities (including construction activities) **to** its MS4 and controls the quality of storm water runoff **from** industrial sites (including construction sites). This requirement applies both to industrial and construction sites that have coverage under statewide general industrial or construction storm water permits, as well as those sites that do not. Any existing ordinances will be upgraded and enforced as necessary to comply with this Order as specified in (next after following paragraph by:); and,

g) The ability to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and non-compliance with permit conditions, including the prohibition of illicit discharges to the MS4. Permittees must possess authority to enter, sample, inspect, review and copy records, and require regular reports from industrial facilities discharging polluted or potentially polluted storm water runoff into its MS4 (including construction sites).

h) Require the use of best management practices (BMPs) to prevent or reduce the discharge of pollutants to MS4s.

2. Each Permittee shall adopt, implement an agency-specific storm water and urban runoff ordinance or amend an existing one, if necessary, to be able to enforce all requirements of the permit.

M. Annual Storm Water Program Report and Assessment

1. The Discharger shall submit, by October 15 of each year beginning the Year 2002, an Annual Storm Water Program Report and Assessment documenting the status of the general program and individual tasks contained in the SQMP, and in accordance with the requirements identified in the Monitoring and Reporting Program CIxxxx of this order. The Discharger will link the evaluation of the Annual Storm Water Program Report and Assessment with the results of analyses from the monitoring and reporting program. The Annual Storm Water Program Report and Assessment shall cover the previous fiscal year from July 1 through June 30, and shall include the information necessary to assess the Discharger's compliance status relative to this Order, and the effectiveness of implementation of permit requirements on storm water quality. The Annual Storm Water Program Report and Assessment shall include any proposed changes to the SQMP and its components as approved by the Management Committee(s) (minor changes, major approved by the EO?).

   The Discharger shall submit by October 15, 2002, the Annual Report for period July 1, 2000 through July 28,2001 documenting the status of the general program up to permit reissuance and the results of analyses from the monitoring and reporting program.

2. Storm Water Management Program Budget

   a) The Discharger shall prepare annually a budget summary on resources applied to the storm water management program using the form attached. This budget summary shall include an annual summary identifying the storm water budget for the following year, using estimated percentages and written explanations where necessary, for the specific categories noted below:

      (1) Program management

      (2) Illicit connection/illicit discharge

      (3) Development planning/development construction

(4) Industrial inspection activities (including construction activities)

(5) Public Agency Activities

(i) Operations and maintenance

(ii) Municipal Street Sweeping

(iii) Fleet and Public Agency Facilities

(iv) Landscape and Recreational Facilities

(6) Capital Costs

(7) Public Information and Participation

(8) Monitoring Program

(9) Other

Permittees, in addition to the budget summary, shall report any supplemental dedicated budgets, if any, for the same categories.

N. Storm Water Monitoring Report

1. The Principal Permittee shall submit a Storm Water Monitoring Report on July 15, 2002 and annually on July 15 thereafter, in accordance with the requirements identified in the Monitoring and Reporting Program CI-XXXX of this order. The report shall include:

a) Status of implementation of the monitoring program as described in the attached Monitoring and Reporting Program CI-XXXX;

b) Results of the monitoring program; and

c) A general interpretation of the significance of the results, to the extent that data allows.

O. Modification

1. The Regional Board Executive Officer or the Regional Board consistent with 40 CFR 122.41 may approve changes to the Los Angeles County Storm Water Quality Monitoring Program, after providing the opportunity for public comment, either:

   a) By petition of the Permittee or by petition of interested parties, after the submittal of the Annual Monitoring Program Report. Such petition shall be filed not later than 60 days after the Annual Monitoring Program Report submittal date; or

   b) As deemed necessary by the Regional Board Executive Officer following notice to the Permittee.

Part 4. SPECIAL PROVISIONS

The Permittees shall modify the SQMP and its components adopted with this Order to make it consistent with the requirements herein. The revised SQMP and its components will be submitted to the Regional Board Executive Officer for approval no later than (six months from the adoption of this Order)

Public Information and Participation Program

P. Programs for Residents

1. The Discharger shall implement the Public Education Program as outlined in the SQMP, including the continuation of the following activities:

   a) Advertising

   b) Media Relations

   c) Public Service Announcements

   d) "How To" Instructional Material Distributed in a Targeted and Activity-Related Manner

   e) Corporate, Community Association, Environmental Organization and Entertainment Industry Tie-Ins

   f) 1-888-CLEAN-LA and 888CleanLA.com

   g) Events Targeted to Specific Activities and Population Sub-groups

2. Countywide Hotline

   The 888-CLEAN-LA hotline will serve as the general public reporting contact for reporting clogged catch basin inlets and illicit discharges/dumping, and general storm water management information. Each Permittee may establish its own hotline if preferred. Permittees shall include this information, updated when necessary, in public information, and the government pages of the telephone book as they are developed/published.

3. "No Dumping" Message

   Permittees shall mark all storm drain inlets with a legible "no dumping" message. In addition, signs with prohibitive language discouraging illegal dumping must be posted at designated public access points to creeks, other relevant water bodies, and channels by July 26, 2003. Good signage shall be maintained.

4. Outreach and Education

Each Permittee shall conduct educational activities within its jurisdiction and participate in countywide events.

The Principal Permittee shall organize Public Outreach Strategy meetings with all Co-permittees on a quarterly basis. The Principal Permittee shall provide guidance for Co-permittees to augment the regional outreach and education program. Co-permittees shall coordinate regional and local outreach and education to reduce duplication of efforts.

Permittees shall coordinate to develop outreach programs that target the watershed-specific pollutants listed in Table 1 within 6 months of the permit adoption date. It may be appropriate to address metals in the Industrial/Commercial businesses program. Region-wide pollutants may be included in the Principal Permittee's mass media efforts.

Table 1. Target Pollutants for Outreach

Watershed	***Target Pollutants for Outreach***
Ballona Creek	Trash*, Coliform*, Metals*
Malibu Creek	Trash*, Nutrients*, Coliform*
Los Angeles River	Trash*, Nutrients (Nitrogen)*, Coliform*, Metals*, Pesticides*
San Gabriel River	Trash*, Nutrients (Nitrogen)*, Coliform*, Metals*
Dominguez Channel	Trash*, Coliform*

* = Pollutants scheduled for TMDLs within 5 years

Each Permittee shall distribute outreach materials to the general public and target audiences, such as schools, community groups, contractors and developers, and at appropriate public counters and events. Outreach material shall include information on pollutants and sources of concern, as listed in Table 1.

The Discharger shall insure that a minimum of 50 million impressions per year are made on the general public about storm water quality via print, local TV access, local radio, or other appropriate media.

The Discharger shall provide all Unified School Districts within its jurisdiction with materials, including videos, live presentations, brochures, and other media necessary to educate a minimum of 50 percent of all school children (K-12) every 2 years on storm water pollution. All Co-permittees shall cooperate with funding and implementing this requirement. Cooperative efforts with other agencies may also be used to accomplish this requirement.

5. Business Outreach

The industrial/commercial educational site inspection program that commenced under Order 96-045 shall be upgraded to a site inspection program pursuant to Section XXX.

Permittees shall retain and make available education material associated with the industrial/educational site visit program.

Each Permittee shall provide outreach services and materials to target businesses on a basis that is to be determined. When outreach services are provided, Permittees shall:

a) Consult with a representative of the facility to explain applicable storm water regulations;

b) Distribute and discuss applicable BMP and educational materials; and,

c) Conduct a site walk-through to inspect for, at a minimum, evidence of illicit discharges and storm water educational programs for employees.

Permittees shall revisit target facilities where evidence of illicit discharge is found within six months of the inspection. If necessary, Co-permittees will begin enforcement action to remove sources of illicit discharges.

Annually, the Principal Permittee shall submit a summary of the overall strategy and any updates or modifications to the Public Information and Participation Program to the Executive Officer for approval.

Q. Programs for Industrial/Commercial/Commercial Businesses

Each Permittee shall implement an Industrial/Commercial Program to:

- reduce pollutants in runoff from all Industrial/Commercial sites to the maximum extent possible.

At a minimum the Industrial/Commercial program shall address:

- Regulatory mechanism requiring the implementation of proper Pollution Prevention and control measures at industrial/commercial sites;
- Source Identification;
- Threat to Water Quality Prioritization;
- Site plan review and BMP Implementation;
- Inspection of Industrial/Commercial Sites;
- Enforcement of pollution prevention and control measures at Industrial/Commercial Sites;
- Have sanctions to ensure compliance (established in the regulatory mechanism).

1. Pollution Prevention (Industrial/Commercial)

   Each Permittee shall implement pollution prevention methods in its Industrial/Commercial Program and shall require its use by industry, where appropriate.

2. Source Identification (Industrial/Commercial)

   Each Permittee shall develop and update annually a watershed-based inventory of all Industrial/Commercial sites within its jurisdiction regardless of site ownership. This requirement is applicable to all Industrial/Commercial sites regardless of whether the Industrial/Commercial site is subject the California statewide General NPDES Permit for Storm Water Discharges Associated With Industrial Activities, Except Construction (hereinafter General Industrial Permit) or other individual NPDES permit. Critical Sources Study results may be used to satisfy the requirements of this section. The inventory shall include the following minimum information for each Industrial/Commercial site:

a) name;

b) address; and

c) a narrative description including SIC codes that best reflects the principal products or services provided by each facility. The use of an automated database system, such as Geographical Information System (GIS) or web-based is highly recommended, but not required. Any database already available may be used to satisfy the requirements of this section.

3. Threat to Water Quality Prioritization (Industrial/Commercial)

a) To establish priorities for Industrial/Commercial oversight activities under this Order, the Permittee shall prioritize each watershed-based inventory in B.2. above by threat to water quality and update annually. Each Industrial/Commercial site shall be classified as high, medium, or low threat to water quality. In evaluating threat to water quality each Permittee shall consider (1) type of Industrial/Commercial activity (SIC Code); (2) materials used in Industrial/Commercial processes; (3) wastes generated; (4) pollutant discharge potential; (5) non-storm water discharges; (6) size of facility; (7) proximity to receiving water bodies; (8) sensitivity of receiving water bodies; (9) whether the Industrial/Commercial site is subject to the statewide General Industrial Permit; and (10) any other relevant factors.

b) At a minimum the high priority Industrial/Commercial sites shall include Industrial/Commercial facilities that are subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA); Industrial/Commercial facilities tributary to a Clean Water Act section 303(d) impaired water body, where a facility generates pollutants for which the water body is impaired; Industrial/Commercial facilities within or directly adjacent to or discharging directly to coastal lagoons or other receiving waters within environmentally sensitive areas); facilities subject to the statewide General Industrial Permit; and all other Industrial/Commercial facilities that the Permittee determines are contributing significant pollutant loading to its MS4,

regardless of whether such facilities are covered under the statewide General Industrial Permit or other NPDES permit.

4. Pollution Prevention, Control Measures and BMP Implementation

a) Each Permittee shall designate a set of minimum BMPs for high, medium, and low threat to water quality Industrial/commercial sites (as determined under section B.3.) and submit to the Regional Board for EO's approval. The designated minimum BMPs for high threat to water quality Industrial sites shall be industry and site specific as appropriate.

b) Each Permittee shall implement, or require the implementation of, the designated minimum BMPs (based upon the site's threat to water quality rating) at each industrial site within its jurisdiction. If particular minimum BMPs are infeasible at any specific site, each Permittee shall implement, or require implementation of, other equivalent BMPs. Each Permittee shall also implement or require any additional site specific BMPs as necessary to comply with this Order including BMPs which are more stringent than those required under the statewide General Industrial Permit.

c) Each Permittee shall implement, or require implementation of, additional controls for Industrial/Commercial sites tributary to Clean Water Act section 303(d) impaired water bodies (where a site generates pollutants for which the water body is impaired) as necessary to comply with this Order. Each Permittee shall implement, or require implementation of, additional controls for Industrial/Commercial sites within or directly adjacent to or discharging directly to coastal lagoons or other receiving waters within environmentally sensitive areas as necessary to comply with this Order.

5. Inspection of Industrial Sites

a) Each Permittee shall conduct Industrial site inspections for compliance with its ordinances, permits, and this Order.

Inspections shall include review of BMP implementation plans.

b) Each Permittee shall establish inspection frequencies and priorities as determined by the threat to water quality prioritization described in B.3. above. Each Permittee shall inspect high priority Industrial sites, at a minimum:

(1) Bi-annually

OR

(2) Bi-annually for any site that the responsible Permittee certifies in a written statement to the LARWQCB all of the following (certified statements may be submitted to the LARWQCB at any time for one or more sites):

(i) Permittee has record of Industrial site's Waste Discharge Identification Number (WDID#) documenting Industrial site's coverage under the statewide General Industrial Permit; and

(ii) Permittee has reviewed the Industrial site's Storm Water Pollution Prevention Plan (SWPPP); and

(iii) Permittee finds SWPPP to be in compliance with all local ordinances, permits, and plans; and

(iv) Permittee finds that the SWPPP is being properly implemented on site (including designated minimum BMPs).

Each Permittee shall inspect medium and low threat to water quality Industrial/Commercial sites based on prioritization criteria submitted to the Regional Board subject to EO's approval.

c) Based upon site inspection findings, each Permittee shall implement all follow-up actions necessary to comply with Permittee's ordinances and this Order.

d) To the extent that the LARWQCB has conducted an inspection of a high priority Industrial/Commercial site during a particular year, the requirement for the responsible Permittee to inspect this site during the same year will be satisfied.

6. Inspection of Commercial Sites

Each Permittee shall conduct site inspections at restaurants, automotive service related businesses, retail gasoline outlets and other commercial sites (as designated by the Permittees) for compliance with its ordinances, permits, and this Order.

7. Enforcement of Pollution Prevention and Control Measures at Industrial/Commercial Sites

a) Each Permittee shall enforce its storm water ordinance at all Industrial/Commercial sites as necessary to maintain compliance with this Order. Permittee ordinances or other regulatory mechanisms shall include sanctions to ensure compliance.

8. Reporting of Non-compliant Sites (Industrial/Commercial)

a) Each Permittee shall provide oral notification to the LARWQCB of non-compliant sites that are determined to pose a threat to human or environmental health within its jurisdiction within 24 hours of the discovery of noncompliance.

b) Each Permittee shall develop and submit criteria by which to evaluate events of non-compliance to determine whether they pose a threat to human or environmental health. These criteria shall be submitted in the SQMP and Annual Reports for LARWQCB review and subject to EO's approval.

Such oral notification shall be followed up by a written report to be submitted to the LARWQCB within 5 days of the incidence of non-compliance. Sites are considered non-compliant when one or more violations of local ordinances, permits, plans, or this Order exist on the site.

PERFORMANCE STANDARDS AND REPORTING

High Priority Sites inspection schedule:

- once every 24 months; not less than twice during the five years of the permit
- Additional facilities selected by WMC: once every 36 months
- For facilities identified with non-compliance, 100% follow-up
- Lower priority sites once in five years

Commercial Sites

- Once every 24 months

Reporting and progress

- At the start of the permit a baseline will be established (total number of targeted facilities in each category)
- From that baseline number a schedule of inspections will be developed The Annual Report will reflect the annual baseline and the progress for that respective year and for each additional year (cumulative progress also)
- In the Annual Report it will be reported the number of enforcement actions and follow-up inspections of non-compliant sites and a cumulative progress report kept during subsequent years of the permit
- Related training activities will be reported annually

R. Program for Development Planning

The Permittees shall implement a development-planning program with immediate effect that will require all planning priority development and redevelopment projects to,

1. Minimize impacts from storm water and urban runoff on the biological integrity of natural drainage systems and water bodies in accordance with requirements under CEQA, Section 404 of the CWA, local ordinances and other legal authorities;

2. Maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground;

3. Minimize the quantity of storm water directed to impermeable surfaces and the MS4

4. Minimize pollution emanating from parking lots through the use of appropriate treatment control BMPs and good housekeeping practices;

5. Establish reasonable limits on the clearing of vegetation from the project site including, but not limited to, regulation of the length of time during which soil may be exposed and in certain environmentally critical situations, the prohibition of bare soil;

6. Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from the development site.

Peak Flow Control

The Permittees shall establish and enforce numerical criteria no later than [90 d from permit adoption] to control the post-development peak storm runoff discharge rates in natural drainage systems to maintain or reduce pre-development peak discharge rates to prevent down-stream erosion, and to protect stream habitat.

Standard Urban Storm Water Mitigation Plans

The Permittee shall require that a Standard Urban Storm Water Mitigation Plan as approved by the Regional Board in Board Resolution No. R 00-02 be implemented for the following categories of developments with immediate effect:

a) Single-family hillside residences

b) Ten or more unit homes (includes single family homes, multifamily homes, condominiums, and apartments)

c) A 100,000 or more square feet commercial development

d) A 100,000 or more square feet industrial development

e) Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534, and 7536-7539)

f) Retail gasoline outlets

g) Restaurants (SIC 5812)

h) Parking lots 5,000 square feet or more or with 25 or more parking spaces

The Permittee shall require, no later than [180 days from permit adoption] that a Standard Urban Storm Water Mitigation Plan be implemented for all projects located in or directly adjacent to or discharging directly to an environmentally sensitive area, where, the development will

a) create 2,500 square feet or more of impervious area, or

b) alter the area of imperviousness to ten or more percent of the naturally occurring condition

Numerical Design Criteria

The Permittees shall require that post-construction treatment control BMPs incorporate, at a minimum, the following design criteria to mitigate (infiltrate, filter or treat) storm water runoff:

Volumetric Structural or Treatment Control BMP

a. the 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No.*

87, (1998), or

b. the volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in *California Stormwater Best Management Practices Handbook – Industrial/ Commercial,* (1993), or

c. the volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or

d. the volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event,

AND/ OR

Flow Based Structural or Treatment Control BMP

e. the flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity, or

f. the flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County

g. the flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above,

Applicability of Numerical Design Criteria

The Permittees shall require the following categories of planning priority projects to design and implement post-construction treatment and structural controls to mitigate storm water pollution prior to issuing grading or building permits:

c) Single-family hillside residences

a) Ten or more unit home development (includes single family homes, multifamily homes, condominiums, and apartments)

b) A 100,000 or more square feet commercial development

c) A 100,000 or more square feet industrial development

d) Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534 and 7536-7539)

e) Retail gasoline outlets [suggested criteria: projected gasoline output of 25,000 gallons per month or more; or with four or more fueling islands, or with 24 or more dispensing meters or projected average daily traffic of 100 cars or more or 5,000 square feet or more of surface area]

f) Restaurants (SIC 5812) [5,000 square feet or more]

g) Parking lots 5,000 square feet or more or with 25 or more parking spaces

h) Projects located in, adjacent to, or discharging directly to environmentally sensitive areas that meet area or impervious thresholds identified above.

Each Permittee shall require the implementation of SUSMP and post-construction control requirements for the following categories of development planning projects no later than March 9, 2003, to conform to USEPA Phase II requirements:

d) One acre (40,000 square feet) commercial development

e) One acre (40,000 square feet) industrial development

Urban Storm Water Mitigation Plans

The Permittee shall require a site-specific Urban Storm Water Mitigation Plan for developments not requiring a SUSMP but which may potentially have adverse impacts on post-development storm water quality storm, where the following project characteristics exist:

f) Vehicle or equipment fueling areas;

g) Vehicle or equipment maintenance areas, including washing and repair

h) Commercial or industrial waste handling or storage

i) Outdoor handling or storage of hazardous materials;

j) Hillside location

k) Outdoor manufacturing areas

Redevelopment Projects

The Permittees shall apply the SUSMP, USMP and post-construction storm water mitigation requirements to all projects that undergo significant redevelopment in their respective categories with immediate effect. Significant redevelopment means the creation or addition or replacement of 5,000 square feet of impervious surface area on an already developed site. Where significant redevelopment results in an increase of more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post development storm water quality control requirements, the entire project must be mitigated.

Maintenance Agreement and Transfer

The Permittee shall require that all developments subject to SUSMP and USMP requirements provide verification of maintenance provisions for structural and treatment control BMPs, including but not limited to legal agreements, covenants, CEQA mitigation requirements, and or conditional use permits. Verification at a minimum shall include,

l) The developers signed statement accepting responsibility for maintenance until the responsibility is legally transferred, and either

m) A signed statement from the public entity assuming responsibility for structural or treatment control BMP maintenance and that it meets all local agency design standards, or

n) Written conditions in the sales or lease agreement, which requires the recipient to assume responsibility for maintenance and conduct a maintenance inspection at least once a year, or

o) Written text in project conditions, covenants and restrictions (CCRs) for residential properties assigning maintenance responsibilities to the HomeOwners Association for maintenance of the structural and treatment control BMPs; or

p) Any other firm legally enforceable agreement that assigns responsibility for the maintenance of post-construction structural or treatment control BMPs

Mitigation Funding

The Permittees shall identify no later than [120 d from permit adoption] a funding mechanism[s] and management framework, for endorsement by the Regional Board Executive Officer, to support regional solutions to storm water pollution, where the following situations occur:

q) A waiver for impracticability or threat to ground water is granted

r) External funds are made available

s) Off-site mitigation is required because of loss of environmental habitat

CEQA Document Update

Permittees shall make appropriate modifications to their internal planning procedures for preparing / reviewing CEQA documents, and for linking storm water quality mitigation conditions to all project approvals, with immediate effect

General Plan Update

The Permittees shall update appropriate elements of Permittee General Plans to include watershed and storm water quality and quantity

management considerations with immediate effect [or provide a firm schedule for update no later than 90 d from permit adoption?]. Appropriate elements include, but are not limited to, water quality protection, development goals and policies, open space goals and policies, preservation of and integration with natural features, and water conservation policies.

Targeted Employee Training

Permittees shall train their employees in targeted positions (whose jobs or activities are engaged in development planning) regarding the requirements of the development planning on an annual basis beginning no later than [90 d from permit adoption], and more frequently if necessary.

Developer Technical Guidance and Information

The Permittees shall develop and make available to developers no later than [180 d from permit adoption] development planning guidelines and a technical manual for the siting and design of BMPs. The technical manual shall at a minimum include:

t) Specifications for treatment control BMPs based on flow-based and volumetric water quality design criteria for the purposes of countywide consistency,

u) Criteria for control of peak discharge rates and duration,

v) Expected pollutant removal performance ranges

w) Maintenance considerations

Performance Standards [move to Annual Program Report]

Total number and percent of all development projects reviewed and conditioned to meet SUSMP requirements by category such as residential, commercial, and industrial.

Total square feet of impervious area conditioned for mitigation by development and redevelopment category.

Significant date rewrite completed of General Plan with storm water considerations

Percent and total number of targeted staff trained annually [100 percent]

Date CEQA guidelines revision completed to include storm water mitigation conditions

Date BMP design and sizing technical manual completed and made available electronically

S. Programs for Construction Sites

Each Permittee shall implement a Construction program to:

- reduce pollutants in runoff from all construction sites to the maximum extent practicable

At a minimum the construction program shall address:

- Regulatory mechanism requiring the implementation of proper erosion and sediment controls, and control of other wastes from all construction sites;
- Site plan review and BMP Implementation
- Inspection of construction sites
- Enforcement of control measures at all construction sites
- Have sanctions to ensure compliance (established in the regulatory mechanism)

1. Permittees shall implement storm water pollution prevention and control measures for all construction sites (private or public). The SQMP will be modified by _____ to include activities addressing the following categories:

   a) Large construction sites (greater than five acres)

   b) Medium construction sites (between one and five acres)

   c) Small construction sites (less than one acre)

2. Permittees shall require the preparation, submittal, and implementation of a Storm Water Pollution Control Plan (SWPCP) prior to issuance of a grading permit for construction projects that

meet one of the following criteria:

a) Will result in soil disturbance of one acre or more in size;

b) Is within or discharging directly to or directly adjacent to an environmentally sensitive area or,

c) Is located in a hillside area.

3. Permittees shall prepare and implement a SWPCP on Permittee construction projects, as required above.

4. The SWPCP shall include appropriate construction site BMPs selected from documents such as the California Storm Water BMP Handbook, the Caltrans Storm Water Quality Handbook, Ventura County Stormwater Quality Standard Sheet, EPA database and American Society of Civil Engineers (ASCE) database. In addition, Permittees shall ensure the following minimum requirements are met, to the maximum extent practicable, at construction sites regardless of size:

a) Sediments generated on the project site shall be retained using adequate structural drainage controls;

b) No construction-related materials, wastes, spills, or residues shall be discharged from the project site to streets, drainage facilities or adjacent properties by wind or runoff;

c) Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the project site;

d) Erosion from slopes and channels will be eliminated, by implementing BMPs, including, but not limited to, limiting of grading scheduled during the wet season, inspecting graded areas during rain events, planting and maintenance of vegetation on slopes, and covering erosion susceptible slopes.

5. The SWPCP must include the rationale used for selecting or rejecting BMPs. The project architect, or engineer of record, or authorized qualified designee, must sign a statement on the SWPCP to the effect:

"As the architect/engineer of record, I have selected appropriate BMPs to effectively minimize the negative impacts of this project's construction activities on storm water quality. The project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activity."

The landowner shall sign a statement to the effect:

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/or inaccurate information, failing to update the SWPCP to reflect current conditions, or failing to properly and/or adequately implement the SWPCP may result in revocation of grading and/or other permits or other sanctions provided by law."

The SWPCP certification shall be signed by the landowner as follows:

(1) For a corporation: by a responsible corporate officer which means (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of the construction activity if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

(2) For a partnership or sole proprietorship: by a general partner or the proprietor; or

(3) For a municipality or other public agency: by an elected official, a ranking management official (e.g.,

County Administrative Officer, City Manager, Director of Public Works, City Engineer, District Manager), or the manager of the construction activity if authority to sign SWPCPs has been assigned or delegated to the manager in accordance with established agency policy.

6. Permittees shall require proof of filing a Notice of Intent (NOI) for coverage under the State General Construction Activity Storm Water Permit and a copy of the SWPPP prior to issuing a grading permit for all projects requiring coverage under the state general permit. The prepared SWPPP may satisfy the requirement under D.2. (in-lieu of SWPCP).

   The Permittees shall require proof of NOI and a copy of the SWPPP at any time a transfer of ownership takes place for the entire development or portions of the common plan of development where construction activities are still on-going.

7. Permittees shall inspect medium and large construction sites with SWPCPs (or SWPPPs) for storm water quality requirements during routine inspections a minimum of once during the wet season. The SWPCP (or SWPPP) shall be reviewed for compliance to the maximum extent possible. For inspected sites that have not adequately implemented their SWPCP (or SWPPP), a follow-up inspection to ensure compliance will take place within 2 weeks. If compliance has not been attained, the Permittee will take additional administrative (or other mechanisms, as specified in the Municipal Code) steps to achieve compliance. If compliance has not been achieved, and the site is covered under the State General Construction Activity Storm Water Permit, the Permittees will enforce first their local ordinance requirements and if non-compliance continues the Regional Board shall be notified for further joint enforcement actions.

8. For small construction sites, the Permittees shall require the implementation of a minimum set of BMPs to prevent pollution and control storm water runoff discharges to the maximum extent practicable. The Permittees shall prioritize their inspection strategy and frequencies based on suitable criteria and submit it with the Annual Report subject to EO's approval.

9. Permittees shall continue an educational program to discuss storm water pollution prevention and controls at construction sites and

distribute educational materials targeted to the construction community during meetings, workshops, and as appropriate.

10. Permittees shall train employees in targeted positions (whose jobs or activities are engaged in construction activities including construction inspection staff) regarding the requirements of the storm water management program by *(six months from permit adoption)*, and annually thereafter.

PERFORMANCE STANDARDS AND REPORTING

- Medium and Large construction sites (including sites under General Construction Permit, adjacent to environmentally sensitive areas, and additional sites as designated by Permittees) inspected minimum once during each wet season.
- Annually, a minimum 20% of the inspected sites shall be subject to a thorough review of the SWPCP (and/or SWPPP) and BMP implementation status
- Small construction sites as proposed by Permittees and subject to EO's approval

Reporting and progress

- At the start of the permit a baseline will be established (total number of targeted sites in each category based on the Permittees permit tracking system)
- From that baseline number a scheduling will be developed: inspection to 100% of the baseline per year for Large and Medium sites, inspection of small sites as proposed by Permittees and approved by EO
- The Annual Report will reflect the baseline and the progress for that respective year (and for each additional year cumulative progress also)
- In the Annual Report it will be reported the number of enforcement actions and follow-up inspections of non-compliant sites and a cumulative progress report kept during subsequent years of the permit
- The Annual Report will reflect the number of SWPCP (and/or SWPPPs) reviewed and findings associated with this task (any enforcement, correction actions, etc...)
- Related training activities performed will be reported annually

Program for Public Agency Activities [RESERVED]

T. Program to Eliminate Illicit Connections and Discharges

Permittees shall eliminate all illicit connections and illicit discharges to the storm drain system, and shall document and report all such cases. To accomplish this, the Permittees shall revise their Program for Elimination of Illicit Connection and Illicit Discharge (IC/ID Program) within the SQMP by _____. This revision, which is subject to the approval of the Executive Officer, must contain the following minimum elements, including performance measures and schedules.

1. General Elements

a) Geographic Information System (GIS): Complete, by _____, a comprehensive GIS, that will allow the Lead Permittee to manage and track all non-storm water discharges into the storm drain system. Among other attributes, the comprehensive GIS shall be designed to show the entire storm drain system, to identify owners and operators for all segments of the storm drain system, and to precisely locate all permitted discharges.

b) Training: Complete, by _____, refresher training for all targeted employees who are responsible for identification, investigation, termination, cleanup, and reporting of illicit connections and discharges.

c) Documentation and Reporting: Document and report all illicit connections, illicit discharges, and hazardous substances that enter the storm drain, within _____.

2. Illicit Connection Elements

a) Baseline Screening: Permittees shall continue to screen the storm drain system for illicit connections during scheduled infrastructure maintenance. On an annual basis, Permittees shall report, to the Lead Permittee, on the location and length of open channels or closed storm drains that have been screened, and on the status of suspected, confirmed, and terminated illicit connections.

b) Priority Screening: In addition to the baseline screening that will occur during regularly scheduled maintenance, Permittees shall design and implement a proactive storm drain screening of priority areas. Priority areas shall be determined, by _____, by applying various factors, among which shall include: an analysis of all illicit connections discovered and reported since June 18, 1990 (under reporting requirements set forth in the two permits antecedent to this permit), with the purpose of identifying clusters or areas with illicit connection problems; and a review of documentation of storm drain connections made [in the six months following the 1994 Northridge Earthquake, in the year following the 1992 civil unrest, others?].

c) Investigation: Upon discovery through either baseline or priority screening, or upon receiving a report of a suspected illicit connection, Permittees shall initiate an investigation within ____ hours, to determine the source of the connection, the nature and volume of discharge through the connection, and the responsible party for the connection.

d) Termination: Upon confirmation of the illicit nature of the discharge, Permittees shall ensure termination of the discharge and connection within ____ days, using enforcement authority as needed.

3. Illicit Discharge Elements

a) Abatement and Cleanup: Respond, within ____ hours of discovery or a report of a suspected illicit discharge, with activities to abate, contain, and clean up all illicit discharges, including hazardous substances.

b) Investigation: As soon as practicable, during or immediately following containment and cleanup activities, determine the nature and volume of the discharge, source and cause, and responsible party, and take enforcement action as appropriate.

From: Xavier Swamikannu
To: Megan Fisher
Date: 3/19/01 3:10PM
Subject: Monitoring

>

Hi Megan:

Give a copy of the paper to Dan for official records.

USGS November 27, 2000 policy on use of TSS data raises significant questions about the validity of data that storm water programs have been collecting. The policy indicates that:
1.. Use of TSS data to determine concentration of suspended material in samples collected from open channels is inappropriate.
2.. Use of the TSS analytical method to determine concentrations of suspended material can result in unacceptably large errors and is fundamentally unreliable.
3.. TSS methods and equipment differ between laboratories
4.. Results of the TSS analytical method tend to produce data that are negatively biased by 25 to 34 % with respect to suspended sediments concentration analyses (method recommended by USGS) collected at the same time and can vary widely at different flows at a given site. The biased TSS data can result in errors in load computations of several orders of magnitude.
5.. There is no reliable, straightforward way to adjust TSS data to estimate suspended sediment without corresponding SSC data.
The basis for the policy appears to be a report "Comparability of Suspended-Sediment Concentration and Total Suspended Solids Data" WRIR 00-4191.

This policy and the report were apparently presented at the recent TMDL conference in St Louis.

Information on the USGS work and the report can be found at http://water.usgs.gov/osw/techniques/sediment.html . This will raise a lot of questions about the work that has been done in the monitoring of storm water runoff, TMDLs and BMP effectiveness.

I believe that storm water programs should be doing both the TSS and SSC methods and obtaining particle size distribution data - the latter if we can agree on some good protocols for sample handling and analytical methods.

USGS
science for a changing world

Comparability of Suspended-Sediment Concentration and Total Suspended Solids Data

By John R. Gray, G. Douglas Glysson, Lisa M. Turcios, and Gregory E. Schwarz
Water-Resources Investigations Report 00-4191

U.S. Department of the Interior
U.S. Geological Survey

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August 2000

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U.S. Department of the Interior
Bruce Babbitt, Secretary

U.S. Department of the Interior
Charles G. Groat, Director

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CONVERSION FACTORS

Multiply SI units	By	To obtain inch-pound units
	Length	
millimeter (mm)	0.03937	inch (in)
	Volume	
liter (L)	33.82	ounce fluid (fl. oz)
liter (L)	2.113	pint (pt)
liter (L)	1.057	quart (qt)
liter (L)	0.2642	gallon (gal)
	Flow	
cubic meter per second (m^3/s)	35.31	cubic foot per second (ft^3/s)
	Mass	
gram (g)	0.03527	ounce, avoirdupois (oz)
gram (g)	0.002205	ounce, avoirdupois (oz)
megagram (Mg)	1.102	ton, short
	Temperature	
degree Celsius (°C)	F = 1.8 x°C + 32	degree Fahrenheit (°F)
	Concentration (Mass/Volume)	
milligrams per liter (mg/L)	1.0	parts per million (ppm[1])
milligrams per liter (mg/L)	0.0000334	ounces per quart (oz/qt)

[1]This conversion is true for concentration values <8,000 mg/L. The equivalent value in mg/L for concentrations ≥8,000 ppm can be calculated from table 1, American Society of Testing Material (2000), or by using the following equation:

$$C_{mg/L} = C_{ppm}/(1-C_{ppm}(6.22 \times 10^{-7})$$

where:
$C_{mg/L}$ = sediment concentration, mg/L, and
C_{ppm} = sediment concentration, ppm

Comparability of Suspended-Sediment Concentration and Total Suspended Solids Data

By John R. Gray, G. Douglas Glysson, Lisa M. Turcios, and Gregory E. Schwarz

ABSTRACT

Two laboratory analytical methods — suspended-sediment concentration (SSC) and total suspended solids (TSS) — are predominantly used to quantify concentrations of suspended solid-phase material in surface waters of the United States. The analytical methods differ. SSC data are produced by measuring the dry weight of all the sediment from a known volume of a water-sediment mixture. TSS data are produced by several methods, most of which entail measuring the dry weight of sediment from a known volume of a subsample of the original. An evaluation of 3,235 paired SSC and TSS data, of which 860 SSC values include percentages of sand-size material, shows bias in the relation between SSC and TSS —SSC values tend to increase at a greater rate than their corresponding paired TSS values. As sand-size material in samples exceeds about a quarter of the sediment dry weight, SSC values tend to exceed their corresponding paired TSS values. TSS analyses of three sets of quality-control samples (35 samples) showed unexpectedly small sediment recoveries and relatively large variances in the TSS data. Two quality-control data sets (18 samples) that were analyzed for SSC showed both slightly deficient sediment recoveries, and variances that are characteristic of most other quality-control data compiled as part of the U.S. Geological Survey's National Sediment Laboratory Quality Assurance Program. The method for determining TSS, which was originally designed for analyses of wastewater samples, is shown to be fundamentally unreliable for the analysis of natural-water samples. In contrast, the method for determining SSC produces relatively reliable results for samples of natural water, regardless of the amount or percentage of sand-size material in the samples. SSC and TSS data collected from natural water are not comparable and should not be used interchangeably. The accuracy and comparability of suspended solid-phase concentrations of the Nation's natural waters would be greatly enhanced if all these data were produced by the SSC analytical method.

INTRODUCTION

The importance of fluvial sediment to the quality of aquatic and riparian systems is well established. The U.S. Environmental Protection Agency (1998) identifies sediment as the single most widespread cause of impairment of the Nation's rivers and streams, lakes, reservoirs, ponds, and estuaries.

Reliable, quality-assured sediment and ancillary data are the underpinnings for assessment and remediation of sediment-impaired waters. The U.S. Geological Survey (USGS) has protocols for the collection of sediment data (Edwards and Glysson, 1999) and for laboratory analysis of suspended-sediment samples (Guy, 1969; Matthes and others, 1991; Knott and others, 1992 and 1993; U.S. Geological Survey, 1998 and 1999a). Most of the laboratory analytical methods were adapted or developed by the Federal Interagency Sedimentation Project (1941), approved by the Technical Committee (Glysson and Gray, 1997), and used by most Federal agencies that analyze fluvial-sediment data.

Data collected, processed, and analyzed using consistent protocols are comparable in time and space. Conversely, data obtained using different protocols may not be comparable. The focus of this study is the comparability of suspended-sediment concentration (SSC) and total suspended solids (TSS) data. The terms SSC and TSS are often used interchangeably in the literature to describe the concentration of solid-phase material suspended in a water-sediment mixture, usually expressed in milligrams per liter (mg/L) (Gregory Granato, U.S. Geological Survey, oral commun., 1999; James, 1999). However, given that all other factors are held constant (such as particle density and shape), the analytical procedures for SSC and TSS differ and may produce considerably different results, particularly when sand-size material composes a substantial percentage of the sediment in the sample.

This report compares the SSC and TSS analytical methods and derivative data, and demonstrates which of the data types is the more accurate and reliable. The evaluation is based on historical SSC and TSS data collected and analyzed by the USGS and selected cooperators.

The authors appreciate the assistance of: Stephen S. Anthony, Donna L. Belval, James G. Brown, Ronald D. Evaldi, Herbert S. Garn, John D. Gordon, Stephen D. Preston, Daniel J. Sullivan, Richard J. Wagner and Henry Zajd, Jr. for providing the data used in this report. The formal reviews of Herbert S. Garn, Mary Ellen Ley, and Henry Zajd, Jr., were most appreciated, as were informal reviews by Anne Hoos and Harvey Jobson. Kenneth Pearsall's insights and research significantly enhanced the report. Patricia Greene's and Roger K. Chang's support for developing the tables and figures was invaluable.

Table 1. State in which natural-water samples were collected, collecting organization, collection methods, and devices for obtaining subsamples for suspended-sediment concentration (parameter code 80154) and total suspended solids (parameter code 00530) analyses
[SSC, suspended-sediment concentration; TSS, total suspended solids; USGS, U.S. Geological Survey]

State	Sample Collecting Organization		Sample Collection Method		Subsampling Device	
	SSC (80154)	TSS (00530)	SSC (80154)	TSS (00530)	SSC (80154)	TSS (00530)
Arizona[a]	USGS	USGS	USGS, 1999[i]	USGS, 1999[i]	Churn Splitter	Churn Splitter
Hawaii[b]	USGS	USGS	Automatic Sampler	Automatic Sampler	None	Churn Splitter
Illinois[c]	USGS	USGS	USGS, 1999[i]; Open Bottle	USGS, 1999[i]	Churn Splitter	Churn Splitter
Kentucky[d]	USGS	USGS	USGS	Open Bottle	None	None
Maryland[e]	USGS	USGS	Open Bottle USGS, 1999[i]; Automatic Sampler	USGS, 1999[i]; Automatic Sampler	Churn Splitter	Churn Splitter
Virginia[f]	USGS and Cooperator	USGS and Cooperator	USGS, 1999[i]	USGS, 1999[i]	None	Churn Splitter
Washington[g]	USGS	USGS	USGS, 1999[i]	USGS, 1999[i]	None	Churn Splitter
Wisconsin[h]	USGS	Cooperator	USGS, 1999[i]	Open Bottle	Cone Splitter	Cone Splitter

[a] James G. Brown, U.S. Geological Survey, written commun. (1999).
[b] Stephen S. Anthony, U.S. Geological Survey, written commun. (1999).
[c] Daniel J. Sullivan, U.S. Geological Survey, written commun. (1999).
[d] Ronald D. Evaldi, U.S. Geological Survey, written commun. (1999).
[e] Stephen D. Preston, U.S. Geological Survey, written commun. (1999).
[f] Donna L. Belval, U.S. Geological Survey, written commun. (1999).
[g] Richard J. Wagner, U.S. Geological Survey, written commun. (1999).
[h] Herbert S. Garn, U.S. Geological Survey, written commun. (1999).
[i] See Edwards and Glysson (1999).

FIELD TECHNIQUES AND LABORATORY METHODS

The paired SSC and TSS results used in this evaluation were derived from analyses of natural-water samples collected by the USGS and selected cooperators (table 1). Analyses of all SSC data from natural water were made by USGS sediment laboratories, and analyses of the TSS data were made by USGS and cooperating laboratories. Additionally, 53 quality-control samples were prepared by the USGS and analyzed by a laboratory that provides data to the USGS.

Field Techniques

The large majority of water samples were collected using either the equal-width-increment or the equal-discharge-increment method to obtain a composite sample that is representative of the discharge-weighted SSC (Edwards and Glysson, 1999). Some samples, including those obtained by at least one cooperating agency, were collected by dipping an open bottle to obtain samples for subsequent TSS analysis. Some of the paired SSC and TSS samples were collected in-stream sequentially and submitted to laboratories for analysis as whole samples. The remaining samples were split into subsamples by using a churn splitter or cone splitter (Ward and Haar, 1990; Capel and Larson, 1996; Capel and others, 1995).

Tests performed by the USGS demonstrate that the churn splitter and cone splitter can provide unbiased and acceptably precise (generally within 10 percent of the known value) SSC values as large as about 1,000 mg/L when the mean diameter of sediment particles is less than about 0.25 mm. At SSC values of 10,000 mg/L or more, the bias and precision of SSC values in churn splitter subsamples are considered unacceptable (U.S. Geological Survey, 1997; Wilde and others, 1999).

Cone splitters produce subsamples with SSC values that are adequately representative of the original sample at 10,000 mg/L, but not at 100,000 mg/L. The accuracy of the cone splitter for SSC values between 10,000 mg/L and 100,000 mg/L is unknown and is considered unacceptable at concentrations larger than 100,000 mg/L (U.S. Geological Survey, 1997; Wilde and others, 1999).

Subsampling will typically increase the variance and (or) create bias in the concentration and size distribution of solid-phase material in a subsample. Significant differences in the amount of solid-phase material in some paired samples may have occurred as a result of non-representative splitting of the original samples, or by collecting consecutive in-stream samples under conditions of rapidly varying SSC. Similarly, because the data were obtained by field personnel in eight States as part of unrelated studies, significant differences

may have resulted because of differences in data-collection techniques. However, the probability of significant bias resulting from consistently selecting samples with larger concentrations of sediment for analyses by one of the methods would be small based on the large number of paired data used in the analysis. There is no evidence indicating that methods used for collecting, processing, or selecting subsamples for subsequent analysis introduced bias in the relations between SSC and TSS identified in this evaluation.

Laboratory Methods

Two standard methods are widely cited in the United States for determining the total amount of suspended material in a water sample. These are:

1. Method D 3977-97, "Standard Test Method for Determining Sediment Concentration in Water Samples" of the American Society for Testing and Materials (American Society for Testing and Materials, 2000), and
2. Method 2540 D, "Total Suspended Solids Dried at 103°–105° C" (American Public Health Association, American Water Works Association, and Water Pollution Control Federation, 1995).

The differences in these analytical methods, and some variations used to produce TSS data are described below.

Suspended-Sediment Concentration Analytical Method. ASTM Standard Test Method D 3977-97 lists three methods that result in a determination of SSC values in water and wastewater samples:

1. Test Method A – Evaporation: The evaporation method may only be used on sediment that settles within the allotted storage time, which can range from a few days to several months. If the dissolved-solids concentration exceeds about 10 percent of the SSC value, an appropriate correction factor must be applied to the SSC value. The precision and bias of Method A are shown as follows:

[mg/L, milligrams per liter]

Concentration Added, (mg/L)	Concentration Recovered, (mg/L)	Standard Deviation of Test Method (mg/L)	Standard Deviation of Single Operator (mg/L)	Bias, percent
10	9.4	2.5	2.3	-6
1,000	976	36.8	15.9	-2.4
100,000	100,294	532	360	0.3

2. Test Method B- Filtration: The filtration method is used only on samples with concentrations of sand-size material (diameters greater than 0.062 mm) less than about 10,000 mg/L and concentrations of clay-size material of about 200 mg/L. No dissolved-solids correction is needed. The precision and bias of Method B are shown as follows:

[mg/L, milligrams per liter]

Concentration Added, (mg/L)	Concentration Recovered, (mg/L)	Standard Deviation of Test Method (mg/L)	Standard Deviation of Single Operator (mg/L)	Bias, percent
10	8	2.6	2	-20
100	91	5.3	5.1	-9
1,000	961	20.4	14.1	-3.9

3. Test Method C - Wet-sieving filtration: The wet-sieve-filtration method also yields a SSC value, but the method is not as direct as Methods A and B. Method C is used if the percentage of material larger than sand-size particles is desired. The method yields a concentration for the total sample, a concentration of the sand-size particles, and a concentration for the silt- and clay-size particles. A dissolved-solids correction may be needed, depending on the type of analysis done on the fine fraction of the samples and the dissolved-solids concentration of the sample. The precision and bias of Method C are shown as follows:

[mm, millimeters; mg/L, milligrams per liter]

Mixture Number	Sieve Diameter (mm)	Concentration Added (mg/L)	Concentration Recovered (mg/L)	Standard Deviation of Test Method (mg/L)	Standard Deviation of Single Operator (mg/L)	Bias, percent
1	>0.062	1	3.4	2.8	2.4	240
1	<0.062	10	8.7	4.3	2.9	-13
2	>0.062	9	5	5.9	1.9	-44
2	<0.062	91	79	15.2	11	-13
3	>0.062	91	107	12.3	5.9	18
3	<0.062	909	832	87.2	61	-8

These three methods are virtually the same as those used by USGS sediment laboratories and described by Guy (1969). Only the Whatman grade 934AH, 24-mm-diameter filter is used for purposes of standardization. Each method includes retaining, drying at 103°C ±2°C, and weighing all of the sediment in a known mass of a water-sediment mixture (U.S. Geological Survey, 1999a).

Total Suspended Solids Analytical Method. According to the American Public Health Association, American Water Works Association, and Water Pollution Control Federation (1995), the TSS analytical method uses a predetermined volume from the original water sample obtained while the sample is being mixed with a magnetic stirrer. An aliquot of the sample — usually 0.1 L, but a smaller volume if more than 200 mg of residue may collect on the filter — is withdrawn by pipette. The aliquot is passed through a filter, the diameter of which usually ranges from 22 to 125 mm. The filter may be a Whatman grade 934AH, Gelman type A/E, Millipore type AP40; E-D Scientific Specialties grade 161, or another product that gives demonstrably equivalent results. After filtering, the filter and contents are removed and dried at 103° to 105° C, and weighed. No dissolved-solids correction is required. The percentages of sand-size and finer material cannot be determined using the TSS method.

The American Public Health Association, American Water Works Association, and Water Pollution Control Federation (1995) describe the precision for this method as follows: "The standard deviation was 5.2 mg/L (coefficient of variation 33 percent) at 15 mg/L, 24 mg/L (10 percent) at 242 mg/L, and 13 mg/L (0.76 percent) at 1,707 mg/L in studies by two analysts of four sets of 10 determinations each. Single-laboratory analyses of 50 samples of water and wastewater were made with a standard deviation of differences of

2.8 mg/L." The standard provides no indication of the size of particles used in the testing for the method.

In practice, TSS data are produced by a number of variations to the processing methods described in the American Public Health Association, American Water Works Association, and Water Pollution Control Federation (1995). For example:

- For the collection of TSS samples as part of the Chesapeake Bay Program, field staff pump water from a specified depth into a plastic gallon container. The container is vigorously shaken, and 0.2 – 1.0 L of the water-sediment mixture is poured for field filtering and subsequent analysis. (Mary Ley, Interstate Commission on the Potomac River Basin, the State of Maryland and the Commonwealth of Virginia, written commun., 2000).
- One State government laboratory produces TSS data by vigorously shaking the sample and pouring it into a crucible for subsequent analysis. All of the sample is poured into the crucible unless "there is a lot of suspended material," in which case only part of the sample is poured (Lori Sprague, U.S. Geological Survey, written commun., 1999).
- Another laboratory analyzed quality-control samples by using Method 2540D of the American Public Health Association, American Water Works Association, and Water Pollution Control Federation (1995), with the following variation: The sample is shaken vigorously and a third of the desired subsample volume is decanted to a secondary vessel. This process is repeated twice to obtain a single subsample for subsequent filtration, drying and weighing.

The reduction in TSS data comparability is not limited to lack of consistency in processing and analytical methods. According to James (1999), there is generally no agreed upon definition of TSS in regard to storm-water runoff, in part because the settleable part of TSS is not reported in most storm-water studies.

The problem extends to nomenclature. The terms "SSC" and "TSS", or variations thereof, are sometimes attributed to an incorrect data type. For example, a proposed Total Maximum Daily Load for sediment in Stekoa Creek, Georgia (U.S. Environmental Protection Agency, Region 4, written commun., 2000) is based on regional TSS data, which are compiled from U.S. Geological Survey records; the TSS data referred to are actually SSC data. Buchanan and Schoellhamer (1998) refer to "suspended-solids concentration data" for San Francisco Bay. Those data would more appropriately be referred to as SSC, because the total water-sediment mass and all sediment were measured in the analysis (Alan Mlodnosky, USGS, oral commun., 1999).

Part of the problem may be attributable to the origin of the TSS method and subsequent changes in the types of water for which it is recommended for use. Information available from the American Public Health Association and American Water Works Association (1946) makes it clear that the Suspended Solids Method was intended for use for wastewater effluents (Kenneth Pearsall, U.S. Geological Survey, written commun., 2000). This is more or less consistent with the Total Suspended Matter Method, which was "intended for use with wastewaters, effluents, and polluted waters," as listed in the American Public Health Association, American Water Works Association, and Water Pollution Control Federation (1971). A fundamental change took place in 1976, when the Total Suspended Matter Method was deemed suitable for "residue in potable, surface, and saline waters, as well as domestic and industrial wastewaters in the range up to 20,000 mg/L" by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation (1976). The Suspended Solids and Total Suspended Matter Methods described above are predecessors of the "Total Suspended Solids Dried at 103°-105°C" Method, which first appeared in 1985 by that title in the American Public Health Association, American Water Works Association, and Water Pollution Control Federation (1985).

In summary, the evidence indicates that the TSS method was originally designed for wastewater analyses, presumably on samples collected after a settling step at a wastewater treatment facility (hence the term "suspended" in TSS). The American Public Health Association, American Water Works Association, and Water Pollution Control Federation (1976) expanded the TSS Method's applicability in 1976 to include natural water.

Differences Between the SSC and TSS Analytical Methods. The fundamental difference between the SSC and TSS analytical methods stems from preparation of the sample for subsequent filtering, drying, and weighing. A TSS analysis normally entails withdrawal of an aliquot of the original sample for subsequent analysis, although as previously noted, there is evidence of inconsistencies in methods used in the sample preparation phase of the TSS analyses. The SSC analytical method measures all sediment and the mass of the entire water-sediment mixture. Additionally, the percentage of sand-size and finer material can be determined as part of the SSC method, but not as part of the TSS method.

If a sample contains a substantial percentage of sand-size material, then stirring, shaking, or otherwise agitating the sample before obtaining a subsample will rarely produce an aliquot representative of the SSC and particle-size distribution of the original sample. This is a by-product of the rapid settling properties of sand-size material, compared to those for silt- and clay-size material, given virtually uniform densities and shapes as described by Stokes' Law. Aliquots obtained by pipette might be withdrawn from the lower part of the sample where the sand concentration tends to be enriched immediately after agitation, or from a higher part of the sample where the sand concentration is rapidly depleted.

The physical characteristics of a pipette used to withdraw an aliquot, or subsample, can introduce additional errors in subsequent analytical results. The American Public Health Association, American Water Works Association, and Water Pollution Control Federation (1995) specifies use of "wide-bore pipettes" to withdraw aliquots. The tip opening of those recommended for use is about 3 mm in diameter (Kimble-Contes Inc., accessed May 1, 2000). By definition, the upper limit of sand-size material, which is expressed as the median diameter, is 2 mm (Folk, 1980). A natural sediment particle's long axis is almost always larger than its me-

dian axis and can be substantially larger. Hence, a single coarse-grained sand particle or multiple sand-size particles, particularly when present in large concentrations, may clog a 3-mm tip pipette under suction.

If the aforementioned lack of consistency in the TSS analytical procedure extends to variability in diameters of pipette tips used to withdraw TSS aliquots, the size of particles being excluded from the subsample could vary with the type of pipette used. Hence, use of a pipette may cause concentration bias when subsampling if sand-size material is present in the sample.

Based on Stokes' Law, subsamples obtained by pouring sand-rich water-sediment mixtures should be deficient in sand-size material. Because the fine material concentration will not normally be altered by the removal of an aliquot, the differences between the two methods will tend to be more pronounced as the percentage of sand-size material in the sample increases.

Samples collected sequentially in-stream may have different concentrations and size characteristics of solid-phase material. This may be due to natural variations in the amounts and composition of solid-phase material in transport, and to variance and (or) bias that is introduced by sampling procedures. Likewise, a subsample may contain an amount and size distribution of sediment atypical to that of the original. However, any differences in SSC and size-distribution data from paired samples resulting from in-stream variations or sampling procedures would likely occur randomly among the 3,235 paired analyses used in this evaluation.

DESCRIPTION OF DATA USED IN THE EVALUATION

Results of analyses of natural-water samples and of quality-control samples prepared by the USGS were used for this evaluation. Natural-water samples for determination of SSC (parameter code 80154) were collected and analyzed by the USGS (table 1). Natural-water samples for determination of TSS, (parameter code 00530) were collected by the USGS and cooperating agencies, and analyzed by the USGS and cooperating laboratories. A total of 3,235 pairs of SSC and TSS data for natural water were obtained from the files of USGS District offices.

The paired SSC and TSS data were collected at 65 sampling sites in Arizona, Hawaii, Illinois, Kentucky, Maryland, Virginia, Washington, and Wisconsin. All but the 12 sampling sites in Kentucky were at USGS streamflow-gaging stations. The percentage of sand-size material was available for 860, or about 27 percent, of the SSC samples. The SSC and TSS natural-water data used in this evaluation were augmented by analytical results of 53 quality-control samples prepared by the USGS National Sediment Laboratory Quality Assurance Program (Gordon and others, 2000, U.S. Geological Survey, 1998; 1999a; 1999b; 2000b).

Arizona. A total of 122 SSC and TSS sample pairs were collected at a USGS streamflow-gaging station on Pinal Creek at Inspiration Dam near Globe (station number 09498400) in central Arizona from 1982-98. The samples were collected about monthly or bimonthly using techniques described by Edwards and Glysson (1999). A churn splitter was used to obtain subsamples of the water-sediment mixture. The USGS sediment laboratory in Iowa City, Iowa, analyzed the subsamples for SSC and TSS (James G. Brown, U.S. Geological Survey, written commun., 1999).

Hawaii. According to Hill (1996), 13 SSC and TSS sample pairs were collected at three streamflow-gaging stations in the Kamooalii drainage basin, Oahu, Hawaii, from 1985-89, as a component of a large-scale highway-construction study. The SSC samples were collected by a US PS-69 automatic pumping sampler. The TSS samples were collected by a Manning automatic pumping sampler. A churn splitter was used to obtain subsamples for TSS analyses. The SSC samples were analyzed by the USGS sediment laboratory in Oahu. The TSS samples were analyzed by the USGS National Water Quality Laboratory in Denver, Colorado (Stephen S. Anthony, U.S. Geological Survey, written commun., 1999).

Illinois. A total of 223 SSC and TSS sample pairs were collected at 8 USGS streamflow-gaging stations in the upper Illinois River Basin from 1988-90 (Sullivan and Blanchard, 1994). Samples were collected according to techniques described by Edwards and Glysson (1999). A churn splitter was used to obtain subsamples for SSC and TSS analyses. SSC samples were analyzed at the USGS sediment laboratory in Iowa City, Iowa, using the evaporation method. TSS samples were analyzed by an Illinois State laboratory using the nonfilterable residue, gravimetric method (Daniel Sullivan, U.S. Geological Survey, written commun., 1999).

Kentucky. A total of 95 SSC and TSS sample pairs were collected at 12 sampling locations in the Ohio River Basin in May 1999. SSC and TSS samples were collected at each site for one day over several hours at about 1-hour intervals. Samples were collected using an open-bottle sampler because of the low stream velocities. No splitting devices were used to obtain subsamples. The USGS sediment laboratory in Louisville, Kentucky, analyzed the SSC samples. A contract laboratory performed the TSS analyses (Ronald Evaldi, U.S. Geological Survey, written commun., 1999).

Maryland. A total of 1,561 SSC and TSS sample pairs were collected at 6 streamflow-gaging stations in the Patuxent River Basin, Maryland, as part of the USGS Patuxent Nonpoint Source study during the years 1985-98 (Preston and Summers, 1997). The sampling frequency was monthly, with additional samples collected during periods of storm runoff. The monthly base-flow samples were collected using the equal-width-increment method (Edwards and Glysson, 1999), and the storm-runoff samples were collected using an automatic sampler. A churn splitter was used for both monthly and storm samples of both SSC and TSS. The SSC samples were analyzed at USGS sediment laboratories in Lemoyne, Pennsylvania, and Louisville, Kentucky. The TSS samples were analyzed using a pipette and filtration method by a Maryland State laboratory (Stephen D. Preston, U.S. Geological Survey, written commun., 1999).

Virginia. A total of 188 SSC and TSS sample pairs were collected at 7 streamflow-gaging stations in Virginia during the years 1975-95. Paired SSC and TSS samples were collected every other month by the USGS except during some low-flow periods as part of the River Input Monitoring Program (U.S. Geological Survey, 2000a). Techniques described by Edwards and Glysson (1999) were used to collect all samples. A churn splitter was used to obtain subsamples for TSS analyses. The USGS collected most of the samples, except during some low-flow periods when the Virginia Department of Environmental Quality collected the samples. SSC analyses were performed by USGS sediment laboratories. A Virginia State laboratory performed the TSS analyses (Donna L. Belval, U.S. Geological Survey, written commun., 1999).

Washington. A total of 817 SSC and TSS sample pairs were collected at 25 streamflow-gaging stations in Washington during the years 1973-98, as part of various projects. Techniques described by Edwards and Glysson (1999) were used to collect all SSC and TSS samples. A churn splitter was used to obtain subsamples for TSS analyses. The SSC and TSS samples were analyzed at a USGS sediment laboratory in Tacoma, Washington, through September 1982. Thereafter, samples were analyzed at the USGS Cascades Volcano Observatory Sediment Laboratory (Richard J. Wagner, U.S. Geological Survey, written commun., 1999).

Wisconsin. A total of 216 SSC and TSS sample pairs were collected at 3 streamflow-gaging stations on streams in the Lake Michigan watershed, Wisconsin, as part of an evaluation of the differences in results of water-quality monitoring caused by differences in sample-collection methods (Kammerer and others, 1998). Low-flow samples were collected in August and October 1993, and high-flow samples were collected in April-July 1994. The SSC samples were collected using techniques described by Edwards and Glysson (1999). The TSS samples were collected concurrently with the SSC samples by the Wisconsin Department of Natural Resources using an open bottle. Subsamples for SSC and TSS analyses were obtained using a cone splitter. SSC samples were analyzed by the USGS sediment laboratory in Iowa City, Iowa. TSS samples were analyzed by a Wisconsin State laboratory (Herbert S. Garn, U.S. Geological Survey, written commun., 1999).

Quality-Control Data. The SSC and TSS natural-water data used in this evaluation were augmented by analytical results of quality-control samples from a cooperating laboratory. Known amounts of water and sediment were used to constitute quality-control samples as part of the USGS National Sediment Laboratory Quality Assurance Program. The National Sediment Laboratory Quality Assurance Program is designed as an interlaboratory-comparison evaluation to provide a measure of bias and variance of suspended-sediment data analyzed by laboratories operated or used by the USGS. The quality-control samples received by the participating laboratories were identified as such.

The quality-control samples were submitted in five batches to a cooperating laboratory during 1997-99. Of the quality-control samples, the first 35 were shipped as batch numbers 1997-1, 1997-2, and 1998-1 and were analyzed for TSS. Eighteen quality-control samples were shipped as batch numbers 1998-2 and 1999-1 and analyzed for SSC using the evaporation method (Kenneth Pearsall, U.S. Geological Survey, 1999, oral commun.).

COMPARABILITY OF SUSPENDED-SEDIMENT CONCENTRATION AND TOTAL SUSPENDED SOLIDS DATA

Natural-Water Data

The relation between SSC and TSS data was evaluated by comparing all available paired SSC and TSS natural-water data, and subsets of those data for each State. The number of paired SSC and TSS values for selected SSC concentration ranges with and without particle-size data are shown in figure 1.

Of the 3,235 natural-water SSC samples used in this study,

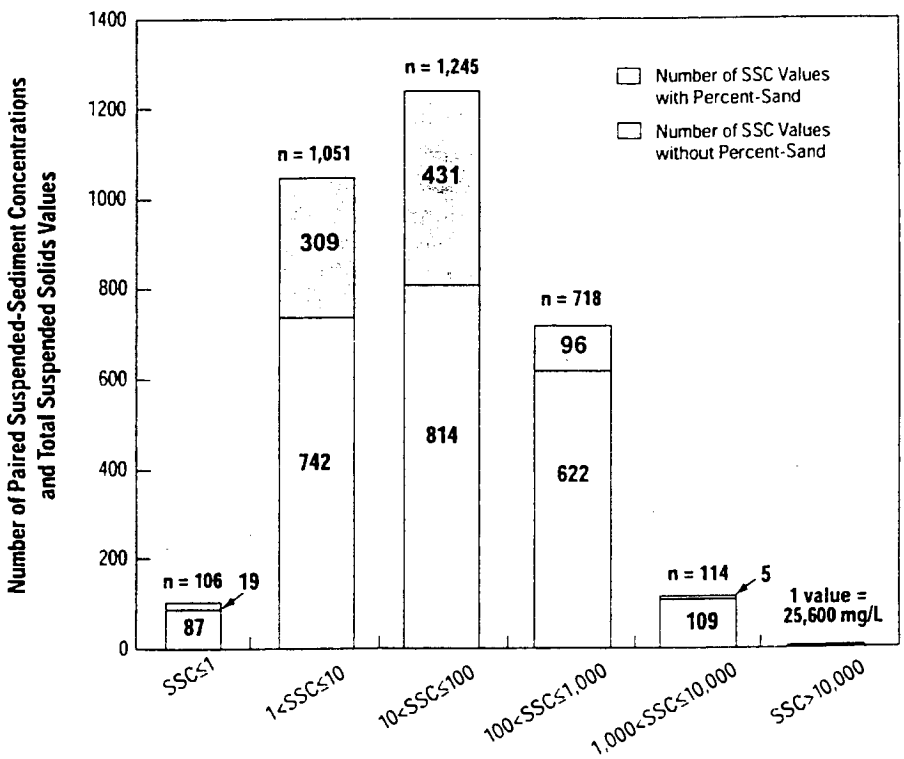

Figure 1. Number of paired suspended-sediment concentration (SSC) values and total suspended solids (TSS) values of the 3,235 data pairs for selected suspended-sediment concentration ranges, in milligrams per liter.

Table 2. Statistical characteristics of paired suspended-sediment concentration (SSC) and total suspended solids (TSS) data for each of eight States, and for the combined data from all States
[mg/L, milligrams per liter; >, greater than]

	SSC Values		SSC Minus TSS				
Source of SSC and TSS Paired Data	Number of values	3rd Quartile mg/L	Number of values >0 mg/L	Percentage of values >0 mg/L for all paired data	Number of values when SSC value is > 3rd Quartile value	Number of values >0 mg/L when SSC value is > 3rd Quartile value	Percentage of values >0 mg/L when SSC value is > 3rd Quartile value
Arizona	122	153.25	93	76%	31	30	97%
Hawaii	13	353.0	13	100%	3	3	100%
Illinois	223	48.5	111	50%	56	34	61%
Kentucky	95	10.2	28	29%	24	9	38%
Maryland	1,561	324.0	1,071	69%	390	328	84%
Virginia	188	16.0	105	56%	44	40	91%
Washington	817	30.0	518	63%	203	179	88%
Wisconsin	216	80.25	184	85%	54	54	100%
All Paired Data[1]	3,235	108.0	2,123	66%	809	672	83%

[1] Based on statistics using all 3,235 paired data; some values vary slightly from those calculated using summary statistics from the eight States.

74 percent had values less than or equal to 100 mg/L; only one value (25,600 mg/L) exceeded 10,000 mg/L (figure 1).

Statistical characteristics of SSC and TSS paired data for each State and for all paired data are given in table 2. Sixty-six percent of all TSS values are smaller than their corresponding paired SSC values. Eighty-three percent of all TSS values are smaller than their paired SSC value when SSC values exceed the 3rd quartile value. For each State except Kentucky (38 percent for 24 paired samples), 61 to 100 percent of the TSS values are smaller than their paired SSC value when SSC values exceed the 3rd quartile value. To summarize, SSC values tend to exceed their corresponding paired TSS values. This tendency becomes stronger at larger values of SSC.

Relations between all 3,235 paired TSS and SSC measurements are shown in figures 2 and 3. According to Glysson and others (2000), there is no simple, straightforward way to adjust TSS data to estimate SSC if paired samples are not available. Relations identified herein are not recommended for use in adjusting TSS data unless supported by additional research.

The data shown in figure 2 are plotted without transformation and include the two ordinary least squares regression lines obtained by regressing TSS on SSC (the lower line) and SSC on TSS (the upper line). Because of measurement errors associated with the collection processing, and analysis of the data, neither line can be interpreted as an unbiased estimate of the true relation

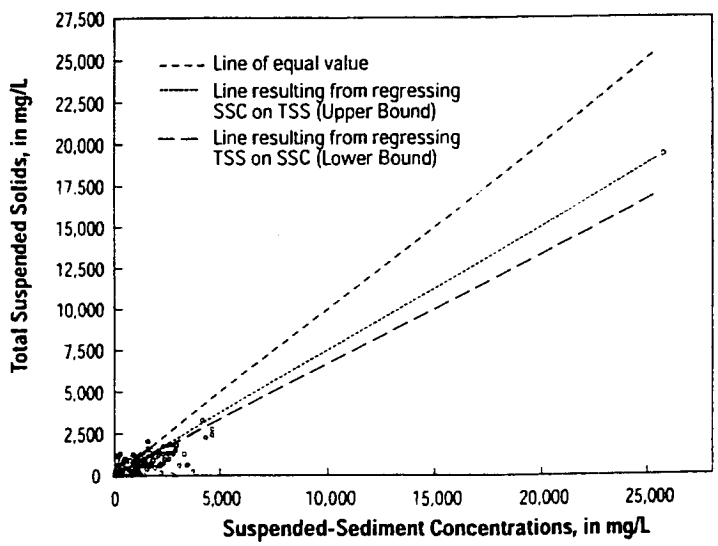

Figure 2. Relation between untransformed values of suspended-sediment concentration and total suspended solids for 3,235 data points.

between the two measurement methods. In fact, the existence of measurement error implies the system of equations describing the two measurements is insufficiently identified, making estimation of an unbiased relation impossible without additional information on the variance of the measurement error for at least one of the measurements (Klepper and Leamer, 1984). However, the two least squares regression lines can be used to bound the true slope and intercept coefficients (Frisch, 1934). In the case of TSS and SSC, the least squares intercepts are very small relative to the range of the data. Consequently, the two regression lines effectively form consistent upper and lower bounds on the true relation between TSS and SSC. These bounds imply that TSS is biased downward relative to SSC by a proportionate amount of 25 to 34 percent. Given the large skew apparent in the data, this finding is tentative and requires confirmation using a statistical or functional transformation yielding homoscedastic residuals.

The relation between SSC and TSS for all 3,235 pairs of transformed data using the base-10 logarithm and the line of equal value are shown in figure 3; the relations for each State and lines of equal value are shown in figure 4. Trends in the scattergrams plotted for all data compared to those with data that were segregated by State show some similarities, including a tendency for the data to plot to the right of the line of equal value, particularly at larger values of SSC.

As described previously, at least two factors associated with the TSS analysis can result in subsamples obtained by pipette or by pouring that are deficient in sand-size material. Rapidly falling sand-size material can be difficult to withdraw representatively, particularly if pipette subsamples are obtained from near the surface and (or) if the subsample is not withdrawn immediately after mixing. Also, coarser sand particles may plug the pipette intake, precluding withdrawal of a representative mixture. Subsamples obtained by pouring are also unlikely to contain representative amounts of sand-size material. In contrast, the amount or percentage of sand-size material in a SSC sample has no effect in bias because all sediment in the original sample is used in the SSC analysis.

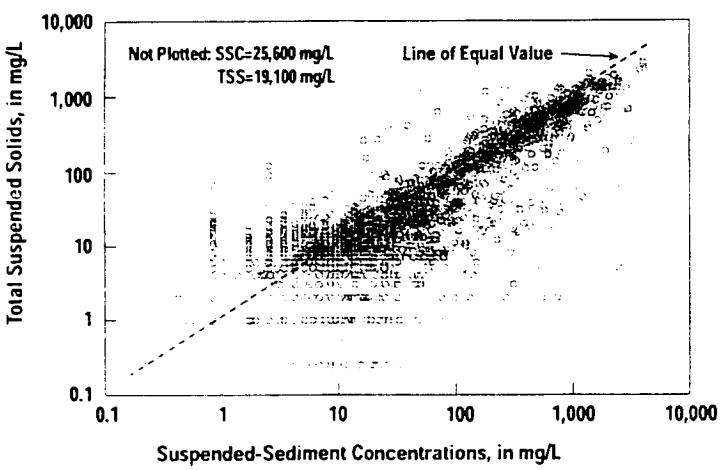

Figure 3. Relation between the base-10 logarithms of suspended-sediment concentration (SSC) and total suspended solids (TSS) for 3,235 data pairs in the scattergrams plotted. All SSC and TSS values less than 0.25 mg/L were set equal to 0.25 mg/L to enable plotting the data on logarithmic coordinates.

The relation between sand-size material and TSS bias was examined using the 860 paired SSC and TSS values for which the amounts of material coarser and finer than 0.062 mm in the SSC sample are known. Percent sand-size material, percent finer material, and the total mass of sand-size material were included in the analysis. All but one of the paired data associated with particle sizes are for streams in Illinois, Virginia, and Washington.

The relation between percent sand-size material associated with the SSC sample, and the SSC minus TSS remainder is shown in figure 5. No bias is apparent when sand-size material composes less than about a quarter of the sample's sediment mass. Above about a third sand-size material, the large majority of the SSC values exceed their paired TSS values. The increase in bias at larger SSC values as percent sand-size values increase is consistent with the observation that splitting original samples that contain a substantial percentage of sand-size material will rarely produce subsamples with a SSC or particle-size distribution similar to those of the original.

Splitting samples that contain small percentages of sand-size material are more likely to produce subsamples with concentrations and particle-size distributions similar to the original. The relation between TSS and the concentration of material finer than 0.062 mm for 860 of the paired SSC and TSS data with associated particle-size distribution data is shown in figure 6. The concentration of fine material was calculated as follows:

$$C_{<0.062mm} = SSC\,[1 - (Percent_{\geq 0.062mm}/100)]$$

$C_{<0.062mm}$ is the concentration of material finer than 0.062 mm in diameter,

SSC is suspended-sediment concentration, and

$Percent_{\geq 0.062mm}$ is percent sand-size material associated with the SSC value.

At TSS values that exceed about 5 mg/L of fine material, the SSC and TSS data are more or less evenly distributed around the line of equal value (figure 6). This suggests that the TSS method can provide relatively unbiased results when the large majority of material in a sample is finer than 0.062 mm.

The importance of bias in the relation between SSC and TSS characterized in figure 3 can be magnified when TSS data are used to compute sediment discharges. Sediment discharges increase when the product of water discharge and SSC increases (Porterfield, 1972). Additionally, the mobility of coarse material tends to increase with larger flow velocities. Because of the strong tendency for SSC to exceed TSS at larger values of SSC (see figures 3 and 4), calculating discharges of TSS will usually result in underestimates of

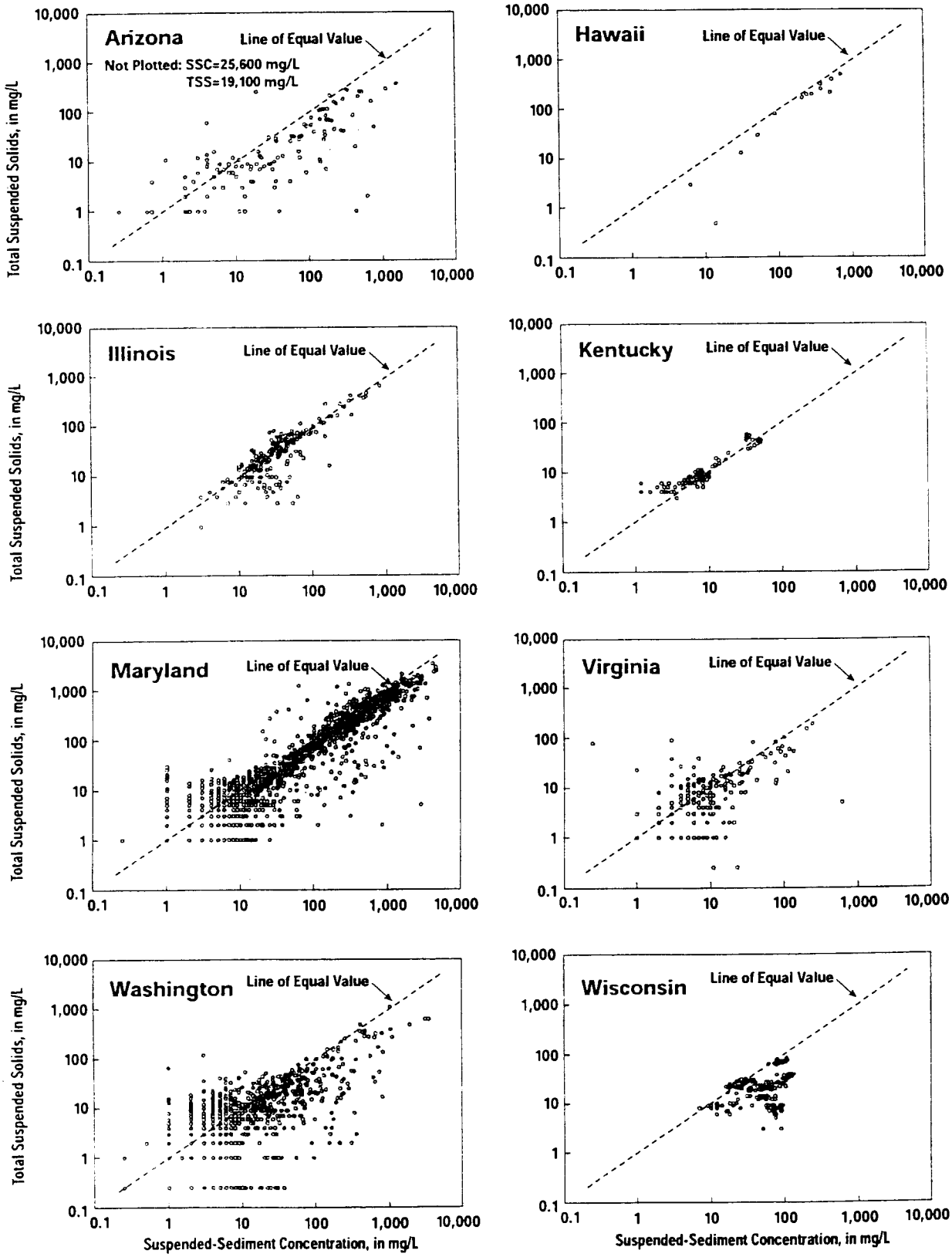

Figure 4. Relation between the base-10 logarithms of suspended-sediment concentration (SSC) and total suspended solids (TSS) for the data pairs from each State used in the analysis. All SSC and TSS values less than 0.25 mg/L were set equal to 0.25 mg/L to enable plotting the data on logarithmic coordinates.

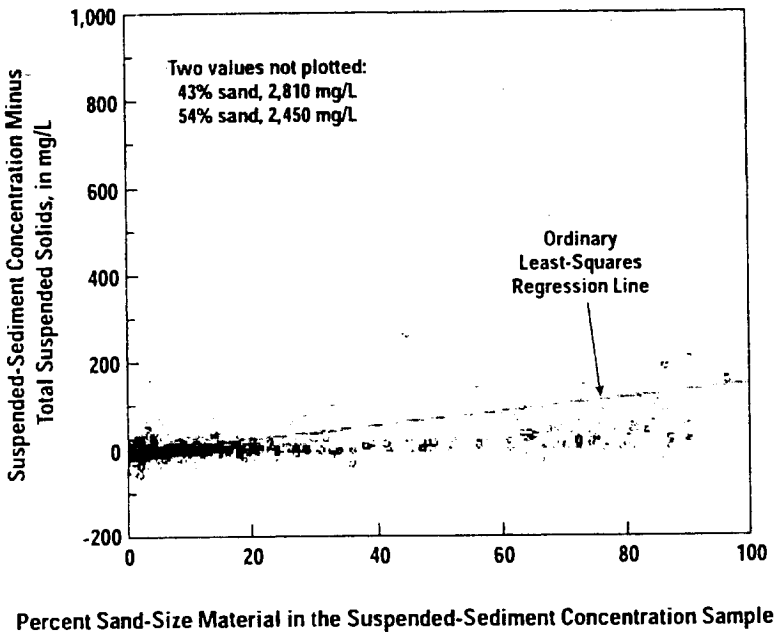

Figure 5. Relation between percent sand-size material in the sample analyzed for suspended-sediment concentration and the remainder of suspended-sediment concentration minus total suspended solids.

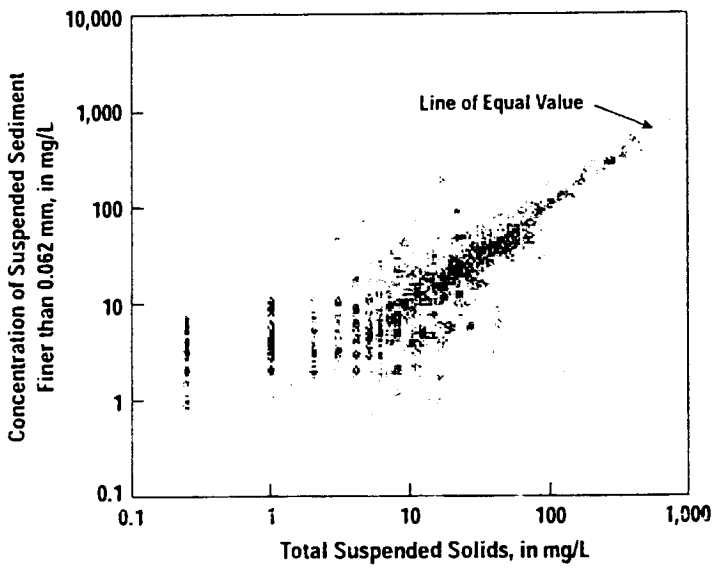

Figure 6. Relationship between total suspended solids and the concentration of suspended sediments finer than 0.062mm in paired suspended-sediment concentration samples. All SSC and TSS values less than 0.25 mg/L were set equal to 0.25 mg/L to enable plotting the data on logarithmic coordinates.

the suspended solid-phase discharges compared to those estimates that are computed from SSC data. TSS discharge underestimates may be negligible for streams conveying a predominantly fine material load over the range of discharges. Substantial underestimates of TSS discharges can be expected for streams conveying sediment loads that exceed about a third sand-size material in composition, and with percentages and concentrations of sand-size material that increase with discharge.

Figure 7 shows an example of the influence of bias resulting from using TSS data to calculate instantaneous sediment discharges for a stream in the northeastern United States. All the TSS and SSC samples used to compute sediment discharges from October 15 through December 24, 1998 were collected by a cooperating agency using an open bottle and analyzed by the cooperator's laboratory. The apparent order-of-magnitude change in sediment discharges between November and December 1998 was not related to any in-stream change in solid-phase transport, but to a change in analytical procedures (Henry Zajd, Jr., U.S. Geological Survey, oral commun., 2000). TSS analyses were performed on all samples collected in October and November 1998, and SSC analyses were used to produce subsequent data. The USGS did not publish daily sediment discharges for the pre-December period shown in figure 7 because the TSS data used in the computations were considered unreliable.

Quality-Control Data

Box plots that show the results of quality-control samples analyzed for SSC and TSS by a cooperating laboratory participating in the USGS National Sediment Laboratory Quality Assurance Program are shown in figure 8. The samples were analyzed in five sample sets. Box plots for sample sets 1997-1, 1997-2, and 1998-1 represent TSS analytical results. Box plots for study sample sets 1998-2 and 1999-1 represent SSC analytical results. This figure illustrates two important characteristics related to sediment-data quality.

First, both the SSC and TSS data tend to be negatively biased. The combined data for all samples analyzed as part of the Sediment Laboratory Quality Assurance Program from 1996 through September 2000 have a median concentration bias of -1.83 percent; the 25th percentile is -4.39 percent; and the 75th percentile is 0.00 percent. The bias primarily reflects a loss of some sediment, such as through a filter, or an inability to weigh accurately very small amounts of fine material in the SSC analytical procedure. The SSC median percent bias values for both study sets are about -2 and -4 percent of the known sediment mass. In contrast, TSS median percent bias values for the three study sets range from -6 to -23 percent from the known sediment mass; the mean difference in TSS median percent bias from the known sediment mass is -16 percent. Only for sample set 1997-2 does any quartile include the TSS value for the known sediment mass. The median percent bias in TSS sample set 1997-1 and in 1998-1 exceeds three F-pseudosigmas[2] from the mean value of all measured sediment mass measurements reported in the USGS National

[2]The F-pseudosigma is a nonparametric statistic analogous to the standard deviation that is calculated by using the 25th and 75th percentiles in a data set. It is resistant to the effect of extreme outliers.

Sediment Laboratory Quality Assurance Program. The analytical method used by the laboratory for determination of TSS in natural-water samples was deemed unacceptable by the U.S. Geological Survey (USGS, 1999b).

Second, the variances associated with the TSS quality-control data are large compared to those for SSC data (figure 8). The least variable data – those from sample set 1997-1 – range from -18 to -32 percent of the known value, and the difference between the 1st and 3rd quartile values is 9 percent. In comparison, the most variable SSC data – those from sample set 1999-1 – range from 0 to -5 percent; the difference in the 1st and 3rd quantile values is 4 percent.

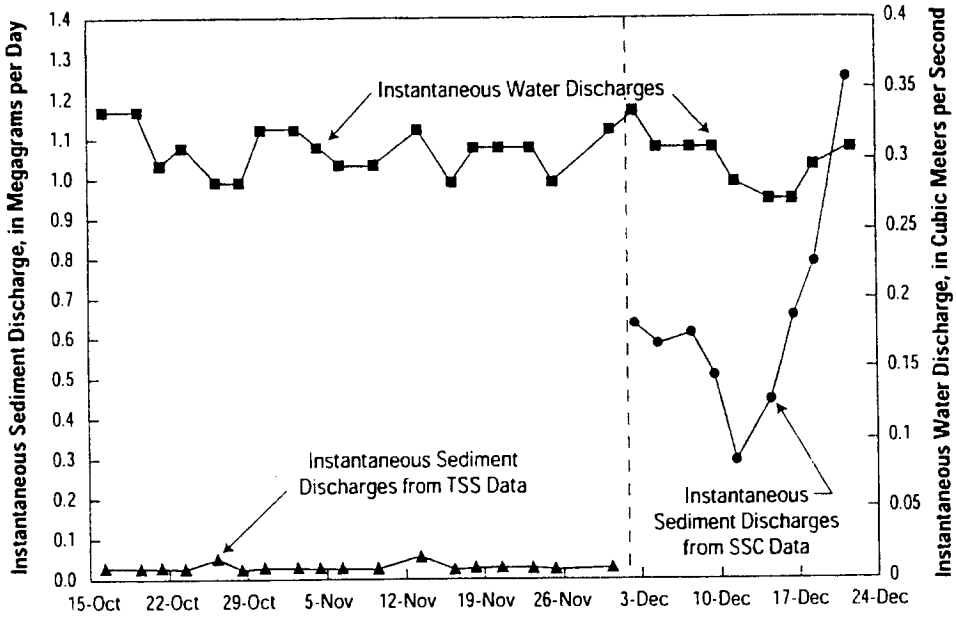

Figure 7. Instantaneous water discharges, and sediment discharges computed from total suspended solids (TSS) and suspended-sediment concentration (SSC) data for a stream in the northeastern United States, 1998.

In terms of bias and variance, the TSS results from two of the first three sample sets – 1997-1 and 1998-1 – were considered unacceptable by the U.S. Geological Survey (U.S. Geological Survey, 1998; 1999a). The SSC results from study sample sets 1998-2 and 1999-1, which were produced by the same laboratory, are considered among the most accurate of all laboratories that participated in the USGS National Sediment Laboratory Quality Assessment Program (John Gordon, U.S. Geological Survey, oral commun., 2000).

CONCLUSIONS

Of the two analytical methods examined for measuring the mass of solid-phase material in natural-water samples — suspended-sediment concentrations (SSC), and total suspended solids (TSS), — data produced by the SSC technique are the more reliable. This is particularly true when the amount of sand in a sample exceeds about a quarter of the dry sediment mass. This conclusion is based on the following observations:

1. The SSC analytical procedure entails measurement of the entire mass of sediment and the net weight for the entire sample. In contrast, only a part of the water-sediment mixture is typically used in the TSS analysis. Difficulties in, and variations for methods associated with obtaining TSS subsamples can result in determinations of solid-phase characteristics that are substantially different from those of the original sample.

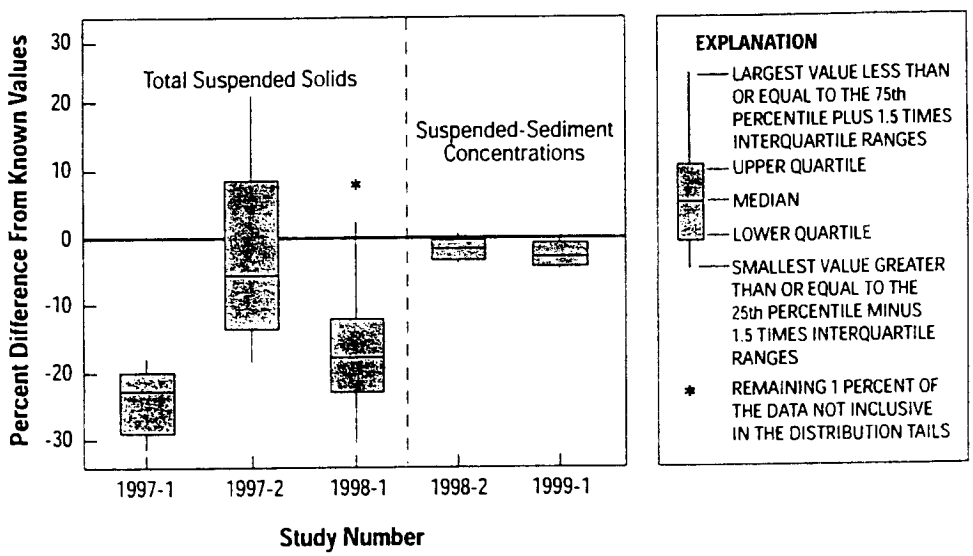

Figure 8. Variability in results of suspended-sediment concentrations and total suspended solids analytical methods in quality-control water samples analyzed by a co-operator laboratory. (John D. Gordon, U.S. Geological Survey, written commun., 2000).

2. Subsampling by pipette or by pouring from an open container will generally result in production of a sediment-deficient subsample. An analysis of 3,235 paired SSC and TSS natural-water samples from eight States showed that SSC values tend to exceed their paired TSS values, particularly at larger values of SSC. This is consistent with the assumption that most subsamples used to determine the TSS data were obtained by pipette or by pouring from an open container.

3. An analysis of 860 paired SSC and TSS natural-water samples for which relative amounts of sand-size and finer material are known for the SSC sample were used to determine the effect of sand-size particles on the TSS analysis. SSC values tend to be larger than their paired TSS values as the percentage of sand-size material exceeds about a quarter of the mass of sediment in the sample. Additionally, a relation between values of TSS and the paired SSC material finer than 0.062 mm showed that for samples with TSS values exceeding about 5 mg/L, the paired SSC and TSS data are more or less evenly distributed around the line of equal value. Sand-size material is more difficult to subsample than finer material due to the large fall velocity of sand-size material as described by Stokes' Law.

The tendency for SSC values to exceed their paired TSS values has important ramifications for computations of suspended solid-phase discharges; those computed using TSS data will often underestimate solid-phase discharges. This is particularly true for sites when the percentages of sand-size material in the water samples exceed about a third and where concentrations and percentages of sand-size material in transport increase with flow.

4. Fifty-three quality-control samples from a cooperator's laboratory — three sample sets totaling 35 TSS analyses of subsamples obtained by pouring from original samples, and two sample sets totaling 18 SSC analyses — were used to compare bias and variance introduced by use of the TSS and SSC analytical methods. Two of the three sample sets analyzed for TSS had unacceptably large mean negative bias. Variances associated with all three TSS sample sets were at least double those associated with the SSC quality-control results from the same laboratory. The two SSC sample sets analyzed by the same laboratory had small variances compared with those for the three TSS sample sets. The slight negative bias values associated with the SSC sample sets were consistent with data analyzed by most laboratories participating in the USGS National Sediment Laboratory Quality Assurance Program.

5. Review of the literature indicates that the TSS method originated as an analytical method for wastewater, presumably for samples collected after a settling step at a wastewater treatment facility. The results of this evaluation do not support use of the TSS method to produce reliable concentrations of solid-phase material in natural-water samples. The TSS method is being misapplied to samples from natural water.

Some SSC and TSS data may be comparable, particularly when the percentage or amount of sand-size material in the sample is less than about 25 percent. TSS values from analyses of samples collected following a settling step for coarser sediments, such as those obtained for compliance purposes at sewage treatment plants and water treatment facilities, may be reliable. However, because relatively few TSS data are associated with the percent sand-size and finer material from SSC samples, it is usually impossible to identify which if any TSS data may be biased. Some of the TSS data may reflect the mass of suspended solids in natural-water samples, but there are currently no absolute means to identify those data, nor a generally reliable procedure to correct biased TSS data.

The TSS method, which was originally designed for analyses of wastewater samples, is shown to be fundamentally unreliable for the analysis of natural-water samples. In contrast, the SSC method produces relatively reliable results for samples of natural water, regardless of the amount or percentage of sand-size material in the samples. SSC and TSS data collected from natural water are not comparable and should not be used interchangeably. The accuracy and comparability of suspended solid-phase concentrations of the Nation's natural waters would be greatly enhanced if all these data were produced by the SSC analytical method.

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U.S. Geological Survey, Reston, Virginia
John R. Gray, Hydrologist/Sediment Specialist
U.S. Geological Survey, Office of Surface Water
415 National Center, 12201 Sunrise Valley Drive
Reston, VA 20192
703/648-5318, FAX 648-5295, jrgray@usgs.gov

Proposed Agenda
Working Group to Address Industrial/Commercial Program Issues
On
March 20, 2001, 10:00 to 1:30
At the
Regional Water Quality Control Board Los Angeles
320 West 4th Street, Suite 200, LA

1. Introductions, review agenda, etc.

2. Scope of Current Industrial/Commercial Program - Overview (LA County, LA City, others)
   - current educational site visits inspection program and record keeping

3. Industrial/Commercial Inspection and Enforcement Program
   - Scope
   - Using existing already developed tools (database for industrial commercial, critical sources findings, etc.)
   - Prioritization
   - Inspection procedures

4. Local Enforcement Issues
   - legal authority
   - enforcing department
   - enforcement procedures
   - follow-up etc.
   - record keeping

5. Performance Standards
   - establish a frequency of inspection based on prioritization
   - enforcement performance standard

6. Proposed improvements to the Tracking system
   - database [web-based?]
   - GIS
   - Other

7. Coordination between Regional Board and Permittees Inspection Programs

8. Next Steps

PLEASE _ N FOR RECORD OF PARTICIPATION Industrial / Commercial Program MS4 LA Per +

Location: **CRWQCB - REGION 4**
JUNIPERO-SERRA BUILDING
320 W. FOURTH STREET, SUITE 200, LOS ANGELES, CA 90013

Date: 3/20/01

PLEASE WRITE LEGIBLY

	NAME	AGENCY/COMPANY/ RESIDENT	MAILING/E-MAIL ADDRESS	TEL. NO.	FAX NO.
1.	Dan Radulescu	RWQCB - LA	dradulescu@rb4.swrcb.ca.gov	213 576 6668	213 576 6660
2.	Xavier Swamikannu	RWQCB - LA	xswamik@rb4.swrcb.ca.gov	213-576 6654	
3.	Gary Lee Moore	City of LA	gmoore@san.lacity.org	213 847-6346	213 847-5443
4.	Ed Schroder	City of L.A.	ESCHRODER@SIGNAL-HILL.CA.US	562 989-7355	562 989-7391
5.	Wendell Johnson	C.T. of Torrance	WJOHNSON@TORNET.COM	310 618 2920	x2922
6.	Wendy Phillips	LA Water Bd	wphillip@rb4.swrcb.ca.gov	213-576-6618	-5777
7.	Mustafa Arikan	LA County DPW	[illegible]	(626) 455-5948	3554
8.	Glenn Howe	LA Co. DPW	[illegible]	[illegible]58-5403	[illegible]
9.	Allan Rigg	City of Palos Verdes Estates	arigg@pvestates.org	310-378-0383	310-378-7820

R0001463

	NAME	AGENCY/COMPANY/ RESIDENT	ADDRESS	TEL. NO.	FAX NO.
10.	Carolina Trevino	LACDPW			
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					

Key concept points for Industrial/Commercial Inspection Enforcement Program

The Phase I regulations 40 CFR 122.26(d)(2) require, in part, that the applicant (i) develop adequate legal authority, (ii) perform a source identification, and (iv) develop a management program to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system design and engineering methods, and such other provisions which are appropriate. Specifically, with regards to industrial controls, the management plan shall include the following.

40 CFR 122.26(d)(2)(iv)(C), A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system. The program shall:
(1) Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges;
(2) Describe a monitoring program for storm water discharges associated with industrial facilities.....

The municipality is ultimately responsible for discharges from their MS4. Because industrial awareness of the program may not be complete, there may be facilities within the MS4 area that should be permitted but are not. In addition, the Phase I regulations that require industries to obtain permits is driven by SIC Code. This has been shown to be less than comprehensive in identifying industries (*by industries we also mean commercial businesses."Industries" is intended as a generic term*) that should be permitted (*the argument for additional commercial sources*). Another concern is that the permitting authority may not have adequate resources to provide the necessary oversight of permitted facilities. Therefore, it is in the municipality's best interest to assess their specific situation and implement an industrial/commercial inspection and enforcement program to control the contribution of pollutants to and through their MS4 to the maximum extent practicable.

In the preamble for its 1990 regulations, US EPA clearly states the intended strategy for discharges of storm water associated with industrial activity: "...Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system's discharges. These permits are expected to require that **controls** be placed on storm water discharges associated with industrial activity which discharge through the municipal system.

Recognizing that the municipality is ultimately responsible for the water quality of discharges the municipalities should evaluate the industrial/commercial base and determine their status with the permit requirements and contribution to the MS4 and potential impacts to the receiving waters. The following areas must be addressed in order to implement a meaningful industrial/commercial inspection and enforcement program that has the ability to **control** the contribution of pollutants from industrial/commercial sites to the maximum extent practicable.

- **Source Identification**
  - Identification of industrial/commercial sites discharging to the MS4 (by SIC codes and narrative if needed)
  - Characterization of activities, materials used and potential for contributing pollutants and what type of pollutants

should be continued under the auspices of the Public Education program, and further critical sources studies continued to identify additional potential industries or group of facilities contributing pollutants to the MS4.

- **For all**:
  - implementation of baseline BMPs using the tools already developed, and continue developing new ones for additional sectors if needed;
  - use of existing checklist for inspection

- A municipal industrial/commercial program should focus on the following categories in the order of increasing effort
  - **Gas stations**. They may be the target of a focused educational program using and engaging corporate or franchise association as a conduit for the educational efforts. Frequency: once in 24 months but not less than two times during the life of the permit.
  - **Restaurants**. Frequency: once per year
  - **Automotive services**. Frequency: once in 24 months not less than twice per permit cycle.
  - **Phase one facilities**. Frequency: once in 24 months not less than twice per permit cycle. In first phase, all facilities will be inspected, but facilities with no exposure will be eliminated from the second phase inspection effort.
  - **Other commercial facilities (tied with 303(d) list impairments)**. Frequency: once in 24 months not less than twice per permit cycle.
  - **Municipalities will use their enforcement tools to assure compliance with the implementation of baseline BMPs**. In addition, facilities identified needing coverage under the State Industrial General Permit will be referred to the Regional Board as non-filers.

Agenda
Follow-up Working Group Meeting to Address Construction Program Issues
On
March 20, 2001, 2:00 to 4:00
At the
Regional Water Quality Control Board Los Angeles
320 West 4th Street, Suite 200, LA

1. Introductions, review agenda, etc.

2. Scope of Construction Program - Overview
   - current inspection program and record keeping
   - project thresholds [any exclusions, prioritization]
   - evidence necessary for issuing grading permits to projects covered under the state storm water permit

3. Local Enforcement Issues
   - legal authority
   - enforcing department
   - enforcement procedures
   - follow-up etc.
   - record keeping

4. Performance Standards
   - priority categories of projects
   - priority periods etc.

5. Proposed improvements to the Tracking system
   - database [web-based?]
   - GIS
   - Other

6. Coordination between Regional Board and Permittees Inspection Programs

7. Next Steps

Size	NOI	State SWPPP	Baseline BMPs	Local SWPPP	Wet weather Inspection	Reporting	Enforcement
>=5 ac	✓*	✓	✓	✓(subst SWPPP)	Refferal (100%)	Grading permits	✓(Referral)
1-5 ac	(2003)yes	No (2003?)	✓	✓	~~100%~~ 1	Grading permits	✓
<1 ac (impaired water)	No	No	✓	✓ / case disturbance	~~100%~~ 1	Grading permits	✓
<1 ac (other)	no	No	✓	optional	Optional (prioritize)	Grading permits / Sml disturbance	✓

*including common plan

- Reporting keep track of#s / documentation and enforcement #s

– phase II

PLEASE SIGN FOR RECORD OF PARTICIPATION Construction Meeting Follow-up

Location: **CRWQCB - REGION 4**
JUNIPERO-SERRA BUILDING
320 W. FOURTH STREET, SUITE 200, LOS ANGELES, CA 90013

Date: 3/20/01

PLEASE WRITE LEGIBLY

	NAME	AGENCY/COMPANY/ RESIDENT	MAILING/E-MAIL ADDRESS	TEL. NO.	FAX NO.
1.	Dan Radulescu	RWQCB-LA	dradulescu@rb4.swrcb.ca.gov	213. 576 6668	213 576 6660
2.	Xavier Swamikatha	RWQCB-LA	xswami@rb4.swrcb.ca.gov	213 576-6654	
3.	Carlos Urrutia	RWQCB-LA	curruiag@rb4.swrcb.ca.gov	213 576-6655	
4.	ED SCHROEDER	CITY OF SIGNAL HILL	ESCHROEDER@CI.SIGNAL-HILL.CA.US	562 989-7355	562 989 7391
5.	WENDELL JOHNSON	CITY OF TORRANCE	WJOHNSON@TORRANCE.COM	310 618 2820	X2822
6.	Heather Merenda	City of Calabasas	hmerenda@ci.calabasas.ca.us	(818) 878 4225	(818) 878 4265
7.	MORAD SEDRAK	City of LA	msedrak@san.lacity.org	(213)8476353	
8.	Carolina Trevizo	LACoDPW	CTrevizo@dpw.co.la.ca.us	(626) 458-3178	458-3131
9.	ALLAN RIGG	CITY OF P.V. ESTATES	arigg@pvestates.org	310 378-0383	310 378-7820

California Regional Water Quality Control Board
Los Angeles Region

Winston H. Hickox
Secretary for Environmental Protection

320 W. 4th Street, Suite 200, Los Angeles, CA 90013
Phone (213) 576-6600 FAX (213) 576-6640

Gray Davis
Governor

TO: Permittees of the Los Angeles County Municipal Storm Water Permit
Storm Water Consultants
Environmental Organizations
Other Interested Parties

FROM: Xavier Swamikannu, D.Env.
Chief, LA/Long Beach MS4 Unit

DATE: March 21, 2001

SUBJECT: PUBLIC WORKSHOP FOR THE RENEWAL OF THE LOS ANGELES COUNTY MUNICIPAL STORM WATER PERMIT

On July 15, 1996, The Los Angeles County Regional Water Quality Control Board (Regional Board) issued a municipal storm water National Pollutant Discharge Elimination System (NPDES) permit to the County of Los Angeles and its 85 incorporated cities. On January 31, 2001, the Los Angeles County Department of Public Works submitted an application for renewal of this permit in the form of a Report of Waste Discharge for Los Angeles County and the incorporated cities, except for the Santa Clara River Watershed, and the City of Long Beach.

The Regional Board is in the process of drafting the new permit. The first draft is scheduled for issuance on April 2, 2001. The Regional Board is holding a public workshop to discuss the first draft, on:

Wednesday, April 18, 2001 -- from 9:30 am to 12:30 pm
At the Regional Board Office
First Floor Conference Room
320 W. 4th Street, Los Angeles

The public workshop is intended for Permittees, interested environmental organizations, consultants, and other parties. The workshop will provide an opportunity to comment on the first draft of the permit and to give input and ideas regarding the direction of Los Angeles County Storm Water Management Program. The Regional Board is currently scheduled to propose adoption of the final permit on July 26, 2001, at its Board Meeting.

To receive a copy of the first draft and to register for the workshop, please provide your name, address or email, and telephone number to Weindy Abarquez, the Storm Water Secretary. She may be reached at (213) 576-6802 or wabarquez@rb4.swrcb.ca.gov. You may also download a copy of the draft and other related documents from the Regional Board webpage at www.swrcb.ca.gov/rwqcb4/html/programs/Stormwater/renewal.html.

R0001470

LOS ANGELES COUNTY MUNICIPAL STORM WATER PERMIT WORKSHOP
TENTATIVE AGENDA

Wednesday, April 18, 2001 at 9:30 am
First Floor Conference Room
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Los Angeles

9:30	Welcome	Dennis Dickerson
9:40	Introductions	Everyone
9:50	Background	Xavier Swamikannu/ Wendy Phillips
	Review and Comments on Draft Special Provisions	
10:00	Public Education/Programs for Industrial/ Commercial Businesses	Dan Radulescu/Everyone
10:30	Public Agency Activities	Carlos Urrunaga/Everyone
11:00	Illicit Connections/Discharge Elimination	Wendy Phillips/Everyone
11:30	Development Planning	Xavier Swamikannu/Everyone
12:00	Programs for Construction Sites	Carlos Urrunaga/Everyone
12:30	Close	

Proposed Agenda[1]
Working Group to Review Preliminary Permit Draft

Thursday, March 22, 2001, 10:00 to 2:00

City of Los Angeles, Bureau of Sanitation
Storm Water Management Office
650 S. Spring Street
7th Floor

1.	Make introductions, review agenda, etc.	Everyone
2.	Followup from meeting on March 20th	
	Discuss need for GIS as an analytical tool	Dan (and Eduardo Escobar?)
	Brief permittees on status of legal research	Wendy
3.	Review Special Provisions and respond to Permittees' comments on programs for:	Regional Board, with Permittees comments
	IC/ID Elimination	Wendy
	Public Education	Megan
	Construction Sites	Carlos
	Industrial/Commercial Inspections	Dan
	Watersheds	Dan
	Planning and Land Development – if time allows	Xavier
3	Review other key provisions and respond to Permittees' comments on:	Xavier
	TMDL provision – to be added.	
	WMAPs – to be eliminated?	
	Administrative review procedure – to be eliminated.	
4	Discuss next steps	Mustafa and Wendy

[1] Given time restrictions, Special Provisions for Planning and Land Development may be deferred to future meetings. Also, Public Agency Activities is being deferred to a later date.

SIGN UP SHEET

March 22, 2001 45th Work Group Meeting

1. Laura Gentile, US EPA Region 9, (via teleconference)
2. Dan Radulescu, LA RWQCB - 213 576 6668

3. Megan Fisher	RWQCB	213 576-6790
4. [illegible] Howe	LACDPW	626-458-5963
5. Wai So	LACDPW	626-458-6986
6. Eduardo Escobar	LACDPW	626 458-4355
7. Carolina Trevizo	LACDPW	626 458 3978
Mustafa Ariki	" "	626-458-5948
CARLOS URRUNAGA	RWQCB-LA	213 576-6655
ED SCHRADER	SIGNAL HILL	562 989-7355
John Dorsey	City LA, Stormwater	(213) 847-6347
MORAD SEDRAK	City of LA, Stormwater	(213) 847-6353
ALLAN RIGG	City of Palos Verdes Estates	310-378-0383
Wendy Phillips	Rg Bd	213-576-6618
Xavier [illegible]	RWQCB	213-576-6654
Kimberly Zyman	LACDPW	(626) 458-6533
WENDELL JOHNSON	CITY OF TORRANCE	310 618-2820
Heather Merenda	City of Calabasas	818) 878-[illegible] x293

R0001473

22 March 2001 ***DRAFT***

Regional Board staff's ideas for permit renewal with respect to Construction Activity.

Construction sites less than 1 acre:

• N.O.I. prior to a municipal grading permit	No
• Baseline BMPs or local SWPPP (approval of local SWPPP)	Yes, if local SWPPP
• Wet weather inspections based upon a municipal prioritization (i.e. slopes vs. flat areas)	Optional
• Municipal grading permits tracked (GIS or database)	Yes
• Municipal oversight of site operators	Yes

Construction sites less than 1 Acre (impaired waterbody)

• N.O.I. prior to a municipal grading permit (keep copy of NOI)	**If city requests**
• Baseline BMPs or local SWPPP (approval of local SWPPP)	**Yes**
• Wet weather inspections	**Yes**
• Municipal grading permits tracked (GIS or database)	Yes
• Municipal oversight of site operators	Yes

Construction sites between 1 acre and less than 5 acres

• N.O.I. prior to a municipal grading permit (keep copy of NOI)	**Yes, in 2003**
• Baseline BMPs or local SWPPP (approval of local SWPPP)	**Yes**
• Wet weather inspections	**Yes**
• Municipal grading permits tracked (GIS or database)	Yes
• Municipal oversight of site operators	Yes

Construction sites 5 acres and greater (1 acre and greater in 2003)

• N.O.I. prior to a municipal grading permit (keep copy of NOI)	**Yes**
• Local SWPPP – equivalent to state SWPPP (approval of SWPPP)	**Yes**
• Wet weather inspections	**Yes**
• Municipal grading permits tracked (GIS or database)	Yes
• Municipal oversight of site operators	Yes

– coordination of activities

Part 1. DISCHARGE PROHIBITIONS

A. The Permittee shall effectively prohibit non-storm water discharges into the MS4 and watercourses except where such discharges are presumed to be free of pollutants and are either:

1. Are covered by a separate individual or general NPDES permit; or

2. Are in one of the categories below, and meet all conditions specified by the Executive Officer:

a) Categories of natural flow:

(1) Springs and rising ground water;

(2) Flows from riparian zones or wetlands;

(3) Stream diversions, permitted by the State Board; and

(4) Storm water infiltrating into the ground and then into storm drains.

b) Categories of emergency flows:

(1) Emergency fire fighting runoff.

c) Categories of flows incidental to urban activities, all of which are subject to conditions that shall be approved by the Executive Officer:

(1) Landscape irrigation runoff from potable or Title 22 recycled waters;

(2) Water line flushing of potable water distribution systems;

(3) Incidental runoff from potable water sources;

(4) Passive drains for foundations, footings, and crawl spaces;

(5) Air conditioning condensate;

(6) Dechlorinated swimming pool discharges;

(7) Non-commercial car washing by residents or by non-profit organizations; and

(8) Sidewalk washing.

In the event that any of the above categories of non-storm water discharges are determined to be a source of pollutants by the Executive Officer, the discharge will no longer be exempt from this prohibition unless the Permittee implements conditions approved by the Executive Officer to ensure that the discharge is not a source of pollutants. Notwithstanding the above, the Regional Board Executive Officer may impose additional prohibitions of non-storm water discharges in consideration of anti-degradation policies.

Part 2. RECEIVING WATER LIMITATIONS

B. Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited.

C. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance.

D. The Permittee shall comply with the permit through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the SQMP and its components and other requirements of this permit including any modifications. The SQMP and its components shall be designed to achieve compliance with receiving water limitations. If exceedances of water quality objectives or water quality standards (collectively, water quality standards) persist, notwithstanding implementation of the SQMP and its components and other requirements of this permit, the Permittee shall assure compliance with discharge prohibitions and receiving water limitations by complying with the following procedure:

1. Upon a determination by either the Permittee or the Regional Board that discharges are causing or contributing to an exceedance of an applicable water quality standard, the Permittee shall promptly notify and thereafter submit a report to the Regional Board that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedances of water quality standards. This report may be incorporated in the annual update of the SQMP and its components unless the Regional Board directs an earlier submittal. The report shall include an implementation schedule. The Regional Board may require modifications to the Report.

2. Submit any modifications to the report required by the Regional Board within 30 days of notification

3. Within 30 days following the approval of the report, the Permittees shall revise the SQMP and its components and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, implementation schedule, and any additional monitoring required

4. Implement the revised SQMP and its components and monitoring program according to the approved schedule

E. So long as the Permittee has complied with the procedures set forth above and is implementing the revised SQMP and its components, the Permittee does not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Regional Board to develop additional BMPs.

Part 3. STORM WATER QUALITY MANAGEMENT PLAN IMPLEMENTATION, MONITORING, AND REPORTING

F. Responsibilities of the Principal Permittee

The Principal Permittee will coordinate and facilitate activities necessary to comply with the requirements of this Order, but is not responsible for ensuring compliance of any individual Permittee. The County of Los

Angeles is hereby designated as the Principal Permittee, and as such shall:

1. Coordinates permit activities among Permittees and negotiate NPDES requirements with the Regional Board.

   All Permittees will be given the opportunity to have an active role in, provide input and participate in the development of permit requirements. However, the Principal Permittee and the watershed Executive Advisory Committee (EAC) representative(s) will conduct formal discussions with the Regional Board on behalf of Permittees.

2. Provide personnel and fiscal resources for the necessary update of the SQMP and its components;

3. Convene the Watershed Management Committees (WMCs) constituted pursuant to Part H., below, upon designation of representatives;

4. Provide technical and administrative support for committees that will be organized to implement the SQMP and its components;

5. Implement the Countywide Monitoring Program required in this Order;

6. Provide personnel and fiscal resources for the preparation and submittal to the Regional Board of annual reports and summaries of other reports required under the SQMP; and

7. Comply with the "Responsibilities of the Permittees" in Part G., below;

G. Responsibilities of the Permittees

Each Permittee is only responsible for the implementation of the appropriate storm water management program developed pursuant to the requirements of this Order, and not for the implementation of the provisions applicable to the Principal Permittee or other Permittees. A

Permittee is required to comply only with the requirements of this Order applicable to discharges, which originate from places within its boundaries over which it has authority to enforce the requirements of this Order. Each Permittee shall, within its geographic jurisdiction:

1. Comply with the requirements of the SQMP and its amendments;

2. Coordinate among its internal departments and agencies, as appropriate, to facilitate the implementation of the requirements of the SQMP and its components applicable to such Permittee in an efficient and cost-effective manner;

3. Participate in the update of the SQMP and its components;

4. Designate a technically knowledgeable representative to the appropriate WMC;

5. Implement the SQMP upon approval by the Executive Officer; and,

6. Work with other public agencies (e.g. Fire Department, Building and Safety, Code Enforcement, etc.) toward the successful implementation of the provisions of this Order and SQMP components. As such, these organizations are expected to actively participate in implementing the area wide storm water program.

H. Watershed Management Committees (WMCs)

1. Each WMC shall be comprised of a voting representative from each Permittee in the Watershed Management Area (WMA).

2. The WMC's chair and secretary shall be chosen by the WMC upon permit adoption and on an annual basis, thereafter. In the absence of volunteer Permittee(s) for the positions, the Principal Permittee shall assume those roles until the WMC chooses members of the committee for the positions.

3. Each WMC shall:

a) Facilitate cooperation and exchange of information among Permittees;

b) Establish additional goals and objectives and associated deadlines for the WMA, as the program implementation progresses;

c) Prioritize pollution control efforts based on beneficial use impairment(s), watershed characteristics and analysis of results from studies and the monitoring program;

d) Develop and/or update and monitor the adequate implementation, on an annual basis, of the tasks identified for the WMA;

e) Assess the effectiveness of, prepare revisions for, and recommend appropriate changes to the SQMP and its components;

f) Continue the Industrial/Commercial Source Identification program. Additional industrial/commercial or other types of activities will be investigated and those identified as priority shall be included in the IIEP;

g) Conduct joint WMC meetings at least four times per year and, as necessary.

I. Executive Advisory Committee (EAC)

1. The EAC is constituted by one representative from the Malibu Creek WMA and by two representatives from each of the other WMAs, along with representatives from the City of Los Angeles, and the Los Angeles County.

J. General Requirements

1. The Permittees shall, at a minimum, adopt and implement the elements of the SQMP and its components that are consistent with the terms of this permit.

   Additionally, modifications to the SQMP made during the term of the permit including those made in accordance with part 3.B.(?) of this permit shall be implemented.

2. The SQMP shall, at a minimum, comply with applicable requirements of 40 CFR 122.26(d)(2). The SQMP and its components shall be implemented so as to reduce the discharges of pollutants in storm water to the maximum extent practicable. The SQMP and its components are described in attachments A to X.

3. Each Permittee shall be responsible for implementation of the relevant portions of the SQMP within its jurisdictional boundaries. The Principal Permittee shall be responsible for program coordination as described in III.A, as well as, compliance with the relevant portions of the permit within its jurisdiction.

K. SQMP Modifications

1. The Permittees shall modify the SQMP and its components adopted with this Order to make it consistent with the requirements herein. The revised SQMP and its components will be submitted to the Regional Board Executive Officer for approval no later than (six months from the adoption of this Order).

2. The Permittee shall modify the SQMP to comply with waste load allocations developed and approved pursuant to the process for the designation and implementation of Total Daily Maximum Loads (TMDLs) for impaired water bodies.

3. The Regional Board Executive Officer may approve changes to the SQMP and its components, except noted in (above paragraph), either:

a) Upon petition by the Permittees or interested parties, and after providing for and considering public comment, or,

b) As deemed necessary by the Regional Board Executive Officer following notice to the Permittees, and after providing for and considering public comments.

4. The Permittees shall modify the SQMP and its components, at the direction of the Regional Board Executive Officer, to incorporate regional provisions. Such provisions may include watershed specific requirements for watersheds shared by Permittees with other MS4 programs.

L. Legal Authority

1. Permittees shall possess the necessary legal authority to prohibit non-storm water discharges, to the maximum extent practicable, to the storm drain system, including, but not limited to:

a) A prohibition on illicit discharges and illicit connections and a requirement for removal of illicit connections;

(1) Prohibit the discharge of wash waters to the MS4 from the cleaning of gas stations, auto repair garages, or other types of automotive service facilities;

(2) Prohibit the discharge of runoff to the MS4 from mobile auto washing, steam cleaning, mobile carpet cleaning, and other such mobile commercial and industrial operations;

(3) Prohibit the discharge of runoff to the MS4 from areas where repair of machinery and equipment which are visibly leaking oil, fluid or antifreeze, is undertaken;

(4) Prohibit the discharge of runoff to the MS4 from storage areas of materials containing grease, oil, or

other hazardous substances, and uncovered receptacles containing hazardous materials;

(5) Prohibit the discharge of chlorinated swimming pool water and filter backwash to the MS4;

(6) Prohibit the discharge of untreated runoff from the washing of toxic materials from paved or unpaved areas to the MS4;

(7) Prohibit washing impervious surfaces in industrial/commercial areas that results in a discharge of untreated runoff to the MS4, unless specifically required by State or local health and safety codes; and

(8) Prohibit the discharge from washing out concrete trucks, pumps, tools, and equipment to the MS4.

b) A prohibition on spills, dumping, or disposal of materials into the MS4, other than storm water, such as;

(1) Litter, landscape debris and construction debris;

(2) Any state or federally banned pesticide, fungicide or herbicide;

(3) Food wastes; and

(4) Fuel and chemical wastes, animal wastes, garbage, batteries, and other materials that have potential adverse impacts on water quality.

c) A mechanism to control, through interagency agreement, the contribution of pollutants from one portion of the MS4 to another portion of the MS4;

d) A requirement for compliance with conditions in Permittees ordinances, permits, contracts, or orders (i.e. hold dischargers to its MS4 accountable for their contributions of pollutants and flows);

e) Utilize enforcement mechanisms to require compliance with Permittees ordinances, permits, contracts, or orders;

f) Control the contribution, or potential contribution, of pollutants in discharges of storm water runoff associated with industrial activities (including construction activities) **to** its MS4 and controls the quality of storm water runoff **from** industrial sites (including construction sites). This requirement applies both to industrial and construction sites that have coverage under statewide general industrial or construction storm water permits, as well as those sites that do not. Any existing ordinances will be upgraded and enforced as necessary to comply with this Order as specified in (next after following paragraph by:); and,

g) The ability to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and non-compliance with permit conditions, including the prohibition of illicit discharges to the MS4. Permittees must possess authority to enter, sample, inspect, review and copy records, and require regular reports from industrial facilities discharging polluted or potentially polluted storm water runoff into its MS4 (including construction sites).

h) Require the use of best management practices (BMPs) to prevent or reduce the discharge of pollutants to MS4s.

2. Each Permittee shall adopt, implement an agency-specific storm water and urban runoff ordinance or amend an existing one, if necessary, to be able to enforce all requirements of the permit.

M. Annual Storm Water Program Report and Assessment

1. The Discharger shall submit, by October 15 of each year beginning the Year 2002, an Annual Storm Water Program Report and Assessment documenting the status of the general program and individual tasks contained in the SQMP, and in accordance with the requirements identified in the Monitoring and Reporting Program CIxxxx of this order. The Discharger will link the evaluation of the Annual Storm Water Program Report and Assessment with the results of analyses from the monitoring and reporting program. The Annual Storm Water Program Report and Assessment shall cover the previous fiscal year from July 1 through June 30, and shall include the information necessary to assess the Discharger's compliance status relative to this Order, and the effectiveness of implementation of permit requirements on storm water quality. The Annual Storm Water Program Report and Assessment shall include any proposed changes to the SQMP and its components as approved by the Management Committee(s) (minor changes, major approved by the EO?).

   The Discharger shall submit by October 15, 2002, the Annual Report for period July 1, 2000 through July 28,2001 documenting the status of the general program up to permit reissuance and the results of analyses from the monitoring and reporting program.

2. Storm Water Management Program Budget

   a) The Discharger shall prepare annually a budget summary on resources applied to the storm water management program using the form attached. This budget summary shall include an annual summary identifying the storm water budget for the following year, using estimated percentages and written explanations where necessary, for the specific categories noted below:

      (1) Program management

      (2) Illicit connection/illicit discharge

      (3) Development planning/development construction

(4) Industrial inspection activities (including construction activities)

(5) Public Agency Activities

(i) Operations and maintenance

(ii) Municipal Street Sweeping

(iii) Fleet and Public Agency Facilities

(iv) Landscape and Recreational Facilities

(6) Capital Costs

(7) Public Information and Participation

(8) Monitoring Program

(9) Other

Permittees, in addition to the budget summary, shall report any supplemental dedicated budgets, if any, for the same categories.

N. Storm Water Monitoring Report

1. The Principal Permittee shall submit a Storm Water Monitoring Report on July 15, 2002 and annually on July 15 thereafter, in accordance with the requirements identified in the Monitoring and Reporting Program CI-XXXX of this order. The report shall include:

a) Status of implementation of the monitoring program as described in the attached Monitoring and Reporting Program CI-XXXX;

b) Results of the monitoring program; and

c) A general interpretation of the significance of the results, to the extent that data allows.

O. Modification

1. The Regional Board Executive Officer or the Regional Board consistent with 40 CFR 122.41 may approve changes to the Los Angeles County Storm Water Quality Monitoring Program, after providing the opportunity for public comment, either:

   a) By petition of the Permittee or by petition of interested parties, after the submittal of the Annual Monitoring Program Report. Such petition shall be filed not later than 60 days after the Annual Monitoring Program Report submittal date; or

   b) As deemed necessary by the Regional Board Executive Officer following notice to the Permittee.

Part 4. SPECIAL PROVISIONS

The Permittees shall modify the SQMP and its components adopted with this Order to make it consistent with the requirements herein. The revised SQMP and its components will be submitted to the Regional Board Executive Officer for approval no later than (six months from the adoption of this Order)

Public Information and Participation Program

Permittees shall work collaboratively to implement a comprehensive education/outreach program with the following objectives:

To measurably increase the knowledge of the target audiences regarding the MS4, the impacts of storm water pollution on receiving waters, and potential solutions for the target audiences to implement BMPs to reduce the problems caused;

To measurably change the behavior of target audiences by encouraging those audiences to implement appropriate solutions;

To reach out and engage all economic and ethnic groups in Los Angeles County through a public participation and involvement program.

P. Programs for Residents

1. The Discharger shall implement the Public Education Program as outlined in the SQMP, including the continuation of the following activities:

   a) Advertising

   b) Media Relations

   c) Public Service Announcements

   d) "How To" Instructional Material Distributed in a Targeted and Activity-Related Manner

   e) Corporate, Community Association, Environmental Organization and Entertainment Industry Tie-Ins

   f) 1-888-CLEAN-LA and 888CleanLA.com

   g) Events Targeted to Specific Activities and Population Sub-groups

2. Countywide Hotline

   The 888-CLEAN-LA hotline will serve as the general public reporting contact for reporting clogged catch basin inlets and illicit discharges/dumping, and general storm water management information. Each Permittee may establish its own hotline if preferred. Permittees shall include this information, updated when necessary, in public information, and the government pages of the telephone book as they are developed/published.

3. "No Dumping" Message

   Permittees shall mark all storm drain inlets with a legible "no dumping" message. In addition, signs with prohibitive language discouraging illegal dumping must be posted at designated public access points to creeks, other relevant water bodies, and channels by July 26, 2003. Good signage shall be maintained.

4. Outreach and Education

The Principal permittee shall implement the second Five-Year Education Plan as detailed in the SQMP.

Each Permittee shall conduct educational activities within its jurisdiction and participate in countywide events.

The Principal Permittee shall organize Public Outreach Strategy meetings with all Co-permittees on a quarterly basis. The Principal Permittee shall provide guidance for Permittees to augment the regional outreach and education program. Permittees shall coordinate regional and local outreach and education to reduce duplication of efforts.

The Discharger shall insure that a minimum of 35 million impressions per year are made on the general public about storm water quality via print, local TV access, local radio, or other appropriate media.

The Discharger shall provide all School Districts within its jurisdiction with materials, including videos, live presentations, brochures, and other media necessary to educate a minimum of 50 percent of all school children (K-12) every 2 years on storm water pollution. All Permittees shall cooperate to implement this requirement. Permittees shall provide the contact information for their appropriate storm water staff to the Principal Permittee within 30 days of the date this order is adopted. Cooperative efforts with other agencies may also be used to accomplish this requirement.

5. Pollutant-Specific Outreach

Permittees shall coordinate to develop outreach programs that target the watershed-specific pollutants listed in Table 1 within 6 months of the permit adoption date. It may be appropriate to address metals through the Industrial/Commercial businesses program. Region-wide pollutants may be included in the Principal Permittee's mass media efforts. Programs shall be appropriate for the anthropogenic sources of each pollutant.

Table 1. Target Pollutants for Outreach

Watershed	***Target Pollutants for Outreach***
Ballona Creek	Trash, Indicator Bacteria, Metals
Malibu Creek	Trash, Nutrients, indicator Bacteria
Los Angeles River	Trash, Nutrients (Nitrogen), Indicator Bacteria, Metals, Pesticides
San Gabriel River	Trash, Nutrients (Nitrogen), Indicator Bacteria, Metals
Dominguez Channel	Trash, Indicator Bacteria

Each Permittee shall distribute outreach materials to the general public and target audiences, such as schools, community groups, contractors and developers, and at appropriate public counters and events. Outreach material shall include information on pollutants and sources of concern, as listed in Table 1.

6. Corporate Outreach

The Principal Permittee shall develop and implement a Corporate Outreach program to educate corporate heads about storm water regulations. The program shall target gas stations and restaurant chains. At a minimum, this program shall include:

a) Consulting with corporate heads to explain storm water regulations;

b) Distribute and discuss BMP and educational material, and management suggestions to facilitate employee compliance.

Corporate Outreach for all gas station and restaurant chain corporations shall occur once every 2 years, not less than twice during the permit cycle.

7. Business Assistance Program

Permittees shall develop and implement a Business Assistance Program to provide confidential, technical resource assistance to small businesses to help them understand and comply with storm water regulations. At a minimum, programs shall include:

a) On-site technical assistance or consultation via telephone to identify and implement pollution prevention methods and best management practices;

b) Availability, distribution, and discussion of applicable BMP and educational materials; and,

c) Access to information concerning environmental consulting services, hazardous waste treatment, hauling, disposal and recycling services, and pollution prevention and control practices.

Permittees shall provide assistance to small businesses that meet the following criteria:

a) Less than 100 employees;

b) Lack funding for private consulting;

c) Lack access to the expertise necessary to understand and comply with storm water regulations; and

d) Requested assistance, or were referred through the Industrial/Commercial Inspection Program.

Permittees shall assist (through site visits, telephone consultations, presentations or material distribution) all qualifying businesses that request assistance, or 1000 businesses per year, whichever is less.

The Business Assistance Program shall be a confidential and non-enforcement program. Permittees shall conduct follow-up independent of the Business Assistance Program, based on the priorities of the Industrial/Commercial Inspection Program.

Annually, the Principal Permittee shall submit a summary of the overall strategy and any updates or modifications to the Public Information and Participation Program to the Executive Officer for approval.

A. Programs for Industrial/Commercial Businesses

Each Permittee shall implement an Industrial/Commercial Program to:

- reduce pollutants in runoff from all Industrial/Commercial sites to the maximum extent possible.

At a minimum the Industrial/Commercial program shall address:

- Regulatory mechanism requiring the implementation of proper Pollution Prevention and control measures at industrial/commercial sites;
- Source Identification;
- Threat to Water Quality Prioritization;
- Site plan review and BMP Implementation;
- Inspection of Industrial/Commercial Sites;
- Enforcement of pollution prevention and control measures at Industrial/Commercial Sites;
- Have sanctions to ensure compliance (established in the regulatory mechanism).

1. Pollution Prevention (Industrial/Commercial)

Each Permittee shall implement pollution prevention methods in its Industrial/Commercial Program and shall require its use by industry, where appropriate.

2. Source Identification (Industrial/Commercial)

Each Permittee shall develop and update annually a watershed-based inventory of all Industrial/Commercial sites within its jurisdiction regardless of site ownership. This requirement is applicable to all Industrial/Commercial sites regardless of whether the Industrial/Commercial site is subject the California statewide General NPDES Permit for Storm Water Discharges Associated With Industrial Activities, Except Construction (hereinafter General Industrial Permit) or other individual NPDES permit. Critical Sources Study results may be used to satisfy the requirements of this section. The inventory shall include the following minimum information for each Industrial/Commercial site:

a) name;

b) address; and

c) a narrative description including SIC codes that best reflects the principal products or services provided by each facility. The use of an automated database system, such as Geographical Information System (GIS) or web-based is highly recommended, but not required. Any database already available may be used to satisfy the requirements of this section.

3. Threat to Water Quality Prioritization (Industrial/Commercial)

a) To establish priorities for Industrial/Commercial oversight activities under this Order, the Permittee shall prioritize each watershed-based inventory in B.2. above by threat to water quality and update annually. Each Industrial/Commercial site shall be classified as high, medium, or low threat to water quality. In evaluating threat to water quality each Permittee shall consider (1) type of Industrial/Commercial activity (SIC Code); (2) materials used in Industrial/Commercial processes; (3) wastes generated; (4) pollutant discharge potential; (5) non-storm water discharges; (6) size of facility; (7) proximity to receiving water bodies; (8) sensitivity of receiving water bodies; (9) whether the Industrial/Commercial site is subject to the statewide General Industrial Permit; and (10) any other relevant factors.

b) At a minimum the high priority Industrial/Commercial sites shall include Industrial/Commercial facilities that are subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA); Industrial/Commercial facilities tributary to a Clean Water Act section 303(d) impaired water body, where a facility generates pollutants for which the water body is impaired; Industrial/Commercial facilities within or directly adjacent to or discharging directly to coastal lagoons or other receiving waters within environmentally sensitive areas); facilities subject to the statewide General Industrial Permit; and all other Industrial/Commercial facilities that the Permittee determines are contributing significant pollutant loading to its MS4,

regardless of whether such facilities are covered under the statewide General Industrial Permit or other NPDES permit.

4. Pollution Prevention, Control Measures and BMP Implementation

a) Each Permittee shall designate a set of minimum BMPs for high, medium, and low threat to water quality Industrial/commercial sites (as determined under section B.3.) and submit to the Regional Board for EO's approval. The designated minimum BMPs for high threat to water quality Industrial sites shall be industry and site specific as appropriate.

b) Each Permittee shall implement, or require the implementation of, the designated minimum BMPs (based upon the site's threat to water quality rating) at each industrial site within its jurisdiction. If particular minimum BMPs are infeasible at any specific site, each Permittee shall implement, or require implementation of, other equivalent BMPs. Each Permittee shall also implement or require any additional site specific BMPs as necessary to comply with this Order including BMPs which are more stringent than those required under the statewide General Industrial Permit.

c) Each Permittee shall implement, or require implementation of, additional controls for Industrial/Commercial sites tributary to Clean Water Act section 303(d) impaired water bodies (where a site generates pollutants for which the water body is impaired) as necessary to comply with this Order. Each Permittee shall implement, or require implementation of, additional controls for Industrial/Commercial sites within or directly adjacent to or discharging directly to coastal lagoons or other receiving waters within environmentally sensitive areas as necessary to comply with this Order.

5. Inspection of Industrial Sites

a) Each Permittee shall conduct Industrial site inspections for compliance with its ordinances, permits, and this Order.

Inspections shall include review of BMP implementation plans.

b) Each Permittee shall establish inspection frequencies and priorities as determined by the threat to water quality prioritization described in B.3. above. Each Permittee shall inspect high priority Industrial sites, at a minimum:

(1) Bi-annually

OR

(2) Bi-annually for any site that the responsible Permittee certifies in a written statement to the LARWQCB all of the following (certified statements may be submitted to the LARWQCB at any time for one or more sites):

(i) Permittee has record of Industrial site's Waste Discharge Identification Number (WDID#) documenting Industrial site's coverage under the statewide General Industrial Permit; and

(ii) Permittee has reviewed the Industrial site's Storm Water Pollution Prevention Plan (SWPPP); and

(iii) Permittee finds SWPPP to be in compliance with all local ordinances, permits, and plans; and

(iv) Permittee finds that the SWPPP is being properly implemented on site (including designated minimum BMPs).

Each Permittee shall inspect medium and low threat to water quality Industrial/Commercial sites based on prioritization criteria submitted to the Regional Board subject to EO's approval.

c) Based upon site inspection findings, each Permittee shall implement all follow-up actions necessary to comply with Permittee's ordinances and this Order.

d) To the extent that the LARWQCB has conducted an inspection of a high priority Industrial/Commercial site during a particular year, the requirement for the responsible Permittee to inspect this site during the same year will be satisfied.

6. Inspection of Commercial Sites

Each Permittee shall conduct site inspections at restaurants, automotive service related businesses, retail gasoline outlets and other commercial sites (as designated by the Permittees) for compliance with its ordinances, permits, and this Order.

7. Enforcement of Pollution Prevention and Control Measures at Industrial/Commercial Sites

a) Each Permittee shall enforce its storm water ordinance at all Industrial/Commercial sites as necessary to maintain compliance with this Order. Permittee ordinances or other regulatory mechanisms shall include sanctions to ensure compliance.

8. Reporting of Non-compliant Sites (Industrial/Commercial)

a) Each Permittee shall provide oral notification to the LARWQCB of non-compliant sites that are determined to pose a threat to human or environmental health within its jurisdiction within 24 hours of the discovery of noncompliance.

b) Each Permittee shall develop and submit criteria by which to evaluate events of non-compliance to determine whether they pose a threat to human or environmental health. These criteria shall be submitted in the SQMP and Annual Reports for LARWQCB review and subject to EO's approval.

Such oral notification shall be followed up by a written report to be submitted to the LARWQCB within 5 days of the incidence of non-compliance. Sites are considered non-compliant when one or more violations of local ordinances, permits, plans, or this Order exist on the site.

PERFORMANCE STANDARDS AND REPORTING

High Priority Sites inspection schedule:

- once every 24 months; not less than twice during the five years of the permit
- Additional facilities selected by WMC: once every 36 months
- For facilities identified with non-compliance, 100% follow-up
- Lower priority sites once in five years

Commercial Sites

- Once every 24 months

Reporting and progress

- At the start of the permit a baseline will be established (total number of targeted facilities in each category)
- From that baseline number a schedule of inspections will be developed The Annual Report will reflect the annual baseline and the progress for that respective year and for each additional year (cumulative progress also)
- In the Annual Report it will be reported the number of enforcement actions and follow-up inspections of non-compliant sites and a cumulative progress report kept during subsequent years of the permit
- Related training activities will be reported annually

B. Program for Development Planning

The Permittees shall implement a development-planning program with immediate effect that will require all planning priority development and redevelopment projects to,

1. Minimize impacts from storm water and urban runoff on the biological integrity of natural drainage systems and water bodies in accordance with requirements under CEQA, Section 404 of the CWA, local ordinances and other legal authorities;

2. Maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground;

3. Minimize the quantity of storm water directed to impermeable surfaces and the MS4

4. Minimize pollution emanating from parking lots through the use of appropriate treatment control BMPs and good housekeeping practices;

5. Establish reasonable limits on the clearing of vegetation from the project site including, but not limited to, regulation of the length of time during which soil may be exposed and in certain environmentally critical situations, the prohibition of bare soil;

6. Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from the development site.

Peak Flow Control

The Permittees shall establish and enforce numerical criteria no later than [90 d from permit adoption] to control the post-development peak storm runoff discharge rates in natural drainage systems to maintain or reduce pre-development peak discharge rates to prevent down-stream erosion, and to protect stream habitat.

Standard Urban Storm Water Mitigation Plans

The Permittee shall require that a Standard Urban Storm Water Mitigation Plan as approved by the Regional Board in Board Resolution No. R 00-02 be implemented for the following categories of developments with immediate effect:

a) Single-family hillside residences

b) Ten or more unit homes (includes single family homes, multifamily homes, condominiums, and apartments)

c) A 100,000 or more square feet commercial development

d) A 100,000 or more square feet industrial development

e) Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534, and 7536-7539)

f) Retail gasoline outlets

g) Restaurants (SIC 5812)

h) Parking lots 5,000 square feet or more or with 25 or more parking spaces

The Permittee shall require, no later than [180 days from permit adoption] that a Standard Urban Storm Water Mitigation Plan be implemented for all projects located in or directly adjacent to or discharging directly to an environmentally sensitive area, where, the development will

a) create 2,500 square feet or more of impervious area, or

i) alter the area of imperviousness to ten or more percent of the naturally occurring condition

Numerical Design Criteria

The Permittees shall require that post-construction treatment control BMPs incorporate, at a minimum, the following design criteria to mitigate (infiltrate, filter or treat) storm water runoff:

Volumetric Structural or Treatment Control BMP

a. the 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No.*

87, (1998), or

b. the volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in *California Stormwater Best Management Practices Handbook – Industrial/ Commercial,* (1993), or

c. the volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or

d. the volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event,

AND/ OR

Flow Based Structural or Treatment Control BMP

e. the flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity, or

f. the flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County

g. the flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above,

Applicability of Numerical Design Criteria

The Permittees shall require the following categories of planning priority projects to design and implement post-construction treatment and structural controls to mitigate storm water pollution prior to issuing grading or building permits:

b) Single-family hillside residences

a) Ten or more unit home development (includes single family homes, multifamily homes, condominiums, and apartments)

b) A 100,000 or more square feet commercial development

c) A 100,000 or more square feet industrial development

d) Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534 and 7536-7539)

e) Retail gasoline outlets [suggested criteria: projected gasoline output of 25,000 gallons per month or more; or with four or more fueling islands, or with 24 or more dispensing meters or projected average daily traffic of 100 cars or more or 5,000 square feet or more of surface area]

f) Restaurants (SIC 5812) [5,000 square feet or more]

g) Parking lots 5,000 square feet or more or with 25 or more parking spaces

h) Projects located in, adjacent to, or discharging directly to environmentally sensitive areas that meet area or impervious thresholds identified above.

Each Permittee shall require the implementation of SUSMP and post-construction control requirements for the following categories of development planning projects no later than March 9, 2003, to conform to USEPA Phase II requirements:

c) One acre (40,000 square feet) commercial development

d) One acre (40,000 square feet) industrial development

Urban Storm Water Mitigation Plans

The Permittee shall require a site-specific Urban Storm Water Mitigation Plan for developments not requiring a SUSMP but which may potentially have adverse impacts on post-development storm water quality storm, where the following project characteristics exist:

e) Vehicle or equipment fueling areas;

f) Vehicle or equipment maintenance areas, including washing and repair

g) Commercial or industrial waste handling or storage

h) Outdoor handling or storage of hazardous materials;

i) Hillside location

j) Outdoor manufacturing areas

Redevelopment Projects

The Permittees shall apply the SUSMP, USMP and post-construction storm water mitigation requirements to all projects that undergo significant redevelopment in their respective categories with immediate effect. Significant redevelopment means the creation or addition or replacement of 5,000 square feet of impervious surface area on an already developed site. Where significant redevelopment results in an increase of more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post development storm water quality control requirements, the entire project must be mitigated.

Maintenance Agreement and Transfer

The Permittee shall require that all developments subject to SUSMP and USMP requirements provide verification of maintenance provisions for structural and treatment control BMPs, including but not limited to legal agreements, covenants, CEQA mitigation requirements, and or conditional use permits. Verification at a minimum shall include,

k) The developers signed statement accepting responsibility for maintenance until the responsibility is legally transferred, and either

l) A signed statement from the public entity assuming responsibility for structural or treatment control BMP maintenance and that it meets all local agency design standards, or

m) Written conditions in the sales or lease agreement, which requires the recipient to assume responsibility for maintenance and conduct a maintenance inspection at least once a year, or

n) Written text in project conditions, covenants and restrictions (CCRs) for residential properties assigning maintenance responsibilities to the HomeOwners Association for maintenance of the structural and treatment control BMPs; or

o) Any other firm legally enforceable agreement that assigns responsibility for the maintenance of post-construction structural or treatment control BMPs

Mitigation Funding

The Permittees shall identify no later than [120 d from permit adoption] a funding mechanism[s] and management framework, for endorsement by the Regional Board Executive Officer, to support regional solutions to storm water pollution, where the following situations occur:

p) A waiver for impracticability or threat to ground water is granted

q) External funds are made available

r) Off-site mitigation is required because of loss of environmental habitat

CEQA Document Update

Permittees shall make appropriate modifications to their internal planning procedures for preparing / reviewing CEQA documents, and for linking storm water quality mitigation conditions to all project approvals, with immediate effect

General Plan Update

The Permittees shall update appropriate elements of Permittee General Plans to include watershed and storm water quality and quantity

management considerations with immediate effect [or provide a firm schedule for update no later than 90 d from permit adoption?]. Appropriate elements include, but are not limited to, water quality protection, development goals and policies, open space goals and policies, preservation of and integration with natural features, and water conservation policies.

Targeted Employee Training

Permittees shall train their employees in targeted positions (whose jobs or activities are engaged in development planning) regarding the requirements of the development planning on an annual basis beginning no later than [90 d from permit adoption], and more frequently if necessary.

Developer Technical Guidance and Information

The Permittees shall develop and make available to developers no later than [180 d from permit adoption] development planning guidelines and a technical manual for the siting and design of BMPs. The technical manual shall at a minimum include:

s) Specifications for treatment control BMPs based on flow-based and volumetric water quality design criteria for the purposes of countywide consistency,

t) Criteria for control of peak discharge rates and duration,

u) Expected pollutant removal performance ranges

v) Maintenance considerations

Performance Standards [move to Annual Program Report]

Total number and percent of all development projects reviewed and conditioned to meet SUSMP requirements by category such as residential, commercial, and industrial.

Total square feet of impervious area conditioned for mitigation by development and redevelopment category.

Significant date rewrite completed of General Plan with storm water considerations

Percent and total number of targeted staff trained annually [100 percent]

Date CEQA guidelines revision completed to include storm water mitigation conditions

Date BMP design and sizing technical manual completed and made available electronically

C. Programs for Construction Sites

Each Permittee shall implement a Construction program to:

- reduce pollutants in runoff from all construction sites to the maximum extent practicable

At a minimum the construction program shall address:

- Regulatory mechanism requiring the implementation of proper erosion and sediment controls, and control of other wastes from all construction sites;
- Site plan review and BMP Implementation
- Inspection of construction sites
- Enforcement of control measures at all construction sites
- Have sanctions to ensure compliance (established in the regulatory mechanism)

1. Permittees shall implement storm water pollution prevention and control measures for all construction sites (private or public). The SQMP will be modified by _____ to include activities addressing the following categories:

   a) Large construction sites (greater than five acres)

   b) Medium construction sites (between one and five acres)

   c) Small construction sites (less than one acre)

2. Permittees shall require the preparation, submittal, and implementation of a Storm Water Pollution Control Plan (SWPCP) prior to issuance of a grading permit for construction projects that

meet one of the following criteria:

a) Will result in soil disturbance of one acre or more in size;

b) Is within or discharging directly to or directly adjacent to an environmentally sensitive area or,

c) Is located in a hillside area.

3. Permittees shall prepare and implement a SWPCP on Permittee construction projects, as required above.

4. The SWPCP shall include appropriate construction site BMPs selected from documents such as the California Storm Water BMP Handbook, the Caltrans Storm Water Quality Handbook, Ventura County Stormwater Quality Standard Sheet, EPA database and American Society of Civil Engineers (ASCE) database. In addition, Permittees shall ensure the following minimum requirements are met, to the maximum extent practicable, at construction sites regardless of size:

a) Sediments generated on the project site shall be retained using adequate structural drainage controls;

b) No construction-related materials, wastes, spills, or residues shall be discharged from the project site to streets, drainage facilities or adjacent properties by wind or runoff;

c) Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the project site;

d) Erosion from slopes and channels will be eliminated, by implementing BMPs, including, but not limited to, limiting of grading scheduled during the wet season, inspecting graded areas during rain events, planting and maintenance of vegetation on slopes, and covering erosion susceptible slopes.

5. The SWPCP must include the rationale used for selecting or rejecting BMPs. The project architect, or engineer of record, or authorized qualified designee, must sign a statement on the SWPCP to the effect:

"As the architect/engineer of record, I have selected appropriate BMPs to effectively minimize the negative impacts of this project's construction activities on storm water quality. The project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activity."

The landowner shall sign a statement to the effect:

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/or inaccurate information, failing to update the SWPCP to reflect current conditions, or failing to properly and/or adequately implement the SWPCP may result in revocation of grading and/or other permits or other sanctions provided by law."

The SWPCP certification shall be signed by the landowner as follows:

(1) For a corporation: by a responsible corporate officer which means (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of the construction activity if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

(2) For a partnership or sole proprietorship: by a general partner or the proprietor; or

(3) For a municipality or other public agency: by an elected official, a ranking management official (e.g.,

County Administrative Officer, City Manager, Director of Public Works, City Engineer, District Manager), or the manager of the construction activity if authority to sign SWPCPs has been assigned or delegated to the manager in accordance with established agency policy.

6. Permittees shall require proof of filing a Notice of Intent (NOI) for coverage under the State General Construction Activity Storm Water Permit and a copy of the SWPPP prior to issuing a grading permit for all projects requiring coverage under the state general permit. The prepared SWPPP may satisfy the requirement under D.2. (in-lieu of SWPCP).

   The Permittees shall require proof of NOI and a copy of the SWPPP at any time a transfer of ownership takes place for the entire development or portions of the common plan of development where construction activities are still on-going.

7. Permittees shall inspect medium and large construction sites with SWPCPs (or SWPPPs) for storm water quality requirements during routine inspections a minimum of once during the wet season. The SWPCP (or SWPPP) shall be reviewed for compliance to the maximum extent possible. For inspected sites that have not adequately implemented their SWPCP (or SWPPP), a follow-up inspection to ensure compliance will take place within 2 weeks. If compliance has not been attained, the Permittee will take additional administrative (or other mechanisms, as specified in the Municipal Code) steps to achieve compliance. If compliance has not been achieved, and the site is covered under the State General Construction Activity Storm Water Permit, the Permittees will enforce first their local ordinance requirements and if non-compliance continues the Regional Board shall be notified for further joint enforcement actions.

8. For small construction sites, the Permittees shall require the implementation of a minimum set of BMPs to prevent pollution and control storm water runoff discharges to the maximum extent practicable. The Permittees shall prioritize their inspection strategy and frequencies based on suitable criteria and submit it with the Annual Report subject to EO's approval.

9. Permittees shall continue an educational program to discuss storm water pollution prevention and controls at construction sites and

distribute educational materials targeted to the construction community during meetings, workshops, and as appropriate.

10. Permittees shall train employees in targeted positions (whose jobs or activities are engaged in construction activities including construction inspection staff) regarding the requirements of the storm water management program by *(six months from permit adoption)*, and annually thereafter.

PERFORMANCE STANDARDS AND REPORTING

- Medium and Large construction sites (including sites under General Construction Permit, adjacent to environmentally sensitive areas, and additional sites as designated by Permittees) inspected minimum once during each wet season.
- Annually, a minimum 20% of the inspected sites shall be subject to a thorough review of the SWPCP (and/or SWPPP) and BMP implementation status
- Small construction sites as proposed by Permittees and subject to EO's approval

Reporting and progress

- At the start of the permit a baseline will be established (total number of targeted sites in each category based on the Permittees permit tracking system)
- From that baseline number a scheduling will be developed: inspection to 100% of the baseline per year for Large and Medium sites, inspection of small sites as proposed by Permittees and approved by EO
- The Annual Report will reflect the baseline and the progress for that respective year (and for each additional year cumulative progress also)
- In the Annual Report it will be reported the number of enforcement actions and follow-up inspections of non-compliant sites and a cumulative progress report kept during subsequent years of the permit
- The Annual Report will reflect the number of SWPCP (and/or SWPPPs) reviewed and findings associated with this task (any enforcement, correction actions, etc...)
- Related training activities performed will be reported annually

Program for Public Agency Activities [RESERVED]

D. Program to Eliminate Illicit Connections and Discharges

Permittees shall eliminate all illicit connections and illicit discharges to the storm drain system, and shall document and report all such cases. To accomplish this, the Permittees shall revise their Program for Elimination of Illicit Connection and Illicit Discharge (IC/ID Program) within the SQMP by _____. This revision, which is subject to the approval of the Executive Officer, must contain the following minimum elements, including performance measures and schedules.

1. General Elements

a) Geographic Information System (GIS): Complete, by _____, a comprehensive GIS, that will allow the Lead Permittee to manage and track all non-storm water discharges into the storm drain system. Among other attributes, the comprehensive GIS shall be designed to show the entire storm drain system, to identify owners and operators for all segments of the storm drain system, and to precisely locate all permitted discharges.

b) Training: Complete, by _____, refresher training for all targeted employees who are responsible for identification, investigation, termination, cleanup, and reporting of illicit connections and discharges.

c) Documentation and Reporting: Document and report all illicit connections, illicit discharges, and hazardous substances that enter the storm drain, within _____.

2. Illicit Connection Elements

a) Baseline Screening: Permittees shall continue to screen the storm drain system for illicit connections during scheduled infrastructure maintenance. On an annual basis, Permittees shall report, to the Lead Permittee, on the location and length of open channels or closed storm drains that have been screened, and on the status of suspected, confirmed, and terminated illicit connections.

b) Priority Screening: In addition to the baseline screening that will occur during regularly scheduled maintenance, Permittees shall design and implement a proactive storm drain screening of priority areas. Priority areas shall be determined, by _____, by applying various factors, among which shall include: an analysis of all illicit connections discovered and reported since June 18, 1990 (under reporting requirements set forth in the two permits antecedent to this permit), with the purpose of identifying clusters or areas with illicit connection problems; and a review of documentation of storm drain connections made [in the six months following the 1994 Northridge Earthquake, in the year following the 1992 civil unrest, others?].

c) Investigation: Upon discovery through either baseline or priority screening, or upon receiving a report of a suspected illicit connection, Permittees shall initiate an investigation within ____ hours, to determine the source of the connection, the nature and volume of discharge through the connection, and the responsible party for the connection.

d) Termination: Upon confirmation of the illicit nature of the discharge, Permittees shall ensure termination of the discharge and connection within ____ days, using enforcement authority as needed.

3. Illicit Discharge Elements

a) Abatement and Cleanup: Respond, within ____ hours of discovery or a report of a suspected illicit discharge, with activities to abate, contain, and clean up all illicit discharges, including hazardous substances.

b) Investigation: As soon as practicable, during or immediately following containment and cleanup activities, determine the nature and volume of the discharge, source and cause, and responsible party, and take enforcement action as appropriate.

22 March 2001 ***DRAFT***

Regional Board staff's ideas for permit renewal with respect to Construction Activity.

Construction sites less than 1 acre:

• N.O.I. prior to a municipal grading permit	No
• Baseline BMPs or local SWPPP (approval of local SWPPP)	Yes, if local SWPPP
• Wet weather inspections based upon a municipal prioritization (i.e. slopes vs. flat areas)	Optional
• Municipal grading permits tracked (GIS or database)	Yes
• Municipal oversight of site operators	Yes

Construction sites less than 1 Acre (impaired waterbody)

• N.O.I. prior to a municipal grading permit (keep copy of NOI)	**If city requests**
• Baseline BMPs or local SWPPP (approval of local SWPPP)	**Yes**
• Wet weather inspections	**Yes**
• Municipal grading permits tracked (GIS or database)	Yes
• Municipal oversight of site operators	Yes

Construction sites between 1 acre and less than 5 acres

• N.O.I. prior to a municipal grading permit (keep copy of NOI)	**Yes, in 2003**
• Baseline BMPs or local SWPPP (approval of local SWPPP)	**Yes**
• Wet weather inspections	**Yes**
• Municipal grading permits tracked (GIS or database)	Yes
• Municipal oversight of site operators	Yes

Construction sites 5 acres and greater (1 acre and greater in 2003)

• N.O.I. prior to a municipal grading permit (keep copy of NOI)	**Yes**
• Local SWPPP – equivalent to state SWPPP (approval of SWPPP)	**Yes**
• Wet weather inspections	**Yes**
• Municipal grading permits tracked (GIS or database)	Yes
• Municipal oversight of site operators	Yes

GIS: AN ESSENTIAL TOOL IN DEVELOPING A COMPREHENSIVE STORM WATER MANAGEMENT PROGRAM

Regional Board staff considers the use of GIS as an important and essential component in the developing, progress and evaluating the storm water management programs. The use of geographical data combined with layers of other meaningful data can enhance and optimize the efforts of the activities performed for compliance with the MS4 permit.

GIS also can be used to track progress, identify gaps and pinpoint areas of concern that may be used to focus the efforts of limited resources. Many times geographical data combined with other layers of information can reveal surprising new knowledge of information from disparate or uncorrelated before pieces of information.

We consider GIS crucial as an aid tool in the IC/ID tool, catchbasins inventory, industrial/ commercial and construction sites inventory. These tools can be used to identify, organize, prioritize and keep track of activities and present progress to the permitting authority.

(e) The need for developing housing within the region.

(f) The need to develop and use recycled water.

- 13242. Implementation

The program of implementation for achieving water quality objectives shall include, but not be limited to:

(a) A description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private.

(b) A time schedule for the actions to be taken.

(c) A description of surveillance to be undertaken to determine compliance with objectives.

- 13243. Discharge of waste

A regional board, in a water quality control plan or in waste discharge requirements, may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.

- 13244. Hearing requirements

The regional boards shall not adopt any water quality control plan unless a public hearing is first held, after the giving of notice of such hearing by publication in the affected county or counties pursuant to Section 6061 of the Government Code. When the plan proposes to prohibit discharges of waste pursuant to Section 13243, similar notice shall be given by publication pursuant to Section 6061.3 of the Government Code.

- 13245. Approval by the state board

A water quality control plan, or a revision thereof adopted by a regional board, shall not become effective unless and until it is approved by the state board. The state board may approve such plan, or return it to the regional board for further consideration and resubmission to the state board. Upon resubmission the state board may either approve or, after a public hearing in the affected region, revise and approve such plan.

- 13245.5. Approval of guidelines

Guidelines adopted by a regional board shall not become effective unless and until approved by the state board.

- 13246. Time for approval

The state board shall act upon any water quality control plan within 60 days after the regional board has submitted such plan to the state board, or 90 days after resubmission of such plan.

- 13247. Compliance with plans

State offices, departments, and boards, in carrying out activities which may affect water quality, shall comply with water quality control plans approved or adopted by the state board unless otherwise directed or authorized by statute, in which case they shall indicate to the regional boards in writing their authority for not complying with such plans.

Article 4. Waste discharge requirements

- 13260. Reports; fees; exemptions

(a) All of the following persons shall file with the appropriate regional board a report of the discharge, containing the information which may be required by the regional board:

(1) Any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system.

(2) Any person who is a citizen, domiciliary, or political agency or entity of this state discharging waste, or proposing to discharge waste, outside the boundaries of the state in a manner that could affect the quality of the waters of the state within any region.

(3) Any person operating, or proposing to construct, an injection well.

(b) No report of waste discharge need be filed pursuant to subdivision (a) if the requirement is waived pursuant to Section 13269.

(c) Every person subject to subdivision (a) shall file with the appropriate regional board a

report of waste discharge relative to any material change or proposed change in the character, location, or volume of the discharge.

(d) (1) Each person for whom waste discharge requirements have been prescribed pursuant to Section 13263 shall submit an annual fee not to exceed ten thousand dollars ($10,000) according to a reasonable fee schedule established by the state board. Fees shall be calculated on the basis of total flow, volume, number of animals, or area involved.

(2) (A) Subject to subparagraph (B), any fees collected pursuant to this section shall be deposited in the Waste Discharge Permit Fund which is hereby created. The money in the fund is available for expenditure by the state board, upon appropriation by the Legislature, for the purposes of carrying out this division.

(B) (i) Notwithstanding subparagraph (A), the fees collected pursuant to this section from storm water dischargers that are subject to a general industrial or construction storm water permit under the national pollutant discharge elimination system (NPDES) shall be separately accounted for in the Waste Discharge Permit Fund.

(ii) Not less than 50 percent of the money in the Waste Discharge Permit Fund that is separately accounted for pursuant to clause (i) is available, upon appropriation by the Legislature, for expenditure by the regional board with jurisdiction over the permitted industry or construction site that generated the fee to carry out storm water programs in the region.

(iii) Each regional board that receives money pursuant to clause (ii) shall spend not less than 50 percent of that money solely on storm water inspection and regulatory compliance issues associated with industrial and construction storm water programs.

(3) Any person who would be required to pay the annual fee prescribed by paragraph (1) for waste discharge requirements applicable to discharges of solid waste, as defined in Section 40191 of the Public Resources Code, at a waste management unit that is also regulated under Division 30 (commencing with Section 40000) of the Public Resources Code, and who is or will be subject to the fee imposed pursuant to Section 46801 of the Public Resources Code in the same fiscal year, shall be entitled to a waiver of the annual fee for the discharge of solid waste at the waste management unit imposed by paragraph (1) upon verification by the state board of payment of the fee imposed by Section 48000 of the Public Resources Code, and provided that the fee established pursuant to Section 48000 of the Public Resources Code generates revenues sufficient to fund the programs specified in Section 48004 of the Public Resources Code and the amount appropriated by the Legislature for those purposes is not reduced.

(e) Each report of waste discharge for a new discharge submitted under this section shall be accompanied by a fee equal in amount to the annual fee for the discharge. If waste discharge requirements are issued, the fee shall serve as the first annual fee. If waste discharge requirements are waived pursuant to Section 13269, all or part of the fee shall be refunded.

(f) (1) On or before January 1, 1990, the state board shall adopt, by emergency regulations, a schedule of fees authorized under subdivisions (d) and (j). The total revenue collected each year through annual and filing fees shall be set at an amount equal to the revenue levels set forth in the Budget Act for this activity. The state board shall automatically adjust the annual and filing fees each fiscal year to conform with the revenue levels set forth in the Budget Act for this activity. If the state board determines that the revenue collected during the preceding year was greater than, or less than, the revenue levels set forth in the Budget Act, the state board may further adjust the annual filing fees to compensate for the over and under collection of revenue.

(2) The emergency regulations adopted pursuant to this subdivision, or subsequent adjustments to the annual fees, shall be adopted by the state board in accordance with Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code. The adoption of these regulations is an emergency and shall be considered by the Office of Administrative Law as necessary for the immediate preservation of the public peace, health, safety, and general welfare. Notwithstanding Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code, any emergency regulations adopted by the state board, or adjustments to the annual fees made by the state board pursuant to this section, shall not be subject

CALIFORNIA CODE OF REGULATIONS
TITLE 23. Division 3. Chapter 9. Waste Discharge Reports and Requirements
Article 1. Fees

§2200. Annual Fee Schedule

(a)(1) Each person for whom waste discharge requirements have been prescribed pursuant to section 13263 of the Water Code shall submit, to the State Board, an annual fee in accordance with the following schedule, except as provided in subdivisions (b), (c), (d), (e) or (f). The fee shall be submitted for each waste discharge requirements order issued to that person.

ANNUAL FEE SCHEDULE

TTWQ and CPLX[1] RATING	PROGRAM TYPE		
	NPDES[2]	NON-CHP 15 WDR[3]	CHP-15 WDR[4]
1-A	$10,000	$10,000	$10,000
1-B	7,000	5,500	7,500
1-C	5,500	3,000	6,000
2-A	4,000	2,000	5,000
2-B	2,000	1,200	4,000
2-C	1,200	900	3,000
3-A	1,000	750	2,000
3-B	750	400	1,500
3-C	400	200	750

[1] TTWQ is the acronym for Threat to Water Quality and CPLX is the acronym for Complexity.

[2] National Pollutant Discharge Elimination System (NPDES) permits are issued to point source discharges of pollutants to surface waters and are issued pursuant to Water Code Chapter 5.5 which implements the federal Clean Water Act. Examples include, but are not limited to, public wastewater treatment facilities, industries, power plants, and ground water cleanups discharging to surface waters.

[3] Non-Chapter 15 Waste Discharge Requirements (Non-Chap 15 WDRs) are those discharges of waste to land which are regulated through waste discharge requirements issued pursuant to Water Code Section 13263 that do not implement the requirements of Chapter 15 of Division 3 of Title 23. Examples include, but are not limited to, wastewater treatment plants, erosion control projects, and septic tank systems.

[4] Chapter 15 Waste Discharge Requirements (Chap 15 WDRs) are those discharges of waste to land which are regulated through waste discharge requirements issued pursuant to Water Code Section 13263 that implement the requirements of Chapter 15 of Division 3 of Title 23. Examples include, but are not limited to, landfills–both active and closed–and mining operations.

(2) The fee rating is based on the discharge's threat to water quality (TTWQ) and complexity (CPLX), defined as follows:

THREAT TO WATER QUALITY

Category "1"–Those discharges of waste which could cause the long-term loss of a designated beneficial use of the receiving water. Examples of long-term loss of beneficial use would include the loss of a drinking water supply, the closure of an area used for water contact recreation, or the posting of an area used for spawning or growth of aquatic resources, including shellfish and migratory fish.

Category "2"–Those discharges of waste which could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance.

Category "3"–Those discharges of waste which could degrade water quality without violating water quality objectives, or cause a minor impairment of designated beneficial uses compared with Category 1 and Category 2.

COMPLEXITY

Category "A"–Any major NPDES discharger; any discharge of toxic wastes; any small volume discharge containing toxic waste or having numerous discharge points or ground water monitoring; any Class I waste management unit.

Category "B"–Any discharger not included above which has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class II or Class III waste management units.

Category "C"–Any person for whom waste discharge requirements have been prescribed pursuant to Section 13263 of the Water Code not included as a Category "A" or Category "B" as described above. Included would be discharges having no waste treatment systems or that must comply with best management practices, discharges having passive treatment and disposal systems, such as septic systems with subsurface disposal systems, or dischargers having waste storage systems with land disposal.

(3) Municipal dischargers with approved pretreatment programs shall be subject to a surcharge of $3,800.

(b) NPDES permits for areawide urban storm water discharges, as defined by the United States Environmental Protection Agency (USEPA, 40 CFR Part 122), for areas with a population greater than 100,000 persons shall be subject to an annual fee of $10,000. NPDES permits for areawide urban storm water discharges, as defined by USEPA, for areas with a population less than 100,000 persons shall be subject to an annual fee of $5,000. A public entity which lies within more than one Region shall be subject to an annual fee based upon its total population without regard to the number of areawide urban storm water permits issued by a Regional Board.

(c)(1) Storm water discharges that are regulated by a general (NPDES) storm water permit and which discharge into a municipal separate storm water sewer system regulated by an areawide urban storm water permit shall pay an annual fee of $250.00.

(2) All other storm water discharges that are regulated by a general (NPDES) storm water permit shall pay an annual fee of $500.00.

(3) An amount equal to the fee prescribed in subdivisions (1) and (2) above shall be submitted with the discharger's Notice of Intent (NOI) to be regulated under a general (NPDES) permit and shall serve as the first annual fee. For the purposes of this section, a Notice of Intent (NOI) submitted is considered to be a report of waste discharge.

(4) Facilities required to have a (NPDES) storm water permit and that are regulated by waste discharge requirements adopted pursuant to Water Code Section 13263 shall be exempt from the annual fee for regulation of storm water discharges.

(5) The annual fee for persons who discharge storm water pursuant to an individual NPDES permit prescribed by a Regional Board pursuant to Water Code Section 13263 shall be based on the discharge's TTWQ and CPLX as provided in subdivision (a)(2).

(d) The annual fee for persons whose discharges are regulated by a general NPDES permit or a general waste discharge requirements issued by the State Board or a Regional Board (excluding storm water permits) shall be based on the TTWQ and CPLX of the discharge. All discharges that are subject to a given permit shall pay the same fee.

(e) "Dredge and Fill Operations Fees" Fees for fill or dredge operations shall be assessed as follows:

Fill: One acre or less, flat fee of $1,000.
More than one acre, $1,000 per acre or part thereof (not to exceed statutory maximum).

Dredge: Less than 10,000 cubic yards, flat fee of $500.
10,000 to 20,000 cubic yards, flat fee of $2,000.
More than 20,000 cubic yards, $2,000 plus $250 for each additional 5,000 cubic yards or part thereof (not to exceed the statutory maximum).

(f) Dischargers who own or operate confined animal feedlots, including dairies, shall not be assessed an annual fee for waste discharge requirements regulating those operations. They shall pay a filing fee of $2,000 which shall be submitted with each report of waste discharge or NOI. If waste discharge requirements are waived pursuant to section 13269 of the Water Code, all or a portion of the filing fee will be refunded in accordance with Section 2200.4.

NOTE: Authority cited: Sections 185 and 1058, Water Code. Reference: Section 13260, Water Code.

Section 2200.1

The State Board shall notify each discharger annually of the fee to be submitted, the basis upon which the fee was calculated, and the date upon which the fee is due.

NOTE: Authority cited: Sections 185 and 1058, Water Code. Reference: Section 13260, Water Code.

Section 2200.2

Persons proposing a new discharge shall submit to the Regional Board a report of waste discharge accompanied by a fee equal in amount to the annual fee based on the discharge's TTWQ and CPLX as specified in subsection (a)(2). This fee shall serve as the first annual fee. If the submittal of this first annual fee does not coincide with the current fiscal year billing cycle, then the next, and only the next, fiscal year billing shall be adjusted to account for the payment of a full annual fee that accompanied the discharger's report of waste discharge. Persons proposing a material change in an existing discharge are not required to submit a fee with the report of waste discharge.

NOTE: Authority cited: Sections 185 and 1058, Water Code. Reference: Section 13260, Water Code.

Section 2200.3

Failure to pay the annual fee is a misdemeanor and will result in the Regional Board seeking the collection of fees through the enforcement provisions provided pursuant to Water Code section 13261.

NOTE: Authority cited: Sections 185 and 1058, Water Code. Reference: Section 13260, Water Code.

Section 2200.4

Any refund made pursuant to section 13260(e) or for any other reason, shall withhold sufficient funds to cover actual staff time spent in reviewing the report of waste discharge which shall be calculated using a rate of $50.00 per hour.

NOTE: Authority cited: Sections 185 and 1058, Water Code. Reference: Section 13260, Water Code.

DRAFT - SIGNIFICANT CHANGES PROPOSED TO THE PIPP

The objectives of the Los Angeles County comprehensive educational storm water and urban runoff outreach program are to measurably increase public knowledge and change behavior regarding storm water pollution. The first five-year public education plan was successful at segmenting Los Angeles County residents to determine those who pose the greatest threat to storm water quality and those who represent the greatest opportunity to respond to a public education program and at providing a baseline measurement of residents' storm water-related practices and habits. This information was used to target the residents who are most likely to change their behaviors to improve storm water quality. Using various communication tactics and activities, the program successfully reached 83% of County residents with pollution prevention messages (Five-Year Storm Water Public Education Strategic Analysis).

In the ROWD, the County proposed to continue implementation of the program with no significant changes, and the possibility of alterations after the final evaluation is complete in the summer of 2001. The Regional Board agrees that the Program has been successful at certain goals and should be continued. However, since the program has been gaining efficiency over the past five years and resources are no longer needed for basic program development, the program can be taken to the next level. For example, coordination among Permittees and targeting watershed-specific pollutants, are necessary to educate the public about priority storm water issues and reduce the problems caused. Significant changes and their justifications are outlined below.

The County also implemented an Industrial/Commercial site visit program during the last permit. They were required to visit Phase I industrial facilities, auto repair shops, retail gasoline outlets, and restaurants. This program will be upgraded to an inspection program.

PROGRAM FOR RESIDENTS

- **NEW REQUIREMENT:**
  The Principal Permittee shall organize Public Outreach Strategy meetings with all Co-permittees on a quarterly basis. The Principal Permittee shall provide guidance for Co-permittees to augment the regional outreach and education program. Co-permittees shall coordinate regional and local outreach and education to reduce duplication of efforts.

  JUSTIFICATION:
  - This requirement is based on the need for coordination between all Permittees. Since the Program inception, Permittees have been required to conduct education activities within their own jurisdictions. The lack of guidance and coordination has led to duplicate efforts and confusion about developing appropriate programs that are consistent with and augment the Principal Permittee's regional education program. This requirement will ensure that all Permittees are coordinated for the most efficient and effective Program. It will also help identify Permittees with insufficient Programs.

  - The Storm Water Phase II Fact Sheet 2.3 states that it is generally more cost-effective to have numerous operators coordinate to use an existing program than

all developing their own local programs. Therefore, Permittees should build on the regional program with additional information specific to local needs.

- **NEW REQUIREMENT:**
  The Principal Permittee and Co-permittees shall coordinate to develop outreach programs that target the watershed-specific pollutants listed in Table 1 within 6 months of the permit adoption date. It may be appropriate to address metals in the Industrial/Commercial businesses program. Region-wide pollutants may be included in the Principal Permittee's mass media efforts.

Table 1. Target Pollutants for Outreach

Watershed	***Target Pollutants for Outreach***
Ballona Creek	Trash*, Coliform*, Metals*
Malibu Creek	Trash*, Nutrients*, Coliform*
Los Angeles River	Trash*, Nutrients (Nitrogen)*, Coliform*, Metals*, Pesticides*
San Gabriel River	Trash*, Nutrients (Nitrogen)*, Coliform*, Metals*
Dominguez Channel	Trash*, Coliform*

JUSTIFICATION:

- This requirement will allow the Program and/or local efforts to focus on target pollutants. Citizens must be aware of priority pollutants and their causes for any improvement to occur. Page 3 of the SQMP states that the components within the phases that roll-out over the next four years will be fluid to reflect the evolving message for each targeted audience. This implies that the Permittee realizes the need to target pollutants and specific audiences and had already planned to address this.

- Fact Sheet 2.3 states that municipalities should strive to make their materials and activities relevant to local situations and issues, and to incorporate a variety of strategies to ensure maximum coverage. It also recommends directing materials or outreach programs toward specific groups of commercial, industrial, and institutional entities likely to have significant storm water impacts.

- This is a necessary step in the implementation of current and future TMDLs.

- Although it may not be appropriate to target heavy metals through the Program for Residents, it may be accomplished through the site inspection program. The Industrial/Commercial Program will prioritize facilities by their threat to water quality and whether or not they generate pollutants for which the water body is impaired, so it will be consistent with this requirement and Table 1.

PROGRAM FOR BUSINESSES

- **NEW REQUIREMENT:**
  The Principal Permittee shall develop and implement a corporate outreach program for target industrial/commercial businesses.

JUSTIFICATION:

- Facility owners and representatives at the corporate level are not typically present during site visits or inspections. They need to be educated about

applicable storm water regulations so they can set rules and direct management to ensure compliance at the facility level.

- **NEW REQUIREMENT:**
  Permittees shall develop and implement a Business Assistance Program.

  JUSTIFICATION:
  - Many small businesses do not have the resources or expertise necessary to understand and implement storm water regulations. A non-regulatory assistance program that educates businesses about pollution prevention will help them comply and cut costs, so they can continue to be competitive. Hiring consultants and implementing structural BMPs can put many small operators out of business.

  - The City of Los Angeles has been implementing a successful business outreach program through the Hazardous and Toxic Materials Office since 1988.

  - Fact Sheet 2.3 recommends directing materials or outreach programs toward specific groups of commercial, industrial, and institutional entities likely to have significant storm water impacts.

  - Alternative funding sources, such as grants and loans may be available to fund such a program.

PERFORMANCE STANDARDS

- **NEW PERFORMANCE STANDARD:**
  The Discharger shall ensure that a minimum of 50 million impressions per year are made on the general public about storm water via print, local TV access, local radio, or other appropriate media.

  JUSTIFICATION:
  - According to the Principal Permittee's Year Four (1999-2000) Highlights, approximately 85 million impressions were made through advertising, media relations, customized coffee jackets, corporate partnerships, special events, and business outreach. Hits on the www.888CleanLA.com website have been consistently increasing, indicating a greater public interest, as well as impressions. It can be anticipated that mass media coverage will become more efficient after the final Program study is complete in the summer of 2001. Also, Increased media attention and public interest in current issues such as trash TMDLs is expected. Therefore, it is expected that the Principal Permittee can easily accomplish the required level of impressions.

  - The requirement is consistent with the number of impressions required in the City of Long Beach Municipal Storm Water Permit Order (99-060) and the Ventura County Municipal Storm Water Permit (Order 00-XXX). The City of Long Beach is required to make a minimum of 1.5 million impressions per year. With a total population of approximately 426, 000 people, they must impress each person approximately 3.5 times per year. Ventura County is also required to impress every resident approximately 3 times. The 11.4 million people in Los Angeles County must be impressed approximately 4.3 times per year. The requirement is

slightly higher than that of the City of Long Beach and Ventura County due to the County's previous accomplishments referenced above. Also, the County has an established successful Program and has had opportunities to evaluate and improve its effectiveness and reach a greater number of people without increasing resources.

- **NEW PERFORMANCE STANDARD:**
  The Discharger shall provide all Unified School Districts within its jurisdiction with materials, including videos, live presentations, brochures, and other media necessary to educate a minimum of 50 percent of all school children (K-12) every 2 years on storm water pollution. All Co-permittees shall cooperate with funding and implementing this requirement. Cooperative efforts with other agencies may also be used to accomplish this requirement.

  JUSTIFICATION:
  - This requirement is consistent with the City of Long Beach Municipal Storm Water Permit.

  - It is also justified by the performance of Los Angeles County's School Environmental Education Program. According to data provided by the County, the Program has been reaching approximately 50 percent of elementary and secondary schools in the County every 2 years. It is also expected that the required coordination among permittees will increase the effectiveness and range of this Program.

Proposed Agenda[1]
Working Group to Review Preliminary Permit Draft

Thursday, March 22, 2001, 10:00 to 2:00

City of Los Angeles, Bureau of Sanitation
Storm Water Management Office
650 S. Spring Street
7th Floor

1.	Make introductions, review agenda, etc.	Everyone
2.	Followup from meeting on March 20th	
	Discuss need for GIS as an analytical tool	Dan (and Eduardo Escobar?)
	Brief permittees on status of legal research	Wendy
3.	Review Special Provisions and respond to Permittees' comments on programs for:	Regional Board, with Permittees comments
	IC/ID Elimination	Wendy
	Public Education	Megan
	Construction Sites	Carlos
	Industrial/Commercial Inspections	Dan
	Watersheds	Dan
	Planning and Land Development – if time allows	Xavier
3	Review other key provisions and respond to Permittees' comments on:	Xavier
	TMDL provision – to be added.	
	WMAPs – to be eliminated?	
	Administrative review procedure – to be eliminated.	
4	Discuss next steps	Mustafa and Wendy

[1] Given time restrictions, Special Provisions for Planning and Land Development may be deferred to future meetings. Also, Public Agency Activities is being deferred to a later date.

[illegible] SHEET

[illegible] Joint [illegible] Meeting

1. Laura Gentile, US EPA Region 9, (via teleconference)		
2. Dan Radulescu, LA RWQCB		213 576 6668
3. Megan Fisher	RWQCB	213 576-6790
[illegible]	[illegible]	626-458-[illegible]
[illegible]	[illegible]	[illegible]
6. Eduardo Escobar	LACDPW	626 458-4355
[illegible]	LACDPW	[illegible]
[illegible]	[illegible]	626-458-[illegible]
Carlos Urrunaga	RWQCB-LA	213 576-6655
Ed Schroeder	Signal [illegible]	562 [illegible]-7355
[illegible]	[illegible]	[illegible]
MORAD SEDRAK	City of LA, Stormwater	(213) 847-6353
[illegible]	City of Palos Verdes Estates	310-378-0383
[illegible] Phillips	Rg Bd	213 576 6618
Xavier	RWQCB	213-576-6654
Kimberly Zyman	LACDPW	(626) 458-6533
WENDELL JOHNSON	CITY OF TORRANCE	310 618-2820
Heather Merenda	City of Calabasas	818) 878-[illegible] x293

R0001526

22 March 2001 ***DRAFT***

Regional Board staff's ideas for permit renewal with respect to Construction Activity.

Construction sites less than 1 acre:

• N.O.I. prior to a municipal grading permit	No
• Baseline BMPs or local SWPPP (approval of local SWPPP)	Yes, if local SWPPP
• Wet weather inspections based upon a municipal prioritization (i.e. slopes vs. flat areas)	Optional
• Municipal grading permits tracked (GIS or database)	Yes
• Municipal oversight of site operators	Yes

Construction sites less than 1 Acre (impaired waterbody)

• N.O.I. prior to a municipal grading permit (keep copy of NOI)	**If city requests**
• Baseline BMPs or local SWPPP (approval of local SWPPP)	**Yes**
• Wet weather inspections	**Yes**
• Municipal grading permits tracked (GIS or database)	Yes
• Municipal oversight of site operators	Yes

Construction sites between 1 acre and less than 5 acres

• N.O.I. prior to a municipal grading permit (keep copy of NOI)	**Yes, in 2003**
• Baseline BMPs or local SWPPP (approval of local SWPPP)	**Yes**
• Wet weather inspections	**Yes**
• Municipal grading permits tracked (GIS or database)	Yes
• Municipal oversight of site operators	Yes

Construction sites 5 acres and greater (1 acre and greater in 2003)

• N.O.I. prior to a municipal grading permit (keep copy of NOI)	**Yes**
• Local SWPPP – equivalent to state SWPPP (approval of SWPPP)	**Yes**
• Wet weather inspections	**Yes**
• Municipal grading permits tracked (GIS or database)	Yes
• Municipal oversight of site operators	Yes

- coordination of activities

~~WJ Hattenauer~~
WS Bromley
a narrow + disappointing reply.. in lieu of suggesting what is possible...
as

Executive Advisory Committee
Stormwater Program - Los Angeles County

March 22, 2001

Ms. Alexis Strauss
Director, Water Division
United States Environmental
Protection Agency-Region IX
San Francisco, CA 94105-3901

Dear Ms. Strauss:

LETTER DATED DECEMBER 19, 2000, TO DENNIS DICKERSON

Your December 19, 2000. letter to Dennis Dickerson recommends that the Los Angeles Regional Water Quality Control Board require that the Los Angeles County Municipal Stormwater Permittees be required to conduct inspections and enforcement of State permitted commercial and industrial facilities. As you point out, the current permit requires educational site visits of some permitted industrial/commercial facilities. However, it does not require nor contemplate that the Permittees be responsible for enforcement of compliance of State-issued permits. The Permittees lack the statutory authority to inspect and enforce facilities permitted by agencies other than them selves. ?

Los Angeles County Permittees are fully committed to enforcing their local ordinances for stormwater pollution control. The Permittees are sympathetic to the fact that the Regional Board does not have sufficient resources to enforce permits issued by them but are not in a position to legally assume the Regional Board's statutory responsibilities. The Permittees are also dealing with limited financial resources and have less capacity than the Regional Board to undertake this responsibility were it to be legally possible.

We trust that you will reconsider your recommendation. Should you wish to discuss this matter further, you are welcome to attend an Executive Advisory Committee (EAC) meeting. The EAC meets at 1:30 p.m. on the second Wednesday of each month in the 12th floor conference room of the Los Angeles County Department of Public Works, at 900 S. Fremont Avenue, in the city of Alhambra.

Very truly yours,

Desi Alvarez
Chairman
Executive Advisory Committee

DA:sv
WM-9/A:\EAC_LETTER.WPD

cc: All Permittees
Regional Water Quality Control Board Members

March 23, 2001

Ms. Christine Todd-Whitman
Administrator
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Region IX USEPA – Local Inspection Recommendation

Dear Ms. Todd-Whitman:

The City of La Cañada Flintridge would like to request clarification on a recent letter sent by Ms. Alexis Strauss, Director of the Water Division, for USEPA Region IX. A copy of the December 19, 2000 letter is attached for your review. The letter was sent as USEPA guidance to Dennis A. Dickerson, the Executive Officer of the California Water Quality Control Board, Los Angeles Region.

The December 19th letter states that USEPA's position requires that the MS4 permittees (the cities) in Los Angeles County assume legal and funding responsibilities for performing storm water compliance inspections for all State permitted industrial and commercial facilities within their boundaries. The correspondence is explained as a "letter of support to the Regional Board" for the shifting of inspection responsibilities and costs.

The December 19th letter concludes that USEPA "recommends" that the State require the cities "implement an effective enforcement program" in the next NPDES permit. The December 19th letter states that "storm water regulations envision a cooperative effort on the part of the NPDES permitting authority (the State) and permitted MS4s (the cities) in the implementation of the industrial storm water program".

There are several concerns that we have with the letter. The first concern is that no one at USEPA contacted the cities to discuss their proposed new inspection requirements. This is far from the cooperative effort that the USEPA regulations envision. The cities were not even aware of the October 5, 2000, meeting and were not invited to participate to express their concerns.

The second concern is that cities believe that USEPA failed to mention a major problem with the California program – the State's refusal to fully fund industrial/commercial inspection programs.

1327 Foothill Boulevard • La Cañada Flintridge • California 91011-2137 • (818) 790-8880 • FAX: (818) 790-7536

The State is in the position to fully fund programs since the State is running billion dollar surpluses, even after paying for electricity contracts. The State receives fees ranging from $250 to $10,000 per permit to help fund their inspection program. These fees appear adequate to fund a regular inspection program.

The shifting of new inspection responsibilities to the cities is especially egregious, since the cities have absorbed over $3.4 billion in annual property tax losses from the State since 1992. This drain of local property taxes has weakened the cities' ability to fund existing municipal services for their growing populations, much less new storm water inspection programs.

Ms. Strauss believes that the main support for shifting the inspection and enforcement responsibilities is the Clean Water Act definition of "storm water sewers". As you are aware, dry climate cities have a particular hardship with the application of Section 402 permits. In particular, the cities in my Congressional District do not operate "storm sewer systems" with centralized treatment facilities like many eastern cities.

The western climate and typography dictated in the 1930's that urban storm drain systems control rainfall in multiple areas, due to high rates of rain over short periods of time. The western systems are "flood control facilities" and not "storm sewers". The goal of a flood control system is to transport rainfall to the rivers and water bodies as quick as possible. Storm water is discharged into hundreds of localized areas along short reaches of flood control channels and rivers.

The Los Angeles County "flood control" system was designed with the primary responsibility to prevent localized flooding of residences and businesses, which occurred with regularity prior to the construction of the system. We were all reminded of the critical importance of this specialized flood control system this past February. The Los Angeles area received over 9 inches of rain that month. This rainfall was three-quarters of the average yearly rainfall. The flood control system worked, and localized flooding was minimal. This pattern of rainfall is typical for many portions of Southern California and the West.

I have a third concern with the letter. Ms. Strauss explained that the current NPDES permit for the Los Angeles County cities required "educational visits" by the cities to the industrial/commercial facilities. She stated the educational visits were to "provide time for the permittees (the cities) to gain experience in controlling pollutants in storm water" from the industrial and commercial businesses. The cities believe that this was never the intent. They did not agree to implement costly inspection programs for industrial/commercial facilities five years ago.

I would appreciate if USEPA could send a clarification letter to Mr. Dickerson. It would be helpful to the cities in my District if the letter clarified that USEPA believes that the State and the cities need to develop a "cooperative effort" in the area of inspection programs, not a program that shifts the entire inspection responsibility to the cities. It should be the goal of USEPA to bring the stakeholders together and assist in resolving conflicts, not to appear to "take sides" with the State regulators.

There is a sense of urgency to this letter, since the Los Angeles Regional Water Quality Control Board is in the process of negotiating the NPDES permit regulations. I would be happy to discuss this urgent matter with you.

Thank you for your assistance.

Sincerely,

David A. Spence

David A. Spence
Mayor

From: "Escobar, Eduardo" <EESCOBAR@dpw.co.la.ca.us>
To: "Wendy Phillips (E-mail)" <wphillip@rb4.swrcb.ca.gov>, "Xavier Swamikannu (E-mail)" <xswami@rb4.swrcb.ca.gov>, "Dan Radulescu (E-mail)" <dradules@rb4.swrcb.ca.gov>
Date: 3/29/01 7:38AM
Subject: IC/ID - GIS comments

Good morning,
We are sending the attached file for your review. It includes our recommendations for incorporation in the draft NPDES permit.
Please let me know if you have any questions.
Thanks!

<<GIS-ICID suggestions.doc>>

> E
> Eduardo Escobar, P.E.
> Watershed Management Division
> Los Angeles County Department of Public Works
> (626) 458-4355 F
> Internet: http://dpw.co.la.ca.us/epd
>

CC: "Ariki, Mustafa" <MARIKI@dpw.co.la.ca.us>, "Trevizo, Carolina" <CTREVIZO@dpw.co.la.ca.us>, "Howe, Glenn" <GHOWE@dpw.co.la.ca.us>, "So, Wai" <NWAISO@dpw.co.la.ca.us>

ILLICIT CONNECTIONS / ILLICIT DISCHARGES

INTRODUCTION

GIS

We concur with the Regional Board approach where permittees may make use of available technology to improve (either by streamlining, expanding capabilities, or making processes more efficient) the programs mandated under the NPDES Municipal Storm Water Permit. Specifically, we recommend the use of GIS and the development of computer applications where feasible and where the benefits attained by them can be demonstrated.

We believe that when it comes to GIS or computer applications, by being too specific in the permit language, we limit ourselves when it comes to the use of an ever changing technology. The General Elements of Section T.1.a (Program to Eliminate Illicit Connections and Discharges - General Elements) of the NPDES permit should be, as its name implies, general. Specifics about files to be used and specific analysis may be better suited under the appropriate Model Program sections of the Storm Water Quality Management Plan (SQMP) where more details can be incorporated.

Furthermore, as presented during the meeting of March 22nd, 2001 to the Regional Water Quality Control Board, the County=s GIS file of the storm drains is not suited for analysis purposes and therefore any references to such file in the permit should be deleted (Sec. T.1.a).

At the same time, we would like to suggest the use of GIS in several instances, including, in general terms:

$ Continue computing pollutant loads from all unmonitored watersheds using the Pollutant Loading Model.

$ Doing cluster analysis (this can include: illegal discharges, confirmed illicit connections as opposed to suspect illicit connections. Note that any cluster analysis for confirmed illicit connections would need to rely on addresses or street intersections rather than station of the storm drain since, as mentioned above, the storm drain file is not suited for analysis purposes). During the life of the permit, as this element is established and developed, it can be extended to look for trends (e.g. how many illegal discharges were reported in commercial areas versus residential areas). Other datasets that are not yet created but might be useful include catch basins (again, once the data is created, tables can be linked to them and analysis can be made, say using land use information).

Please note that the use of GIS generally involves two or three main components. The first step (and usually the one of longest duration) is data creation/collection/preparation. Depending on the type of analysis, the second step requires the use of an existing application or procedure within the GIS software to do the analysis. In some instances, a separate step is required when there is the need of developing a customized application

to run the analysis (this was the case of the Pollutant Loading Model). This is mentioned because many of the GIS datasets are not yet created and time is required before any analysis can begin.

Baseline Screening/Priority Screening
We concur with the Regional Board with the elements of the Baseline Screening and the need for a Priority Screening to look for illicit connections. We would only offer some variations in the way the priority areas are determined. More details on this are found below under the comments for Section T.2.b of the Draft NPDES permit.

With this in mind, we would like to request a change in the wording of the following elements in the draft NPDES permit:

COMMENTS

$ **Section T.1.a** (pg. 35) should read as follows:

A***The Principal Permittee should make use of Geographic Information Systems (GIS) Technology whenever feasible and as specified in the SQMP to manage the implementation of the Illicit Connections and Illicit Discharges Program***@

This again leaves this section of the general elements, general. More details can be specified in the Model Program sections of the SQMP. And as mentioned above, if we can attach an address to all illegal discharges, then useful cluster analysis can be made to look for trends or problem areas.

$ **Section T.1.b** (pg. 35) should read as follows:

A***Training: Complete, by 180 days from the implementation of the permit, training for all targeted employees who are responsible for identification, investigation, termination, cleanup, and reporting of illicit connections and discharges. A refresher training may be given on an annual basis during the remaining 4 years of the life of the permit.***@

Many employees were hired during the life of the 1996 NPDES permit and therefore require complete formal training. We recommend conducting refresher training on an annual basis for the remaining 4 years of the permit. We believe this approach would result in greater benefit.

$ **Section T.1.c** (pg. 35) should read as follows:

ADocumentation and Reporting: Document and report all illicit connections, illicit discharges, and hazardous substances that enter the storm drain system within the times specified in Sections T.2 and T.3".

Response times for Illicit discharges, illicit connections and hazardous substances are not the same and should therefore not be treated the same. Usually, the Department response to an illicit discharge is much faster than an illicit connection. Sections T.2 and T.3 allow for the specification of response times separately.

$ **Section T.2.b** (page 36) should read as follows:

A Priority Screening: In addition to the baseline screening that will occur during regularly scheduled maintenance, Permittees shall design and implement a proactive storm drain screening of priority areas. Priority areas shall be determined as specified in the Model Programs Section of the SQMP@

As mentioned before, we also see the need for this added element to identify illicit connections more aggressively. However, as mentioned in prior meetings, it is not be feasible to go ten years back into records that may not offer that much information and where a lot of the record keeping may have been done manually. Also, details of determination for the priority areas are better suited in the model programs. We can offer two approaches to this determination:

Approach A. Our Flood Maintenance Division has compiled over the years a list of storm drain facilities where they have encountered the most problems when it comes to illicit discharges and illicit connections. This, we believe will address the priority areas in the most efficient way. The list of storm drain facilities we recommend inspecting under this element are:

< Project 96
< MTD 1282 (where MTD stands for Miscellaneous Transferred Drain)
< PD 727 (where PD stands for Private Drain)
< Dunsmuir DDA
< Project 36
< BI 1114 (where BI stands for Bond Issue)
< BI 527
< MTD 490
< BI 728
< BI 567
< Cedarwood DB
< BI 660
< Project 5801
< Project 57
< Project 501

- Project 3882
- Project 441
- DDI 11
- DDI 29
- Project 57
- Turnbull DB
- Sullivan Canyon DB
- Parker Canyon Cloudcroft DB
- Marie Canyon - Laurel rdg DB
- Project 530
- Project 113
- Project 452
- Project 511
- Project 9801

Approach B. Permittees can use information gathered during the first year of the new permit as a baseline to look for trends. Information on illicit connections can be separated into those found in catch basins, open channels and underground storm drains to see where the majority of them reside. This would help in focusing resources for the remaining 4 years of the permit.

- **Section T.2.c** (page 36) should read as follows:

Investigation: Upon discovery through either baseline or priority screening, or upon receiving a report of a suspected illicit connection, Permittees shall initiate an investigation within 21 business days, to determine the source of the connection, the nature and volume of the discharge through the connection, and the responsible party of the connection.

Again, the need for a minimum of 21 business days to initiate investigation is due to the length of many of our flood control facilities. Often, the field crews spend several days (depending on the length of the system) at a time in the field inspecting the facilities and do not return to the office until the inspection is completed. Once the crews return to the office, the information is compiled and transmitted to our Construction Division which is responsible for issuing construction connection permits.

- **Section T.2.d** (page 36) should read as follows:

Termination: Upon confirmation of the illicit nature of the discharge, Permittees shall ensure termination of the discharge and connection within 180 days (in a timely manner?), using enforcement authority as needed.

There are some inherent aspects of this program that prevent us from setting limits that are

not practicable. We are required to send a letter to the owners of the connections before any action can be taken (have them apply for a permit or remove the connection). We must also give them 30 days to respond. Some owners respond promptly, but in many cases where the person receiving the letter is renting the property, they discard the letter. A second letter is needed in several cases (this letter goes out via certified mail). If an owner does not respond to a third letter, the case can then be referred to the District Attorney for enforcement (this does not happen very often). When contact is established with the owner and the owner wishes to permit the connection the process begins. For cases where the owner intends to discharge non-stormwater, they are referred to the Regional Board to obtain a separate NPDES permit. The NPDES permits themselves take about 21 days. On average, it takes about 180 days for the case to be resolved (where the connection is removed or the proper permits are issued). Cases that go to court will take longer.

< **Section T.3.a** (page 36) should read as follows:

AAbatement and Cleanup: Respond, within 72 hours of discovery or a report of a suspected illicit discharge, with activities to abate, contain, and clean up all illicit discharges, including hazardous substances.@

< **Section T.3.b** (page 37) should read as follows:

AInvestigation: As soon as practicable, during or immediately following containment and clean up activities, take enforcement action as appropriate@.

As agreed during the March 22nd, 2001 meeting, there are many instances of one-time discharges where the responsible party is gone and can not be identified, therefore the language A...determine the...responsible party@ should not be included. We still respond to the clean up and gather information for record keeping or follow up purposes.

Fri Mar 30 page 1

NEW GAS STATION PERMITS ISSUED BETWEEN 1/1/1999 AND 12/31/1999 ORDERED BY PARCEL AREA

PROJECT ADDRESS	PERMIT NUMBER	USE OF BUILDING	LOT AREA (SQFT)
7858 VAN NUYS BLVD	97010-20000-03555	Gasoline Station	4315913
8620N SAN FERNANDO ROAD	99010-10000-00201	Gas Station	52759
8620N SAN FERNANDO ROAD	99010-10000-00202	Gas Station	52759
4245N LANKERSHIM BLVD	98010-10000-00919	Automobile Service Station	50477
2211S HOOVER ST	99010-10000-00812	Gas Station	30580
9110N TOPANGA CANYON BLVD	98010-20000-03793	Gas Station	25313
9110N TOPANGA CANYON BLVD	99010-20000-00080	Car Wash	25313
11259W SANTA MONICA BLVD	98010-10000-03559	Gas Station	18060
11259W SANTA MONICA BLVD	98010-10000-03561	Gas Station	18060
12058 BURBANK BLVD	98010-10000-03257	Gas Station	17029
12058 BURBANK BLVD	98020-10000-02793	Gas Station	17029
1546W WILSHIRE BLVD	98010-30000-01841	Gas Station	14280
1355W MARTIN LUTHER KING JR BLVD	99010-30000-03127	Gas Station	12655
1355W MARTIN LUTHER KING JR BLVD	99010-30000-03174	Gas Station	12655
1255N HIGHLAND AVE	99010-20000-02450	Gas Station	11487
10991W SANTA MONICA BLVD	99010-10000-02730	Gas Station	10608
10991W SANTA MONICA BLVD	99010-10000-02731	Gas Station	10608
10605W BURBANK BLVD	99010-20000-02617	Car Wash	10422
18815W SHERMAN WAY	99010-20000-00593	Car Wash	10200
9922S MAIN ST	99010-30000-02879	Gas Station	9383
1400N ALVARADO ST	98010-10000-03140	Car Wash	7026
3644W BEVERLY BLVD	99010-10000-00824	Car Wash	5937
1400W FLORENCE AVE	99010-30000-00708	Gasoline Station	3540
1400W FLORENCE AVE	99010-30000-00711	Gas Station	3540
4321S ALAMEDA ST	98010-10000-02135	Gas Station	3443
4777W PICO BLVD	98010-30000-02939	Automobile Service Station	2238

26 rows selected.

Fri Mar 30 page 1

NEW GAS STATION PERMITS ISSUED BETWEEN 1/1/2000 AND 12/31/2000 ORDERED BY PARCEL AREA

PROJECT ADDRESS	PERMIT NUMBER	USE OF BUILDING	LOT AREA (SQFT)
8734 BELLANCA AVE	00010-30000-00650	Automobile Service Station	208985
8734 BELLANCA AVE	00010-30000-00651	Car Wash	208985
500N CENTER ST	00010-20000-02252	Automobile Storage Garage	61488
5546N SEPULVEDA BLVD	00010-20000-00710	Car Wash	45720
22756W VANOWEN ST	98010-20000-03686	Car Wash	28820
9505 DE SOTO AVE	99010-10000-03595	Gas Station	18136
4200S FIGUEROA ST	99010-10000-02847	Car Wash	16926
26393S VERMONT AVE	00010-30000-04121	Gas Station	15899
26393S VERMONT AVE	00010-30000-04122	Gas Station	15899
3500S CENTINELA AVE	99010-30000-03757	Gas Station	11859
11675W PICO BLVD	98016-10001-04209	Gas Station	7564
6900 CENTINELA AVE	00010-30000-00442	Gas Station	4899
210S GAFFEY ST	99010-40000-03659	Gas Station	3007

13 rows selected.

LA MS4 MONITORING PROGRAM MEETING POINTS OF DISCUSSION
PACIFIC OCEAN ROOM
APRIL 9, 2001, 9:30 am

Land Use:

- Is County required to complete the Land Use monitoring regardless of permit requirements? – County

Comment: Not so sure what "complete" means here. My general feeling is that the land use monitoring conducted by the County up to now has probably yield enough information for the purpose of mass emission modeling, except for trash and pathogens. The priority of the next phase should be source identification, for which land use monitoring under the existing design may not be very useful. SCCWRP is conducting a source identification study for the CSTF and RB TMDL unit by sampling at targeted landuse activity sites. We should evaluate the results from that study and decide if additional monitoring (after "completion" of the existing one) needs to be done under the new permit.

Mass Emissions:

- The County plans to continue monitoring Coyote Creek - total of 6 mass emission stations?

  Comment: No comment on the Coyote Creek station. However, if the land use monitoring discontinues in the future, a mass emission station for a watershed of mostly open space and in relatively pristine condition should be established to provide a reference.

- Samples shall be analyzed for suspended-sediment concentration, total suspended solids, and particle size distribution.

  Agree.

Toxicity Studies:

- Toxicity definition: amphipod survival rate of 70% or less in a single test.

  No comments.

- Appropriate species: Ceriodaphnia dubia and sea urchin fertilization

  Agree.

- Four wet weather samples and two dry weather samples at each mass emission station shall be analyzed for water column toxicity, instead of two and two.

  No comments.

- Sediment toxicity sampling location for each of the five receiving waters: in the estuary, beginning at the region of velocity slowdown of the storm water plume if it is known, and at a mean low tide if plume dynamics are not known.

  Comments: Use of a mean low tide to determine sampling location may not get what you want. In Ballona Creek, for example, the mean low tide point is far upstream of the channel, a point well above where most sediment carried by a storm accumulate. The LAC-DPW need should evaluate multiple factors in determining the sampling locations and submit a proposal to RB for approval.

- Sediment tests shall include total organic carbon and grain size analysis.

  Agree.

Tributary/Source ID Monitoring

- Discuss number of stations in each watershed - Heal the Bay

Comments: Generally agree with the need for tributary/source ID monitoring. Suggest that the LAC-DPW and RB go through a prioritization process in selecting the targeted tributaries for monitoring. The prioritization should emphasize the value of the information for management decision-making. For instance, what will likely be the management measures to be installed in this tributary to control runoff pollution? Will the information gathered from this monitoring help us in justifying the proposed management measures and/or evaluating the effectiveness of different alternatives (e.g., diversion vs. a CDS vs. catchbasin inserts vs. non-structural BMPs)?

Receiving Waters Studies:

- San Pedro Bay: Benthic Study parameters and number of locations will be specified per Heal the Bay's suggestions, except for body burdens

- County participation in the storm water related components of the next Southern California Bight Study - participate in Steering Committee

- County participation in AB411 beach monitoring - results should link to ICID program

Comments: In addition to what are proposed, the LAC-DPW should initiate, participate, or at least be involved in biological monitoring in the Santa Monica Bay watershed.

BMP Effectiveness Studies:

- Specify this to require County participation in the SMBRF study to evaluate the effectiveness of existing storm water BMPs and SCCWRP's prop 13 project "Implementation and Evaluation of BMPs for Improving Coastal Water Quality".

Comments: Need to make clear that here "participation" means doing it together and help to expand the study to more devices, parameters, and time period.

Other:

- Clarification of study to evaluate the impact of peak discharge rates on natural stream habitat- Xavier

- Cost Analysis - Critical source monitoring not requirement

- Other Issues

Monitoring Program Requirements Review

General Comments

- Annual monitoring reports should be due on October 15 every year.
- The board needs to prioritize all elements in the monitoring requirements.
- Total estimated cost of Mass Emission and Tributary monitoring elements: $4,743,000

Land Use

- We will drop the land use monitoring from the monitoring requirements.

Mass Emission

- We will continue sampling in Coyote Creek. The permit should include it in the Mass Emission requirements.
- We will select a site in Dominguez Channel/LA Harbor WMA and construct a sampling station for the 2001-2002 storm season.
- What would be benefits if detection limits are lowered to "California Toxics Rule (CTR)" levels.
- If the purpose of lowering detection limits is to identify toxicity in stormwater, biological tests on sea and freshwater creatures need to be performed first to identify constituents of concern. Chemical tests on those constituents at CTR levels will follow to confirm toxicity if necessary.
- Estimated cost: $889,000 **(USING PRIVATE LAB COSTS)**

Tributary/Source Identification Monitoring

- What are the objectives of this monitoring program?
- If the primary purpose of this program is to identify pollutant source, we will perform studies on pollutant of concern of each tributary area using GIS and existing data.
- Once the objectives are identified, we will develop a plan, including site selection, optimal number of stations required, types of samples to be collected and so on.
- Estimated Cost: $3,854,000

Toxicity Studies

- Water column study was done in Malibu Creek, Ballona Creek, LA River, and San Gabriel River, and sediment study was done in Malibu Creek and Ballona Creek through Santa Monica Bay Receiving Waters Study and River Toxicity Study on sea urchins.
- We should be exempt from the Phase I level studies in the above sites.

Trash Monitoring

- Take out the term "baseline".

COMMENTS ON 3/13 DRAFT MONITORING REQUIREMENTS

General Comments

- The objectives of each monitoring program element are not clearly stated.
- Annual monitoring reports should be due on October 15 every year. It has been previously mentioned that some of the sampled data is not analyzed until mid-May; therefore, we would need more time to prepare the reports.

Land Use

- It was our understanding that Heal the Bay and the LA regional board agreed on dropping the land use element from the monitoring requirements. In addition, dropping this element will allow us to use our resources to develop and implement a new monitoring program, Tributary/Source Identification Monitoring program.

Mass Emission

- We have been collecting samples from Coyote Creek mass emission monitoring station under the 1996 NPDES permit period and plan to continue because this station covers 22% of San Gabriel Watershed Management Area. (See the attached maps.)
- We found that information in Attachment 1 is almost identical to that information presented in Attachment 2; therefore, we simply analyze for all constituents listed in Attachment 2 for all cases.
- Detection limits of Anthracene and Toxaphene in Attachment 2 need to be changed to 2.0 ug/L and 0.5 ug/L, respectively.
- "...high concentrations and are cause for concern" needs to be defined.
- Estimated cost (with previous detection limits): $494,000.

Critical Source

- Complete characterization of Chemical Manufacturing, Machinery Manufacturing and Rubber/Miscellaneous Plastics companies. We feel that the continuation of this effort would be beneficial when we develop source identification applications.
- Estimated cost: $71,000.

Tributary/Source Identification Monitoring

- Are the 20 tributary stations in total for the county or for each of the 6 mass emission drainage areas?
- There is no Attachment 3 regarding the TMDL schedule.
- What is the objective of this tributary/source ID monitoring?
- "...high concentrations and are cause for concern" needs to be defined.
- "...priority management actions..." need to be defined.
- Estimated cost: $2,802,000.

Other Studies

We feel it is necessary to cite the maximum contributory amount on each study and research project.

COMMENTS ON 3/13 DRAFT MONITORING REQUIREMENTS

GENERAL COMMENTS

1. Since the environmental toxicology lab cannot estimate the lab cost with the new detection limits in Attachment 2, we will try to get an approximate cost from a private lab. We will continue our efforts to find a lab that can perform the required tests if the environmental toxicology lab cannot do them.
2. Monitoring costs for mass emission, critical source and tributary monitoring programs are about 3.4 million dollars (with the assumption that new detection limits don't increase any lab costs). The requirements under this section need to be modified to come within the total 3 million dollar budget. Further modifications will then be needed if funding is to be made available for other studies that the board suggested.
3. Per our discussion in the last working group, we plan to drop land use monitoring.

TOXICITY STUDIES:

4. Regarding water column toxicity, we already performed 2 dry weather toxicity tests on sea urchins at S.G. River. Results were negative both years. We should be exempted from dry weather water toxicity tests on sea urchins for at least the first year on the S.G. River.

5. Regarding sediment toxicity, the "five receiving waters" need to be clarified (the 5 mass emission sampling sites?). Also, does sediment mean bed sediment or suspended sediment?

6. The phrase "following the dry season" seems incorrect and needs to be clarified ("following--or preceding–the wet season" seems to make more sense).

TOXICITY IDENTIFICATION EVALUATIONS:

7. These requirements are new to this permit.

8. "Toxicity" needs to be defined, e.g. a certain % of the species is affected.

9. "Appropriate species" need to be defined.

10. Since we might not know when we'll get 2 consecutive positive dry weather toxicity results at a site, we should put a cap on how many of the phase I evaluations we would perform per year or per site, or a cap on how much money we would spend on these per year or per site.

11. Do the phase I evaluations apply to both water column and sediment toxicity?

12. Regarding wet weather toxicity TIEs, same comments about caps. Also, the

requirement of 3 consecutive positive wet weather toxicity results does not correspond with the 2 wet weather toxicity tests per year per site. This is not necessarily a bad thing, though–it might mean it takes 2 years before a wet weather TIE is performed.

13. Regarding "interstitial," it could be expensive. Please provide clarification. Also, please clarify if mysids, sea urchins, and Ceriodaphnia are amphipods .

NATURAL STREAM MONITORING

14. We need to get a better definition of this and a cost estimate.

LA COUNTY MS4 MONITORING PROGRAM MEETING 4-09-01

NAME	ORGANIZATION	PHONE	EMAIL
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From: Shelley Luce <sluce@healthebay.org>
To: "'Mfisher@rb4.swrcb.ca.gov'" <Mfisher@rb4.swrcb.ca.gov>, "'tjkim@dpw.co.la.ca.us'" <tjkim@dpw.co.la.ca.us>
Date: 4/9/01 4:38PM
Subject: suggested trib monitoring sites for MS4 permit

<<MS4 mon trib sites.doc>>

Shelley Luce
Heal The Bay
310-453-0395 ext. 105

April 6, 2001

Megan Fisher
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, CA 90013

RE: Tributary/Source Identification Monitoring in the Stormwater Management/Urban Runoff Discharges NPDES Permit for Los Angeles County Flood Control District, County of Los Angeles and Cities of Los Angeles County

Dear Megan:

For the Tributary/Source Identification Monitoring component of the permit referenced above, we recommend sampling both the mainstem and the tributary immediately upstream of the confluence, for each major tributary as listed in Table 1. We also recommend sampling the inflows and outflows of each lake or major detention area that may be a source of stormwater in each watershed.

Table 1. Recommended sampling sites for tributary/source identification monitoring in the five major watersheds in LA County.

Watershed	*Recommended Sampling Sites:* *Immediately up- and downstream of confluence with:*	*At inflow and outflow of:*
Malibu Creek	East Las Virgenes Creek (at confluence with Las Virgenes Creek), Stokes Creek, Gates Creek, Lindero Creek (at confluence with Medea Creek)	Westlake, Malibu Lake, Lindero Lake
Ballona Creek	Sepulveda Channel, Benedict Canyon Channel	
Dominguez Channel		
Los Angeles River	Compton Creek, Rio Hondo, Arroyo Seco, Verdugo Wash, Tujunga Wash	Sepulveda Basin
San Gabriel River	Coyote Creek, San Jose Creek, Big Dalton Wash, Rio Hondo (upstream of Whittier Narrows Basin)	

Constituent Analyzed

We suggest including pH, dissolved oxygen, temperature, conductivity and total suspended solids as required constituents for tributary/source ID monitoring.

See you on Thursday!

Shelley Luce

California Regional Water Quality Control Board
Los Angeles Region

Winston H. Hickox
Secretary for Environmental Protection

320 W. 4th Street, Suite 200, Los Angeles, CA 90013
Phone (213) 576-6600 FAX (213) 576-6640

Gray Davis
Governor

TO: Interested Parties (see attached distribution list), including:
- Permittees – Los Angeles County Municipal Storm Water Permit
- Resource and Regulatory Agencies
- Water Districts
- Environmental Organizations
- Consultants
- Other Local Agencies
- Other Interested Parties

FROM: Xavier Swamikannu, D.Env
Chief, LA/Long Beach Storm Water Unit
Regional Water Quality Control Board, Los Angeles Region

DATE: April 13, 2001

SUBJECT: **First Draft - Los Angeles County Municipal Storm Water NPDES Permit (Draft Board Order; NPDES Permit No. CAS614001)**

ATTACHMENTS:
Distribution List
Agenda for Workshop on April 24, 2001
First Draft – Permit
First Draft – Staff Report

The County and Cities in Los Angeles County are covered under municipal storm water pemit (Board Order No. 96-054), which expires on July 30, 2001. The Regional Board will consider adoption of a renewed permit at its public meeting on July 26, 2001. As part of the renewal process, we are pleased to send you a first draft for the proposed new permit – the Municipal Storm Water NPDES Permit for the County of Los Angeles and incorporated cities (except for Cities of Santa Clarita and Long Beach, which are, or plan to be, covered under separate permits). We are also enclosing a draft staff report, containing technical justifications for changes from the existing permit. **Please submit your comments on this first draft in writing, to this office by May 16, 2001.** Your submittal by this date will provide us sufficient time to evaluate and consider the comments prior to the issuance of a second draft permit, which we plan to issue by June 8, 2001.

You will also have an opportunity to provide informal comments at a public workshop we will hold on:

April 24, 2001, starting at 9:30
at the City of Los Angeles Central Library Auditorium
630 West 5th Street, in Los Angeles

Parking will be available at the Flower Street entrance for a fee. Please enter the Library through the Flower Street entrance, as other entrances will be closed at that time. At the workshop, we shall provide background information and a brief overview of the permit components. You will have an opportunity for discussion and comments.

DISTRIBUTION LIST

LA COUNTY PERMITEES

Dept. of Public Works	Mustafa Ariki	Watershed Manager
City of Agoura Hills	James Thorsen	City Manager
City of Alhambra	James Funk	City Engineer
City of Arcadia	Terry Hagen	City Engineer
City of Artesia	Maria Dadian	City Engineer
City of Avalon	Robert Clark	City Manager
City of Azusa	Nasser Abbaszadeh	City Engineer
City of Baldwin Park	Shafique Naiyer	Interim City Engineer
City of Bell	Carlos Alvarado	City Engineer
City of Bell Gardens	Bill Pagett	City Engineer
City of Bell Flower	Jerry Crabill-Stock	City Engineer
City of Beverly Hills	David Gustavson	City Engineer
City of Bradbury	Dan Heil	City Engineer
City of Burbank	Robert Ovrom	City Manager
City of Calabasas	Charles Mink	Interim City Manager
City of Carson	Jerome Groomes	City Manager
City of Cerritos	Vince Brar	City Engineer/Director of Public Works
City of Claremont	Craig Bradshaw	City Engineer
City of Commerce	Linda Olivieri	City Clerk
City of Compton	John Johnson	City Manager
City of Covina	Mary Southall	City Clerk
City of Cudahy	James Guerra	City Engineer
City of Culver City	Jim Davis	City Engineer/Director of Public Works
City of Diamond Bar	Terry Belanger	City Manager
City of Downey	Desi Alvarez	City Engineer/Director of Public Works
City of Duarte	Jesse Duff	City Manager
City of El Monte	Kev Tcharkhoutian	City Engineer
City of El Segundo	Bellur Davaraj	City Engineer
City of Gardena	Woody Natsuhara	City Engineer
City of Glendale	Lou LeBlanc	City Engineer
City of Glendora	Richard Cantwell	City Engineer/Director of Public Works
City of Hawaiian Gardens	Dan Heil	City Engineer
City of Hawthorne	Charles Herbertson	City Engineer/Director of Public Works
City of Hermosa Beach	Stephen Burrell	City Manager
City of Hidden Hills	Bob Draper	City Engineer
City of Huntington Park	Pat Fu	City Engineer
City of Industry	John Ballas	City Engineer
City of Inglewood	Hermanita Harris	City Clerk
City of Irwindale	Robert Griego	City Manager/City Clerk
City of La Canada Flintridge	Jerry Fulwood	City Manager
City of La Habra Heights	Sheryl Lindsey	City Manager/City Clerk
City of La Mirada	Gary Sloan	City Manager
City of La Puente	Robert Gutierrez	City Manager
City of La Verne	Martin Lomeli	City Manager
City of Lakewood	Denise Hayward	City Clerk
City of Lawndale	Vangie Schock	City Manager
City of Lomita	Dawn Tomita	City Clerk
City of Los Angeles	Gary Moore	Div. Stormwater Manager
	James Hahn	City Attorney
	Jerry Montgomery	Asst. City Attorne
	Christopher Westhoff	Asst. City Attorney
City of Lynwood	Ralph Davis III	Interim City Manager
City of Malibu	Rick Morgan	City Engineer
City of Manhattan Beach	Dana Greenwood	City Engineer
City of Maywood	Bill Pagett	City Engineer
City of Monrovia	Don Hopper	City Manager

City of Montebello	Richard Chen	City Engineer
City of Monterey Park	Ronald Merry	City Engineer/Director of Public Works
City of Norwalk	Jerry Stock	City Engineer
City of Palos Verdes Estates	James Hendrickson	City Manager
City of Paramount	Patrick West	City Manager/City Clerk
City of Pasadena	Dan Rix	City Engineer
City of Pico Rivera	Enrique Acevedo	City Engineer
City of Pomona	Severo Esquivel	City Manager
City of Rancho Palos Verdes	Les Evans	City Manager
City of Redondo Beach	Steve Huang	City Engineer
City of Rolling Hills	Craig Nealis	City Manager/City Clerk
City of Rolling Hills Estate	Douglas Prichard	City Manager/City Clerk
City of Rosemead	Ken Rukavina	City Engineer
City of San Dimas	Eric Beilstein	
City of San Dimas	John Garcia	City Engineer/Director of Public Works
City of San Fernando	Wilmas Miller	City Clerk
City of San Gabriel	P. Michael Paules	City Manager
City of San Marino	Carlos Alvarado	City Engineer
City of Santa Clarita	George Caravalho	City Manager
City of Santa Fe Springs	John Price	City Engineer/Director of Public Works
City of Santa Monica	Anthony Antich	City Engineer
City of Sierra Madre	Nancy Schollenberger	City Clerk
City of Signal Hill	Kenneth Farsfing	City Manager
City of South El Monte	Jim Harris	City Engineer/Director of Public Works
City of South Gate	Ed Mino	City Engineer
City of South Pasadena	Jim Winkle	City Engineer/Director of Public Works
City of Temple City	Charlie Martin	Interim City Manager
City of Torrance	Richard Burtt	City Engineer
City of Vernon	Bruce Malkenhorst	City Administrator/City Clerk
City of Walnut	Ronald Kranzer	City Engineer
City of West Covina	Daniel Hobbs	City Manager
City of West Hollywood	Sharon Peristein	City Engineer
City of Westlake Village	John Knipe	City Engineer
City of Whittier	Stephen Helvey	City Manager

REGULATORY AND RESOURCE AGENCIES

US Coast Guard	Jake Holoson
US Army Corps of Engineer	Dr. Richard J.Schubel
US EPA Region IX	Tom Huetteman, Chief of CWA Compliance
	Laura Gentile
	Terry Oda
	Elizabeth Janes
	Eugene Bromley, CWA Standards and Permits Off.
	Steve Fuller
US Fish and Wildlife Services	Louise Lampara, Dept. of Interior
NOAA, National Marine Fisheries Services, US	Mark Helvey, Dept. of Commerce
US Fish and Wildlife Services	Kirk Wain, Dept. of Interior
USDA Forest Service	Terry C. Ellis, District Ranger
Cal/EPA	Nancy Sutley
State Water Resources Control Board	Jorge Leon, Office of the Chief of Counsel
	John Youngerman, Division of Water Quality
California Coastal Commission	Pam Emerson
California Department of Fish and Game	Jerry Spansiel
California Dept. of Fish and Game	Mervin Hee, Regional Patrol Chief
	Bill Paznokas
	Chris Long
	Larry Stevens
South Coast Air Quality Management	Barry Wallerstein, Executive Director
	Bill Tippets

State Dept. of Health Services	Heather Collins Gary Yamamoto, Drinking Water Field Operations Vera Melynk –Vecchio, Drinking Water Field Oper. Jeffrey Stone, Recycled Water Coordinator
State of California, Air Resources Board	Darrell Hawkins
State of California, Dept. of Transportation	Paul Baranick
Dept. of Water Resources	Charles White
LA Co. Dept. of Health and Services	Jack Petralia
LA Co. Fire Dept., Construction and Maintenance	James Holdrige, Div., Asst. Fire Chief George Ghebranious

WATER DISTRICTS

Metropolitan Water District of Southern California	Mark Beuhler John Clark
Main San Gabriel Basin Water Master	Carol Williams, Executive Officer Rick Sase
Upper Los Angeles River Area Watermaster	Melvin Blevins Mark Mackowski, Asst. Watermaster
Water Replenishment Dist. of Southern California	Richard Nagler

ENVIRONMENTAL ORGANIZATIONS

American Oceans Campaign	Kelly McGee
Califomia Environmental Group	
Environmental Now	Terry Tamminen
Friends of Santa Clara River	Ron Bottorf
Friends of the LA River	Melanie Winter
Friends of the San Gabriel River	Jacqueline Lambrichts
Heal the Bay	Mark Gold
LA and San Gabriel River Watershed Council	Dorothy Green
Natural Resources Defense Council	David Beckman
Santa Monica Baykeeper	Steve Fleischli
Surfrider Foundation	Frank Angel Patrick Rogan
Tree People	Andy Lipkis

CONSULTANTS

Avanti Environmental, Inc.	Paul Dumas
Bay Area Stormwater Management Agencies	Geoff Brosseau
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Brash Industries	Marvin Sachse
Bullshop System, Inc.	Art Hugh
Burns & McDonnell	Jennifer Richards
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Geomatrix	Timothy Simpson
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Montgomery Watson	Gary Friedman
NEST Environmental Services	
Network Environmental Systems, Inc.	Scott Vickers
Perla Fickenscher & Associates	Perla Fickenscher
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Rivertech, Inc.	A. Tamim Atayee
RMT, Inc.	Ronald Hayes
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Safety-Kleen Systems, Inc.	Heather Collins
StetsonEngineers, Inc.	Jeffrey Helsley
Stormtech, Inc.	David Kendziorski
Tetra Tech-Simons, Li and Associates	Mike Chavez
URS Greiner Woodward Clyde	Christopher Adams
URS Greiner Woodward Clyde	Eric Fordham
Vortechnics, Inc.	Thomas Adams, P.E

OTHER LOCAL AGENCIES

Building and Safety, LA Co. Dept. of Public Work	Mark Pestrella
City of Bellflower Community Development	Brian Smith, Deputy Director
City of Los Angeles	Jerry Montgomery, Asst. City Attorney
City of Los Angeles, Bureau of Sanitation	Alfredo Magallanes
	Judith Wilson
City of Los Angeles, Bureau of Street Lighting	Randy Price
City of Los Angeles, Public Works	Jim Marchese, Regulatory Affairs Division
County of LA Chief Administrative Office	Don Simpson
County of Los Angeles	Peter J. Gutierrez, County Counsel
County of Ventura, Public Works Agency	Becky Linder, Case Planner
Engineering Public Works	John Ilasin, Asst. Engineer
LA Co. Dept. of Public Works	Ken Erhard, Flood Control Maint. Div.
LA Co. Dept. of Public Works	Mike Mohajar, Environmental Program Division
LA Co. Dept. of Public Works	Carl Sjoberg, Environmental Program Div.
LA Co. Fire Dept., Health Hazmat Division	Gary Brougher
LA Co. Internal Services Dept.	Steve Morey, Acting Wastewater Supervisor
SCAG	Dan Griset

OTHER INTERESTED PARTIES

Assemblyman
Law Offices of Tharpe & Howell

Barbosa Garcia LLP
Phillsbury, Madison & Sutro, LLP
Building Industry Association
Wolf, Rifkin & Shapiro, LLP
Burke, Williams & Sorensen, LLP

Thomas Calderon
Mitchell Cohen
Stuart Ebert
Kenneth Fong
Sidney Kanazawa
Tim Piasky
Mindy Sheps
Rufus Calhoun Young, Jr., Esq.

LOS ANGELES COUNTY MUNICIPAL STORM WATER PERMIT WORKSHOP
TENTATIVE AGENDA

Tuesday, April 24, 2001 at 9:30 am
Los Angeles Central Library Auditorium
630 West 5th Street, Los Angeles*

9:30	Welcome	Dennis Dickerson
9:40	Background	Xavier Swamikannu/ Wendy Phillips
9:50	Legal Authority	To Be Announced
9:55	US EPA Comments	Laura Gentile
	Review and Comments on Draft Special Provisions	
10:00	Public Education/Programs for Industrial/ Commercial Businesses, including Inspections	Megan Fisher/Dan Radulescu Everyone
10:40	Public Agency Activities	Carlos Urrunaga Everyone
11:00	Illicit Connections/Discharge Elimination	Wendy Phillips/Everyone
11:20	Development Planning	Xavier Swamikannu Everyone
12:00	Programs for Construction Sites	Carlos Urrunaga/Everyone
12:30	Close	

* Parking available beneath Library for a fee. Use Flower Street entrance.

DRAFT

FACT SHEET/STAFF REPORT

FOR THE

LOS ANGELES COUNTY MUNICIPAL STORM WATER NPDES PERMIT (CAS614001)

Los Angeles Regional Water Quality Control Board
April 13, 2001

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DRAFT FACT SHEET/STAFF REPORT

State of California
California Regional Water Quality Control Board Los Angeles Region
National Pollutant Discharge Elimination System (NPDES)
NPDES Permit No. CAS614001, CI 6948
Regional Board Order No. 01-XXX

I. FACT SHEET/STAFF REPORT FORMAT

The purpose of this Fact Sheet/Staff Report is to give the Permittees and the interested public an overview of the proposed permit, discuss its requirements, as well as provide regulatory justification for the permit requirements. The Fact Sheet/Staff Report consists of two parts. The first part (sections I through V) contains general information regarding urban runoff and the permit. The second part (sections VI and VII) contains more detailed discussion and regulatory justifications of each permit component, and is meant to be used as a reference document during review of the permit. In section VI, each component of the Special Provisions section is listed followed by a description of regulatory authority and a discussion of the individual requirements and justifications for significant changes from Order 96-054. Section VII contains a summary of the proposed monitoring program and a technical basis for the requirements.

II. INTRODUCTION - IMPACTS OF STORM WATER/URBAN RUNOFF

A. Impacts

Storm water and urban runoff are fundamentally important to the water quality of Southern California. They have been found to be a leading cause of water quality impairment in the Los Angeles Region. Storm water and urban runoff, during dry and wet weather, are often contaminated with pesticides, fertilizers, animal droppings, trash, food wastes, automotive byproducts, and many other toxic substances generated by our urban environment. Water that flows over streets, parking lots, construction sites, and industrial, commercial, residential, and municipal areas carries these untreated pollutants through the storm drain networks directly into the receiving waters of the region. Several of the documented water quality impacts and increased public health risks from MS4 discharges that affect Los Angeles County and its coastline are listed below.

- The National Urban Runoff Program (NURP) Study (U.S. EPA 1983) showed that MS4 discharges draining from residential, commercial, and light industrial areas contain more than ten times the annual loading of total suspended solids. Although the NURP Study did not target industrial sites, the study suggested that runoff from industrial sites may have significantly higher contaminant levels than runoff from other urban land use sites. Several studies tend to support this suggestion, such as the Fresno, CA NURP project, which showed that industrial areas had the poorest storm water quality of the four land-uses evaluated.
- The study also found that pollutant levels from illicit discharges were high enough to significantly degrade receiving water quality and threaten aquatic life, wildlife, and human health.
- The 1998 National Water Quality Inventory (305(b) Report), showed that urban runoff/storm sewer discharges affect 11% of rivers, 12% of lakes, and 28% of estuaries. The Report also showed an increase in the impairment of ocean shoreline due to urban runoff/storm sewers to 63% from 55% in 1996.

- The report notes that urban runoff and storm sewer discharges are the leading source of pollution in California's coastal waters, rivers and streams, and are one of the main factors in the degradation of surface water quality. (Chapter 12, State and Territories Summaries, see also California 305(b) Report)
- The Natural Resources Defense Council (NRDC) 1999 Report, "Stormwater Strategies," identifies two main causes of the storm water pollution problem in urban areas: (1) Increased volume and velocity of surface runoff, and (2) the concentration of pollutants in the runoff.
- There are three types of human-made impervious covers that increase the volume and velocity of runoff: rooftop, transport, and non-porous (impervious) surfaces.
- As these impervious surfaces increase infiltration will decrease, forcing more water to run off the surface, picking up speed and pollutants.
- Certain activities, such as those from industrial sites, are large contributors of pollutant concentrations to the stormwater system.
- The report also identified several activities causing stormwater pollution from urban areas, practices of homeowners, businesses, and government agencies.

B. Summary of Problems in the Los Angeles County Watersheds

Watersheds are geographic areas draining into a river system, ocean or other body of water through a single outlet that includes the receiving waters. There are five Watershed Management Areas (WMAs) that represent the five major watersheds covered by the Los Angeles County MS4 NPDES permit. The following is a summary of some significant issues in each watershed.

Dominguez Channel/LA-LB Harbor Watershed

- Industrial storm water - 415 dischargers
- Historical deposits of DDT and PCBs in sediment
- Spills from ships and industrial facilities
- Leaching of contaminated groundwater
- Stormwater runoff
- Impairments: metals, PCBs, PAHs, historic pesticides, coliform, trash, and nitrogen

Los Angeles River Watershed

- 109 dischargers covered by general permits
- Industrial storm water - 1,327 dischargers
- Construction storm water - 147 dischargers
- Nitrogen and coliform contributions from septic systems
- Other nonpoint sources (horse stables, golf courses)
- Leakage of MTBE from underground storage tanks
- Impairments: nitrogen, trash, selenium, other metals, coliform, PCBs, historic pesticides, chlorpyrifos

San Gabriel River Watershed

- 65 dischargers covered under general permits
- 549 dischargers covered under an industrial storm water permit
- 175 dischargers covered under a construction storm water permit
- Excessive trash in recreational areas of upper watershed
- Nonpoint source loadings from nurseries and horse stables
- Impairments: nitrogen and effects, trash, metals, historic pesticides, coliform, chlorides, and PCBs

Malibu Creek Watershed

- Excessive freshwater, nutrients, and coliform in lagoon; contribution from POTW and other sources
- Urban runoff from upper watershed
- Septic tanks in lower watershed

Ballona Creek Watershed

- Trash loading from creek
- Sediment contamination by heavy metals form creek to Marina del Rey Harbor and offshore
- Toxicity of both dry weather and storm water runoff in creek
- High bacterial indicators at mouth of creek

Santa Monica Bay

Discharges from Ballona and Malibu Creeks contribute to impairments in the Santa Monica Bay and its beaches.

- Impairments: mercury, selenium, other metals, historical pesticides, PAHs, PCBs, nitrogen, coliform, trash, TBT, habitat alteration, exotic vegetation, and salts

Coastline

- Acute health risk associated with swimming in runoff contaminated surfzone waters
- Chronic risk associated with consuming seafood from areas impacted by DDT and PCB contamination
- Historic deposits of DDT and PCBs in sediment

III. STATUTORY AND REGULATORY HISTORY OF THE STORM WATER PROGRAM

- The 1972 amendments to the federal Clean Water Act (CWA) prohibit the discharge of any pollutant to waters from a point source, unless a National Pollutant Discharge Elimination System (NPDES) permit authorizes the discharge.
- Because the focus on reducing pollutants was centered on industrial and sewage treatment discharges, Congress amended the CWA in 1987, requiring the EPA to create phased NPDES requirements for storm water discharges.
- Under the 1990 CWA, Phase I addressed storm water runoff by requiring the NPDES coverage for municipal separate storm sewer systems (MS4s) serving a population of 100,000 or more, construction activity disturbing 5 acres of land or more, and ten categories of industrial activity.
- Phase II requires operators of small MS4s and small construction sites in urban areas to control polluted storm water runoff, and reduces the negative impacts to water quality and aquatic habitat by controlling the sources of storm water discharges.
- Phase II establishes a cost-effective approach for reducing environmental harm caused by storm water discharges from unregulated point sources.

IV. MS4 PERMIT HISTORY

In 1990, the Los Angeles Regional Water Quality Control Board (Regional Board) adopted Order No. 90-079, the Los Angeles County Municipal Storm Water Permit. That permit required the County of Los Angeles and the incorporated cities to implement pollution controls including amending ordinances optimizing existing pollutant controls

such as street sweeping, construction site controls, and others and to among all Permittees, have a minimum 13 BMPs for consistency across the County.

On July 15, 1996, the Regional Board adopted Order No. 96-054 that revised the 1990 Permit. The 1996 Permit required model programs be developed and implemented by the Permittees for Illicit Connections and Illicit Discharges, Development Planning, Development Construction, Industrial/Commercial Activities, Public Agency Activities, and Public Information and Public Participation. These dynamic model programs are modified with the changing needs of the Storm Water Quality Management Program.

Following the adoption of Order 96-054, the City of Long Beach submitted a Report of Waste Discharge (ROWD) as an application for its own MS4 permit. The City of Long Beach Municipal Storm Water Permit (Order No. 99-060) was adopted on June 30, 1999. This Order superseded the countywide permit, allowing Long Beach to operate under separate waste discharge requirements.

On January 31, 2001, the Los Angeles County Department of Public Works submitted an application for renewal of their MS4 permit in the form of an ROWD for Los Angeles County and the incorporated cities, except for Santa Clarita and the City of Long Beach. The City of Santa Clarita is proposing to operate under a separate permit for the Santa Clara Watershed.

Benefits of Permit Program Implementation

Implementation of the six model programs should significantly reduce pollutants in urban storm water in a cost-effective manner. Implementation of best management practices (BMPs) should also reduce pollutant discharges, and improve surface water quality. The expected benefits of implementing the minimum measures of an MS4 NPDES permit include:

- Enhanced Aesthetic Value: Storm water affects the appearance and quality of a water body, and the desirability of working, living, traveling, or owning property near that water body. Reducing storm water pollution will increase benefits as these water bodies recover and become more desirable.
- Enhanced Opportunities for Boating: Benefits are offered by reducing sediment and other pollutants, and increasing water clarity, which enhances the boating experience for users.
- Enhanced Commercial Fishing: Important because commercial fisheries are a significant part of the nation's economy, and 28% of the estuaries in the 305(b) Report were impacted by storm water/urban runoff.
- Enhanced Recreational and Subsistence Fishing: Pollutants in storm water can eliminate or decrease the numbers, or size, of sport fish and shell fish in receiving waters.
- Reduced Flood Damage: Storm water runoff controls may mitigate flood damage by addressing problems due to the diversion of runoff, insufficient storage capacity, and reduced channel capacity from sedimentation.
- Reduced Illness from Consuming Contaminated Seafood: Storm water controls may reduce the presence of pathogens in seafood caught by commercial or recreational anglers.
- Reduced Illness from Swimming in Contaminated Water: Epidemiological studies indicate that swimmers in water contaminated by storm water runoff are more likely to experience illness than those who swim farther away from a storm water outfall.
- Enhanced Opportunities for Non-contact Recreation: Storm water controls reduce turbidity, odors, floating trash, and other pollutants, which then allow waters to be used as focal point for recreation, and enhance the experience of the users.

- Drinking Water Benefits: Pollutants from storm water runoff, such as solids, toxic pollutants, and bacteria may pose additional costs for treatment, or render the water unusable for drinking.
- Water Storage Benefits: Storm water is a major source of impairment for reservoirs. The heavy load of solids deposited by storm water runoff can lead to rapid sedimentation of reservoirs and the loss of needed water storage capacity.

V. BACKGROUND - LOS ANGELES COUNTY MS4

A. LA County Storm Drain Structure - to be inserted

B. Summary of Monitoring

In the 1994-95 storm season, the Los Angeles County Department of Public Works began monitoring storm water quality in Los Angeles County. The first two years of monitoring were conducted pursuant to the 1990 permit. Over the past five years, the Los Angeles County storm water monitoring program consisted four main components: mass emission monitoring, land use monitoring, critical source monitoring, and a Santa Monica Bay receiving water study. The results of each objective are summarized below.

Mass Emission Monitoring
Mass emissions were monitored for four major watersheds: Ballona Creek, Malibu Creek, Los Angeles River, and San Gabriel River. The County also monitored mass emissions from Coyote Creek, although it was not a requirement of Order 96-045. The mass emission monitoring successfully identified 32 pollutants of concern, including toxic levels of zinc and copper from Ballona Creek discharge, toxicity in the Los Angeles and San Gabriel Rivers, and the extent of severity of bacterial indicators in both dry and wet weather. The Los Angeles River was found to consistently contribute the most zinc, copper and suspended solids.

Land Use Monitoring
The County selected eight land use types to be monitored to identify sources of pollutants in storm water monitoring. These land uses include retail/commercial, vacant, high-density single family residential, transportation, light industrial, education, multifamily residential, and mixed residential. Light industrial, transportation, and retail/commercial land uses were identified as producing the highest median concentrations for total and dissolved zinc. Light industrial and transportation displayed the highest median concentrations for total and dissolved copper, and light industrial produced the highest concentrations of suspended solids. The land use monitoring data has not provided significant information to the storm water management program. However, the required event mean concentrations were not all derived during the last five years of monitoring, so the program will be continue until it is complete.

Critical Source Monitoring
Five critical sources, including industrial and commercial facilities, were monitored to evaluate the effectiveness of voluntary good housekeeping and preventative Best Management Practices. The critical sources included in the study were motor freight, auto dealers, chemical manufacturing, machinery manufacturing, and rubber/plastics. No significant difference in storm water quality was found between critical source industries that implemented BMPs and those that did not, except for the metal fabrication industry, which was identified as producing the highest median concentrations for zinc, copper, and suspended solids. Due to the inability to require or

control the implementation of BMPs, this study was ineffective at evaluating BMP effectiveness.

Receiving Water Study

A three-year study was conducted to assess the impacts of urban storm water runoff, specifically ecosystem health, on the receiving waters of the Santa Monica Bay. The study examined plume characteristics, water column and seafloor biology. Ballona and Malibu Creek were compared to evaluate the effects of different watershed types. The study discerned the presence of well-developed plumes containing toxic materials, identified zinc and copper as contaminants in Ballona Creek, and concluded that sediments offshore of Ballona Creek generally had higher concentrations of urban contaminants. These findings demonstrate the need for further studies.

VI. DISCUSSIONS OF SPECIAL PROVISIONS

A. Public Information and Participation Program

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(I)(B,C,E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority:

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) provides that the proposed management program include "A description of a program to reduce to the maximum extent practicable, pollutants in discharges from MS4s associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(6) provides that the proposed management program include " A description of education activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials."

To satisfy the Public Education and Outreach minimum control measure, the Permittee needs to:

- Implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of storm water discharges on local waterbodies and the steps that can be taken to reduce storm water pollution; and

- Determine the appropriate BMPs and measurable goals for this minimum control measure (EPA).

Background:

Implementation of a PIPP is a critical BMP and a necessary component of a storm water management program. The State Board Technical Advisory Committee "recognizes that education with an emphasis on pollution prevention is the fundamental basis for solving nonpoint source pollution problems." The USEPA (Fact Sheet 2.3) finds that "An

informed and knowledgeable community is critical to the success of a storm water management program since it helps insure the following:

- Greater support for the program as the public gains a greater understanding of the reasons why it is necessary and important. [...];

- Greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters."

Furthermore, the public can provide valuable input and assistance to a municipal storm water management program and, therefore, should play an active role in the development and implementation of the program. EPA states that an active and involved community is crucial to the success of a storm water management program because it allows for:

- Broader public support since citizens who participate in the development and decision making process are partially responsible for the program and, therefore, may be less likely to raise legal challenges to the program and are more likely to take an active role in its implementation;
- Shorter implementation schedules due to fewer obstacles in the form of public and legal challenges and increased sources in the form of citizen volunteers;
- A broader base of expertise and economic benefits since the community can be a valuable, and free, intellectual resource; and
- A conduit to other programs as citizens involved in the storm water program development process provide important cross-connections and relationships with other community and government programs. This benefit is particularly valuable when trying to implement a storm water program on a watershed basis, as encouraged by EPA.

Discussion:

Based on the background information, the County should continue its comprehensive educational storm water and urban runoff outreach program, which is designed to measurably increase public knowledge and change behavior regarding storm water pollution. The first five-year public education plan was successful at studying segmentations of Los Angeles County residents to determine those who pose the greatest threat to storm water quality and those who represent the greatest opportunity to respond to a public education program and at providing a baseline measurement of residents' storm water-related practices and habits. This information was used to target the residents who are most likely to change their behaviors to improve storm water quality. Using various communication tactics and activities, the program successfully reached 83% of County residents with pollution prevention messages (Five-Year Storm Water Public Education Strategic Analysis).

Although the Program has been successful at certain goals it should be continued. It must be augmented to continue increasing public awareness of specific storm water issues. According to the USEPA, materials and activities should be relevant to local situations and issues, and incorporate a variety of strategies to ensure maximum coverage. This is addressed in Part P.4 by requiring the development of watershed and pollutant-specific education programs.

Also, EPA encourages partnerships and cooperation. "It is generally more cost-effective to use an existing program,..., than to have numerous operators developing there own local programs" (Fact Sheet 2.3). Quarterly meetings will provide the opportunity for

permittees to coordinate their outreach efforts and efficiently build on the County's existing program with local, watershed-specific efforts.

Furthermore, "Directing materials or outreach programs toward specific groups of commercial, industrial, and institutional entities likely to have significant storm water impacts is recommended" (Fact Sheet 2.3). The Permittee conducted educational site visits to Phase I industrial facilities, auto repair shops, retail gasoline outlets, and restaurants during the last 5-year permit cycle. The next step in this targeted outreach program is education at the corporate level to facilitate employee compliance, as described in Part P.5. Also, a non-regulatory business assistance program will encourage small businesses that lack access to the expertise necessary to comply with storm water regulations to implement pollution prevention measures.

Specific significant changes in the draft permit and their justifications are described below.

1. Program for Residents

NEW REQUIREMENT:
The Principal Permittee shall organize Public Outreach Strategy meetings with all Co-permittees on a quarterly basis. The Principal Permittee shall provide guidance for Co-permittees to augment the regional outreach and education program. Co-permittees shall coordinate regional and local outreach and education to reduce duplication of efforts.

JUSTIFICATION:

- This requirement is based on the need for coordination between all Permittees. Since the Program inception, Permittees have been required to conduct education activities within their own jurisdictions. The lack of guidance and coordination has led to duplicate efforts and confusion about developing appropriate programs that are consistent with and augment the Principal Permittee's regional education program. This requirement will ensure that all Permittees are coordinated for the most efficient and effective Program. It will also help identify Permittees with insufficient Programs.

- The Storm Water Phase II Fact Sheet 2.3 states that it is generally more cost-effective to have numerous operators coordinate to use an existing program than all developing their own local programs. Therefore, Permittees should build on the regional program with additional information specific to local needs.

NEW REQUIREMENT:
The Principal Permittee and Co-permittees shall coordinate to develop outreach programs that target the watershed-specific pollutants listed in Table 1 within 6 months of the permit adoption date. It may be appropriate to address metals in the Industrial/Commercial businesses program. Region-wide pollutants may be included in the Principal Permittee's mass media efforts.

Table 1. Target Pollutants for Outreach

Watershed	Target Pollutants for Outreach
Ballona Creek	*Trash, Pathogen Indicators, Metals*
Malibu Creek	*Trash, Nutrients, Pathogen Indicators*
Los Angeles River	*Trash, Nutrients (Nitrogen), Pathogen Indicators, Metals, Pesticides*
San Gabriel River	*Trash, Nutrients (Nitrogen), Pathogen Indicators, Metals*
Dominguez Channel	*Trash, Pathogen Indicators*

JUSTIFICATION:

- This requirement will allow the Program and/or local efforts to focus on target pollutants. Citizens must be aware of priority pollutants and their causes for any improvement to occur. Page 3 of the SQMP states that the components within the phases that roll-out over the next four years will be fluid to reflect the evolving message for each targeted audience. This implies that the Permittee realizes the need to target pollutants and specific audiences and had already planned to address this.

- Fact Sheet 2.3 states that municipalities should strive to make their materials and activities relevant to local situations and issues, and to incorporate a variety of strategies to ensure maximum coverage. It also recommends directing materials or outreach programs toward specific groups of commercial, industrial, and institutional entities likely to have significant storm water impacts.

- This is a necessary step in the implementation of current and future TMDLs.

- Although it may not be appropriate to target heavy metals through the Program for Residents, it may be accomplished through the site inspection program. The Industrial/Commercial Program will prioritize facilities by their threat to water quality and whether or not they generate pollutants for which the water body is impaired, so it will be consistent with this requirement and Table 1.

2. Programs for Businesses

NEW REQUIREMENT:

The Principal Permittee shall develop and implement a Corporate Outreach Program to educate corporate heads about storm water regulations. The Program shall target gas stations and restaurant chains.

JUSTIFICATION:

- Facility owners and representatives at the corporate level are not typically present during site visits or inspections. They need to be educated about applicable storm water regulations so they can set rules and direct management to ensure compliance at the facility level.
- This has already been discussed as the next step following the last five years of outreach to these businesses.

NEW REQUIREMENT:

Permittees shall develop and implement a Business Assistance Program to provide confidential, technical resource assistance to small businesses to help them understand and comply with storm water regulations.

JUSTIFICATION:

- Many small businesses do not have the resources or expertise necessary to understand and implement storm water regulations. A non-regulatory assistance program that educates businesses about pollution prevention will help them comply and cut costs, so they can continue to be competitive. Hiring consultants and implementing structural BMPs can put many small operators out of business.

- The City of Los Angeles has been implementing a successful business outreach program through the Hazardous and Toxic Materials Office since 1988.

- Fact Sheet 2.3 recommends directing materials or outreach programs toward specific groups of commercial, industrial, and institutional entities likely to have significant storm water impacts.

- Alternative funding sources, such as grants and loans may be available to fund such a program.

3. Performance Standards

NEW PERFORMANCE STANDARD:
The Discharger shall ensure that a minimum of 35 million impressions per year are made on the general public about storm water via print, local TV access, local radio, or other appropriate media.

JUSTIFICATION:

- According to the Principal Permittee's Year Four (1999-2000) Highlights, approximately 85 million impressions were made through advertising, media relations, customized coffee jackets, corporate partnerships, special events, and business outreach. Hits on the www.888CleanLA.com website have been consistently increasing, indicating a greater public interest, as well as impressions. It can be anticipated that mass media coverage will become more efficient after the final Program study is complete in the summer of 2001. Also, Increased media attention and public interest in current issues such as trash TMDLs is expected. The County originally proposed that it would make a minimum of 50 million impressions per year, however, this number has been reduced to 35 due to the increasing cost of advertising.

- The requirement is consistent with the number of impressions required in the City of Long Beach Municipal Storm Water Permit Order (99-060) and the Ventura County Municipal Storm Water Permit. The City of Long Beach is required to make a minimum of 1.5 million impressions per year. With a total population of approximately 426, 000 people, they must impress each person approximately 3.5 times per year. Ventura County is also required to impress every resident approximately 3 times. The 11.4 million people in Los Angeles County must be impressed approximately 3 times per year.

NEW PERFORMANCE STANDARD:
The Discharger shall provide all Unified School Districts within its jurisdiction with materials, including videos, live presentations, brochures, and other media necessary to educate a minimum of 50 percent of all school children (K-12) every 2 years on storm water pollution. All Co-permittees shall cooperate with funding and implementing this requirement. Cooperative efforts with other agencies may also be used to accomplish this requirement.

JUSTIFICATION:

- This requirement is consistent with the City of Long Beach Municipal Storm Water Permit.

- It is also justified by the performance of Los Angeles County's School Environmental Education Program. According to data provided by the

County, the Program has been reaching approximately 50 percent of elementary and secondary schools in the County every 2 years. It is also expected that the required coordination among permittees will increase the effectiveness and range of this Program.

NEW PERFORMANCE STANDARD:
Corporate Outreach for all gas station and restaurant chain corporations shall occur once every 2 years, not less than twice during the permit cycle.

JUSTIFICATION:
This performance standard is required because it is consistent with the frequency of previous and current inspections. This program will replace the need for educational site visits or inspections of gas stations. The resources saved by not inspecting gas stations can be used to fund this program. Also, a corporation can encompass many gas stations or restaurants, so the number of consultations will be significantly less than that of previously required educational site visits.

NEW PERFORMANCE STANDARD:
Permittees shall assist (through site visits, telephone consultations, presentations or material distribution) all qualifying businesses that request assistance, or 1000 businesses per year, whichever is less.
JUSTIFICATION:
This number was determined based on the performance of the City of LA's existing program

B. Industrial/Commercial Inspections Program

Legal Authority
The Phase I regulations 40 CFR 122.26(d)(2) require, in part, that the applicant (i) develop adequate legal authority, (ii) perform a source identification, and (iv) develop a management program to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system design and engineering methods, and such other provisions which are appropriate. Specifically, with regards to industrial controls, the management plan shall include the following.

40 CFR 122.26(d)(2)(iv)(C), A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system. The program shall:
(1) Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges;
(2) Describe a monitoring program for storm water discharges associated with industrial facilities.....

Background

The municipality is ultimately responsible for discharges from their MS4. Because industrial awareness of the program may not be complete, there may be facilities within the MS4 area that should be permitted but are not (non-filers). In addition, the Phase I

regulations that require industries to obtain permits is based on SIC Code. This has been shown to be not comprehensive in identifying industries that may significant sources of storm water pollution (*by industries we also mean commercial businesses. "Industries" is intended as a generic term*) that should be permitted. Another concern is that the permitting authority may not have adequate resources to provide the necessary oversight of permitted facilities. Therefore, it is in the municipality's best interest to assess the specific situation and implement an industrial/commercial inspection and enforcement program to control the contribution of pollutants to and through their MS4 to the maximum extent practicable.

In the preamble for its 1990 regulations, US EPA clearly states the intended strategy for discharges of storm water associated with industrial activity: "*...Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system's discharges. These permits are expected to require that* ***controls*** *be placed on storm water discharges associated with industrial activity which discharge through the municipal system.*" US EPA notes also in the preamble that "*... municipalities will be required to meet the terms of their permits related to industrial dischargers.*"

In the **Guidance Manual For the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems** - US EPA November 1992 (Guidance Manual) in Chapter 3.0 it is specified that municipal applicants must demonstrate that they possess adequate legal authority to:

- Control construction site and other industrial discharges to MS4;
- Prohibit illicit discharges and control spills and dumping;
- Carry out inspection, surveillance, and monitoring procedures.

The document goes on to explain that "control", in this context means not only to require disclosure of information, but also to limit, discourage or terminate a storm water discharge to the MS4. Also, a municipality, to satisfy its permit conditions, **may need to impose additional requirements on discharges from permitted industrial facilities, as well as discharges from industrial facilities and construction sites not required to obtain permits.**

In the same Guidance Manual, Chapter 6.3.3, it is stated that the municipality is ultimately responsible for discharges from their MS4. Consequently, the proposed storm water management program should describe how the municipality will help EPA and authorized NPDES States to:

- **Identify** priority industries discharging to their systems;
- **Review and evaluate** storm water pollution prevention plans and other procedures that industrial facilities must develop under general or individual permits;
- **Establish and implement** BMPs to reduce pollutants from these industrial facilities (or require industry to implement them); and
- **Inspect and monitor** industrial facilities that the industries discharging storm water tot the municipal systems are in compliance with their NPDES storm water permit, if required.

Discussion

Recognizing that the municipality is ultimately responsible for the quality of storm water discharges in the MS4, the municipalities should evaluate the industrial/commercial sector and determine their compliance with the permit requirements and contribution to the MS4 and potential impacts to the receiving waters. The following areas must be

addressed in order to implement a meaningful industrial/commercial inspection and enforcement program that has the ability to **control and reduce** the contribution of pollutants from industrial/commercial sites to the maximum extent practicable.

- **Source Identification**
  - Identification of industrial/commercial sites discharging to the MS4 (by SIC codes and narrative if needed)
  - Characterization of activities, materials used and potential for contributing pollutants and what type of pollutants

- **Pollution Prevention**
  - Key concept, many times overlooked. **Prevent, before it happens**. **Pro-active** rather than **Reactive**. It is more difficult to treat after the pollutant was released or mixed with runoff. Best management practices and other site-specific controls are often most appropriate for reducing pollutants in storm water discharges associated with industrial activity.

- **Threat to Water Quality Prioritization**
  - Identify impaired water bodies and link with activities and industrial/commercial sites that may contribute specific pollutants creating (or potentially contributing to) the water quality impairment

- **Through existing ordinance, order, or similar means, the ability to**
  - enter premises;
  - conduct inspections;
  - review and evaluate SWPPPs;
  - adequate BMP implementation and monitoring results; and,
  - appropriate enforcement procedures and actions

  in order to address the following elements:

  - BMP Implementation
  - Monitoring of Industrial/Commercial Sites
  - Inspection of Industrial/Commercial Sites
  - Enforcement Measures for Industrial/Commercial Sites

It may be necessary to update existing ordinances if they do not provide sufficient legal authority to implement the previous components.

Reporting of Non-compliant Sites and Coordination with State activities

- Recognizing the dual coverage envisioned by the US EPA regulations, and suggested partnership between local and State authorities, municipalities shall coordinate with State activities for the implementation of the General Industrial Activities Storm Water Permit (GIASP). The net result should be a better and improved coordinated program with greater impact on limiting and eliminating (as a final goal) the contribution of pollutants to the receiving water and the capacity of the receiving water to sustain and/or restore the beneficial uses without impairments.

- Based on the dual coverage and partnership approach between permitting authority and municipalities intended by the US EPA in the storm water regulations (see letter dated December 19, 2000, from Alexis Strauss, Director, Water Division, US EPA Region IX, to Dennis Dickerson, Executive Officer, RWQCB-LA), and in order to best use limited resources at the State

and Municipal level. Regional Board staff requires the following improvements.

- Recognizing that this permit represents a third generation permit and building on the experience and tools developed under the previous permits, the Industrial/Commercial component must be elevated to a Inspection/Enforcement program, in order to have the municipalities to control the storm water discharges associated with industrial activities from industrial/commercial facilities to the maximum extent practicable. The business PIPP component should be continued under the auspices of the Public Education program.

- **For all**:

  - implement baseline BMPs using the tools already developed, and develop new ones for additional sectors where necessary;

  - use of existing checklist for inspection

  - a municipal industrial/commercial inspection program should focus on the following categories in the order of priority

- **Gas stations**. They may be the target of a focused educational program using and engaging corporate or franchise association as a conduit for the outreach efforts. Frequency: once in 24 months but not less than two times during the life of the permit.
- **Restaurants**. Frequency: once per year. The County Health Department Code may need to be amended to require inspection of storm water practices.
- **Automotive services**. Frequency: once in 24 months not less than twice per permit cycle.
- **Phase one facilities**. Frequency: once in 24 months not less than twice per permit cycle. In first phase, all facilities will be inspected, but facilities with no exposure need not be addressed in the second phase inspection effort.
- **Other commercial facilities (tied with 303(d) list impairments)**. Frequency: once in 24 months not less than twice per permit cycle.
- **Municipalities will use their enforcement tools to assure compliance with the implementation of baseline BMPs**. In addition, facilities identified needing coverage under the GIASP will be referred to the Regional Board as non-filers.

C. Programs for Construction Sites

Construction is an activity that is common in the County of Los Angeles. Construction activity may include the rewiring or replumbing of a home or business to denuding native vegetation and the grading of hundreds of acres of land for the construction of hundreds of homes where previously there were none.

Each type of construction activity has its own source of pollutants. For rewiring and replumbing of a home or building, there may not be a soil disturbance resulting in exposed areas that become subject to erosion. However, when there is grading and development of areas larger than a house footprint for example, the potential for erosion increases. As the exposed area is increased and the erosion potential increases, the engineering methods to mitigate or prevent erosion get more complex. The implementation of BMPs such as sandbags as the sole BMP is futile on a 50 acre sloped and graded area but is usually effective on a flat small area such as a single house. A municipality issues permits with requirements to enforce municipal codes and building

codes. In this Permit renewal, Regional Board staff have drafted language that provides more consistency among the Permittees and that distinguishes among the different types and sizes of construction activity that occur within our Region.

Environmental Effects of Construction Activity

There are different environmental effects of construction activity. At a construction site one may find an earthmover being fueled with diesel or an engine being maintained after losing its oil while grading. One may find a slope eroding away for lack of erosion controls or find a street covered in flowing mud due to a lack of sediment controls. One may also see a crew of workers painting a house and then cleaning brushes or equipment in the street with a flowing garden hose and all the paint or anything else being washed down the gutter, into a catch basin inlet, to the storm drain, and into one of our waterways in violation municipal codes, and state and federal law.

As written in the California Storm Water Best Management Practice Handbook for Construction Activity 1993, "Construction usually increases the amount of impervious area causing more of the rainfall to runoff, and increasing the speed at which runoff occurs. Unless properly managed, this increased runoff will erode natural and/or unprotected watercourses causing the water course to widen.... Sedimentation can also contribute to accelerated filling of reservoirs, harbors, and drainage systems."

The prevention of erosion is a key objective to the proposed modifications to the construction program under this draft Order. The Permittees currently oversee of construction sites within the respective Permittees jurisdiction. The oversight of smaller construction sites (those sites under 5 acres) is inconsistent among Permittees. Some Permittees have incorrectly assumed that responsibility begins only after a discharge of pollutants (sediments for example) has left the site. This was not intended in either the Phase I Federal Regulations promulgated on November 16, 1990 or in Board Order 96-054. In this permit reissuance, Regional Board staff proposes to eliminate these inconsistencies and require that the municipalities better coordinate oversight of construction activity within their jurisdiction. The Permittees are ultimately responsible for what enters and exits the portion of the storm drain system that they own and/or operate. It is in the best interest of the Permittees to become familiar with what enters their system and to control as necessary the discharges allowed into their storm drain system.

Changes proposed to the Permit:

- Regional Board staff propose that the Permittees implement requirements for the use of effective erosion and sediment controls at construction sites regardless of size, where applicable.

  The need for proper erosion and sediment controls is very apparent during and immediately after the rains that we experience in Southern California. The environmental effects of erosion are well documented and erosion is something that can be prevented or reduced with the proper foresight and implementation of proper BMPs.

- Requirements for structural source control and non-structural Best Management Practices (BMPs) for controlling runoff at construction sites.

  The need to properly control runoff at construction sites is great. When erosion occurs the sediments generated begin to flow down hill. With adequately engineered and implemented structural or non-structural BMPs, the detrimental environmental effects can be eliminated or minimized with these BMPs. Currently, there are many

manuals and guidance handbooks available to guide a developer. The municipalities in general are aware of these BMPs and working with Regional Board staff, the requirements can be quickly implemented.

- Each Permittee shall require the preparation, submittal, and implementation of a Local Storm Water Pollution Prevention Plan (Local SWPPP) or compliance with a minimum set of BMPs for construction sites of less than 1 acre.

  This requirement is intended to bring the smaller sites into environmental compliance by requiring the implementation of erosion and sediment control or pollution prevention BMPs on smaller sites that other wise would potentially not have any requirements for pollution control. This does not necessarily require that a permit be issued to the small site operator however.

- Each Permittee shall require the preparation, submittal, and implementation of a Local Storm Water Pollution Prevention Plan (Local SWPPP) prior to issuance of a grading permit for construction projects that meet one or more of the following criteria: will result in soil disturbance of one acre or more in size; is within, directly adjacent to, or is discharging directly to an environmentally sensitive area; or is located in a hillside area.

  This is to ensure that a site that is being graded but is less than the size requirements for a General Construction Activities Storm Water Permit (GCASP) have oversight by the local permitting authority. Currently, there are inconsistent requirements for grading among the Permittees and this change would bring consistency and environmental protection for smaller sites conducting grading activities.

- The Permittees shall have a mechanism to review, approve, and enforce any erosion control plan submitted to the Permittee for implementation at construction sites within the legal boundary of the Permittees jurisdiction regardless of size and regardless of whether a GCASP exists for the sites. This mechanism shall be through the requirement of Local Storm Water Pollution Prevention Plans on projects within the Permittees jurisdiction of 1 acre or more.

  The Permittees need to take an active role in what the operators of construction sites are doing to prevent erosion and not wait for the detrimental effects of a rain on a site with inadequate erosion controls and the flow of sediments off site to react with an enforcement action.

- The Permittees, on those sites that need a GCASP shall not issue a grading permit until such time that the Notice of Intent to comply with the State Permit and a copy of the Storm Water Pollution Prevention Plan is submitted to the local authority. This also applies to property transfers between developers.

  This is currently a requirement in Board Order No. 96-054 but not all Permittees have completely or consistently implemented this. Regional Board staff inspect construction sites covered by a GCASP. The Permittees are optimizing the implementation of the State Permit when they implement this requirement. Regional Board staff has found that on occasion, a Permittee issues a grading permit where no state permit has been obtained. State-municipal coordination reduces the amount of sites that Regional Board staff inspect for State requirements. With this requirement fully implemented, Regional Board staff believe that the number of construction sites covered by a State Permit will increase from approximately 1000 to

1500 solely as a result of consistency among the Permittees in issuing grading permits.

- Wet weather inspections are required of all construction sites 1 acre or greater. The Permittees need to conduct wet weather inspections to ensure compliance with local ordinances.

  If all sites are inspected, this allows the Permittees to ascertain compliance and focus educational and enforcement efforts on those that most need it. Additionally, Regional Board staff can assist the Permittees in compliance oversight by conducting joint inspections. The City of Los Angeles estimates that there will be an increase of 15,000 sites. As this is the largest Permittee it is anticipated that this new requirement will not be as burdensome on the rest of the Permittees. Nonetheless, these inspections will be essential to reducing the discharge of pollutants to waters of the United States to the maximum extent practicable.

D. Program to Eliminate Illicit Connections and Illicit Discharges

Background

During dry weather, much of the discharge to storm drain systems consists of wastes and wastewater from non-storm water sources. A significant amount of such discharges may be from illicit discharges or connections, or both. Illicit discharges may occur either through direct connections, such as deliberate or mistaken piping, or through indirect connections, such as dumping, spillage, subsurface infiltration, and washdowns.

The objective of a municipalities' illicit connection/illicit discharge (IC/ID) elimination program should be to detect illicit connections and illicit discharges to the storm drain system, and to promptly eliminate such discharges and connections. Municipalities typically employ the approaches listed below to achieve this objective:

(i) Mapping locations of outfalls of the MS4 and the names and locations of all waters of the U.S. that receive discharges from the outfalls.
(ii) Adopting a storm water/ urban runoff ordinance to prohibit unauthorized non-storm water discharges into the MS4, and implementing appropriate enforcement procedures and actions.
(iii) Implementing a program to detect and eliminate non-storm water discharges to the MS4, including illegal dumping.
(iv) Educating public employees, businesses, and the general public about the dangers associated with illegal discharges and improper disposal.
(v) Establishing a public reporting hotline or other mechanism to report illicit discharges and illegal dumping.
(vi) Establishing measurable goals to evaluate successful program implementation.

Existing IC/ID Elimination Program

The Regional Board approved a model IC/ID elimination program for the Permittees' SQMP on March 23, 1999, and all Permittees implemented this program by July 1999. No performance standards are specified in the existing permit or model program.

All Permittees reported that they implemented the IC/ID Program. Their estimates of fiscal resources required to implement their program ranged widely, with two cities, Culver City and Hermosa Beach, estimating expenditures of $4.2 million and $2.8 million, respectively. At the other end of the range, four cities estimated $0

expenditures, namely La Habra Heights, Lawndale, Maywood (which does not operate a storm drain system), and West Covina. Based on Permittees' estimates of expenditures, the Permittees expended an average of $113,900 in 1999/00. Removing the anomalous estimates for Culver City and Hermosa Beach, the high ranges up to $564,809, as estimated by the City of Los Angeles, and averaged $32,500.

The Permittee's IC/ID activities are summarized in the Attachment A, and results of these activities are summarized in Tables 1 through 12. The reports of suspected illicit discharges and connections, as summarized in the tables, do not appear to bear a relationship with IC/ID expenditures by each Permittee.

Illicit Connections: As designed in the model program, Permittees with storm drain systems under their management rely upon field screening, during regularly scheduled maintenance of the storm drain system, to locate illicit connections. However, most Permittees cannot estimate the length of the storm drain system that was field-screened; nor did the Regional Board require reporting such information.

For the 1999/00 annual reporting period, very few Permittees reported illicit connections. The attached tables show that the numbers of illicit connections varied widely among Permittees, with about half reporting no illicit connections, and with the County reporting 877 suspected illicit connections. Part of the reason for this range is that the County is responsible for maintaining over half[1] of the storm drain system. Also, several Permittees believe that few – if any – illicit connections have been identified in many cities because: (a) many cities are primarily residential, and illicit connections are unlikely to occur from residential land use; and (b) cities in the County of Los Angeles are relatively new vis a vis their eastern counterparts, and adequate controls were in place at the time storm drain connections were installed.

Illicit Discharges: As designed in the model program, Permittees eliminate illicit discharges by preventing spills and, for those that do occur, by responding promptly. To prevent spills, Permittees enacted ordinances prohibiting non-storm water runoff, and are following spill prevention guidance. To respond to discharges, Permittees implement containment and cleanup procedures, coordinate with other agencies, investigate the cause of the discharge and –when the source and responsible party is know – take enforcement action. Additionally, employee training is provided on all of the above.

As with illicit connections, the numbers of illicit discharges varies widely for the annual reporting period 1999/00. The County reported a total of 788 suspected illicit discharges. Among the Cities, results at the high end include 1,876 in the City of Los Angeles, 700 in the City of Beverly Hills, and 450 in Santa Monica. At the other end of the range, many cities reported no incidents of suspected illicit discharges. Based on information provided to date, staff cannot account for this wide range. Audits of the Permittees programs should help clarify this.

Reporting: As designed in the model program, Permittees have implemented procedures to receive reports of illicit discharge and disposal incidents, and to promptly respond and report such incidents. Most rely upon the countywide hotline system maintained by the County. For hazardous substances, Permittees implement additional reporting procedures.

Proposed IC/ID Elimination Program

The Special Provisions Section of the proposed permit requires the Permittees to revise their IC/ID Elimination Program in the SQMP within 180 days of adoption. As specified

[1] The exact length of storm drain systems operated by most cities is unknown.

in the proposed permit, the key revision to the IC/ID Elimination Program shall include a proactive screening program for illicit discharges in priority areas. As Permittees have pointed out, and as staff acknowledges, residential land uses are less likely to have illicit connections. However, staff remains concerned that adequate controls have been in place at all times for proper connections to the storm drain system. Staff's concern is based upon the wide range of illicit connections reported by Permittees with no apparent relation to land use, and also incidents of illicit connections reported separately to the Regional Board. Accordingly, the proposed permit specifies that the Permittees shall revise the SQMP to evaluate illicit connections, prioritize suspected problem areas, and implement a proactive field screening program for such areas (that does not rely upon screening during Permittees' regularly scheduled maintenance of the storm drain system). As set forth in on page 3-3 and in Appendix I of the Permittees' model program, screening tools for the proactive program will include dye tests, smoke tests, and TV inspections.

E. Public Agency Activities

Many Permittees conduct activities that ultimately result in the enhancement of the lives of the residents of the cities in which they live. Some of these activities include but are not limited to: sewage system operations; public construction activities; vehicle maintenance; material storage; street and road maintenance; landscaping; recreational facility management; parking facility management; and public industrial activities; and many other activities. These are essential services that unfortunately have potential side effects. These side effects that are albeit preventable or treatable. The Permittees also conduct some activities that are required to have separate coverage under the 1990 storm water regulations. These services or activities undertaken by the Permittees or by their contractors sometimes mirror industrial activities and construction activities that a Permittee would actually place requirements upon if the work were undertaken by and for a private party The changes proposed by Regional Board staff are to bring consistency to requirements in this draft permit so that the end effect is pollution prevention. The changes include:

- In sewage system operations, the proposed change is that each Permittee will be required to implement a response plan in case of an overflow of the sewage system to the storm drain system. The response plan will have different requirements dependent upon whether the Permittee neither owns nor operates or maintains the sewer system to whether the Permittee owns and operates the sewer system. Because the responsibilities are different, the expectations of the Regional Board should therefore be different and the proposed language reflects this.

- In public construction activity management, the proposed changes include generally, that the requirements in the construction section of the draft permit also apply to the Permittees public construction sites.

  This is proposed to reduce the possibility of a public construction site from becoming a source of pollutants. A public construction site should be a model of what to do efficiently and effectively.

- Each Permittee with a construction site that meets the size requirements for a GCASP shall obtain a permit from the State for the construction activity. Currently the size threshold is 5 acres but will change to 1 acre on March 10, 2003. However, a municipality of less than 100,000 people need not apply for the state permit for a construction activity until March 10, 2003.

This change is for consistency and will assist in the tracking of construction sites operated by Permittees.

- For each Permittee owned construction site, the Permittee shall inspect and replace any ineffective BMPs when found.

  This is to ensure that a properly designed and implemented BMP is properly maintained and is in proper working order during rains.

- Each Permittee will be required to design and ~~construct~~ public facilities using construction and post-construction BMPs consistent with the Standard Urban Storm Water Mitigation Plans (SUSMPs) required under the Construction Planning section of the draft permit.
  This is to be consistent with private projects and their planning, design, and construction requirements.

- For Permittee owned or operated vehicle maintenance, material storage areas, and corporation yards the Permittees will implement site specific storm water pollution prevention plans to minimize pollutant discharges in storm water discharges. Vehicle and equipment wash areas will be required to be self contained or covered, equipped with a clarifier, or other pretreatment device and or properly connected to the sanitary sewer. This requirement will take effect when a new facility is constructed or when an existing site is remodeled or reconstructed.

  This is to be consistent with private projects and their planning, design, and construction requirements.

- For landscape and recreational facilities the changes proposed include the handling and storage of materials under cover or on secondary containment and the inspection of such areas.

  These changes are minimal and simply reflect good house keeping practices that are easily and inexpensively made.

- For storm drain operation and maintenance the changes proposed are the inspection and clean out of catch basin inlets between May 1 and September 30 of each year and the classification of priority catch basins as those 40% or more full for additional cleaning between October 1 and April 30.

  This is to be consistent with the Ventura County Municipal Storm Water Permit.

- The Permittees shall keep records of catch basins cleaned and record overall quantity of wastes collected.

  This change is a tool to assist the Permittees in tracking cleaning and amounts of wastes collected that can also be reported to the public and to federal and state agencies as to what was prevented from flowing to waters of the U.S.

- For storm drain maintenance each Permittee must visually monitor their open channels for debris and identify and prioritize areas of illicit discharge for regular inspection and at least annually remove trash and debris from the channels. Permittees will review existing maintenance activities. After clean out, the material will be properly disposed of.

The annual clean out is a continuation of the 1996 Permit but the visual monitoring is a new requirement to assist the Permittees in prioritizing clean outs and mobilizing cleaning crews.

- For street and road maintenance each Permittee will conduct street sweeping on curbed public streets in their permitted area at a monthly average not less than 4 times per month in areas generating high volumes of trash and at a monthly average not less than 2 times per month in areas generating moderate volumes of trash on traffic collector streets and residential areas (except that for any Permittee within an area subject to a trash TMDL, the Permittee may implement a program which maximizes trash removal by using an effective combination of street sweeping, catch basin clean outs, installation of treatment devices, and/or implementation of any other BMPs that achieve waste load allocations).

  The changes in frequency are to be consistent with the Ventura County Municipal Storm Water Discharge Permit. The language pertaining to complying with a Total Maximum Daily Load (TMDL) Waste Load Allocation (WLA) is new and was created to provide the Permittees subject to TMDLs flexibility in complying with both the TMDL and this Order. By complying with the TMDL, the Permittee will be complying with this Order as it pertains to the listed sections only.

- Permittee-owned parking lots shall be kept clear of debris and oil buildup and cleaned no less than 2 times per month and/or inspected no less than 2 times per month to determine if cleaning is necessary.

  The proposed change is to require the inspection of the lots and to clean them when necessary. The proposed cleanup of oil spots and debris is to keep lots from becoming significant sources of pollutants.

- Each Permittee shall require that sawcutting wastes be recovered and disposed of properly and that in no case shall waste be allowed to enter the storm drain.

  Previously the requirement was that sawcutting not occur during a rain except by emergency. This requirement provides flexibility in implementation of BMPs with the ultimate result being no discharge of pollutants allowed to enter the storm drain system.

- Concrete and other street and road maintenance materials and wastes shall be managed to prevent pollutant discharges; and

  This requirement provides flexibility in implementation of BMPs with the ultimate result being no discharge of pollutants allowed to enter the storm drain system.

- The washout of concrete trucks and chutes shall only occur in designated areas and never into storm drains, open ditches, streets, or catch basins leading to the storm drain system.

  Regional Board staff have seen inconsistent implementation of this requirement and have revised the language to be clearer while providing flexibility in implementation of BMPs with the ultimate result being no discharge of pollutants allowed to enter the storm drain system.

F. New Development And Significant Redevelopment

Water Quality and Storm Water

The water quality impacts of urbanization and urban storm water discharges have been summarized by several recent USEPA reports.[1] Urbanization causes changes in hydrology and increases pollutant loads which adversely impact water quality and impair the beneficial uses of receiving waters. Increases in population density and imperviousness result ~~in changes~~ to stream hydrology including:

(i) increased peak discharges compared to predevelopment levels;
(ii) increased volume of storm water runoff with each storm compared to pre-development levels;
(iii) decreased travel time to reach receiving water; (iv) increased frequency and severity of floods;
(iv) reduced stream flow during prolonged periods of dry weather due to reduced level of infiltration;
(v) increased runoff velocity during storms due to a combination of effects of higher discharge peaks, rapid time of concentration, and smoother hydraulic surfaces from chanellization, and
(vi) decrease infiltration and diminish groundwater recharge.

The Los Angeles County municipal storm water management MS4 program conducts monitoring to:

(i) quantify mass emissions for pollutants,
(ii) identify critical sources for pollutants of concern in storm water;
(iii) evaluate BMP effectiveness, and
(iv) evaluate receiving water impacts.

The monitoring indicates that instream concentrations of pathogen indicators (fecal coliform and streptococcus), heavy metals (such as Pb, Cu, Zn,) and pesticides (such as diazinon) exceed state and federal water quality criteria.[2] The mass emissions of pollutants to the ocean are significant from the urban Watershed Management Areas (WMAs) such as the Los Angeles River WMA, Ballona Creek WMA, and Coyote Creek WMA with the Los Angeles River WMA providing more than seventy percent of the loadings. Critical sources data for facilities (such as auto-salvage yards, primary metal facilities, and automotive repair shops) showed that total and dissolved heavy metals (Pb, Cu, Zn, and Cd), and total suspended solids (TSS) exceeded state and federal water quality criteria by as much as a hundred times. The results are consistent with a limited term study conducted by the Regional Board to characterize storm water runoff in the Los Angeles region before the issuance of MS4 permits.[3] Storm water runoff data from predominant landuses showed similar patterns. Light-industrial, commercial and transportation landuses showed the highest range of exceedances. A pesticide (diazinon) showed higher ranges from residential landuse. The data for polycyclic aromatic hydrocarbons (PAHs), a known

[1] *Storm Water Phase II Report to Congress* (USEPA 1995); *Report to Congress on the Phase II Storm Water Regulations* (USEPA1999); *Coastal Zone Management Measures Guidance* (USEPA 1992)

[2] Los Angeles County 1998-1999 Stormwater Monitoring Report, Los Angeles County Department of Public Works (1999). Data summarizes results of storm water monitoring for the most recent year and the past five years.

[3] *Storm Water Runoff in Los Angeles and Ventura Counties, Final Report* (1988), California Regional Water Quality Control Board, Los Angeles, SCCWRP Contribution C292. This study found the highest mean concentrations of pollutants of concern such as heavy metals in the urban watershed rivers and that they contributed significant loads to the ocean.

pollutant of concern in urban storm water runoff, is inconclusive but improved analytical methods may yield more definitive results next year. Receiving water impacts studies found that storm water discharges from urban watersheds exhibit toxicity that are attributable to heavy metals. Biosurveys of the sea-bottom showed bioaccumulation of toxicants. Sediment analysis showed higher concentrations of pollutants such as Pb and PAHs than rural watersheds (2 to 4 times higher). In addition, toxicity of dry weather flows was observed with the cause of toxicity undetermined.[1] Previous studies have found chemical concentration of pollutants that exceed state and federal water quality criteria in storm drains flowing to the ocean,[2] and that there are adverse health impacts from swimming near them.[3]

Treatment BMP requirements on new development and redevelopment offer the most cost effective strategy to reduce pollutant loads to surface waters. Retrofit of existing development will be expensive and may be considered on a targeted basis. Studies on the economic impacts of watershed protection indicate that storm water quality management has a positive or at least neutral economic effect while greatly improving the quality of surface waters.[4]

Municipal storm water regulations at 40 CFR 122.26 require that pollutants in storm water be reduced to the maximum extent practicable (MEP). The USEPA's definition is intentionally broad to provide maximum flexibility in MS4 permitting and to and to give municipalities the opportunity to optimize pollutant reductions on a program-to-program basis.[5] The definition of MEP has generally been applied to mean implementation of economically achievable management practices. Because storm water runoff rates can vary from storm to storm, the statistical probabilities of rainfall or runoff events become economically significant and are central to the control of pollutants through cost effective BMPs. Further, it is recommended that storm water BMPs be designed to manage both flows and water quality for best performance. [6] It is equally important that treatment BMPs once implemented be routinely maintained.

Financing the MS4 program offers a considerable challenge for municipalities. A proven successful financing mechanism is the establishment of a storm water utility.[7] Utility fees, which are assessed on the property owner based on some estimate of storm water runoff generated for the site, are a predictable and dedicated source of fund. Utility fees can also provide a mechanism to provide incentives to commercial and industrial property owners to reduce impervious surface areas. Such incentives offer flexibility to property owners to choose the better economic option – paying more fees or improvements to reduce runoff from the site.

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[1] *Toxicity of Dry Weather Flow from the Santa Monica Bay Watershed*, Bay, S. et al (1996), Bull. Southern California Acad. Sci. 5(1), pp. 33-45. The paper describes preliminary results on dry weather toxicity which have been confirmed by the MS4 monitoring program.

[2] *Chemical Contaminant Release into Santa Monica Bay, Final Report*, American Oceans Campaign , Santa Monica (1993)

[3] *The Health Effects of Swimming in Ocean Water Contaminated by Storm Drain Runoff*, Haile, R.W. et al. (1999), Epidemiology 10: 355-363). The study found higher risks of respiratory and gastrointestinal symptoms from swimmers.

[4] *The Economics of Watershed Protection*, T. Schuler (1999), Center for Watershed Protection, Endicott, MD. The article summarizes nationwide studies to support the statement that watershed planning and storm water management provide positive economic benefits.

[5] Storm Water Phase II Final Rule – Pre-Federal Register Version, p 87 (USEPA 1999). See USEPA's discussion in response to challenges that the definition is sufficiently vague to be deemed adequate notice for purposes of compliance with the regulation.

[6] *Urban Runoff Pollution – Summary Thoughts* – The State of Practice Today and For the 21st Century. Wat. Sci. Tech. 39(2) pp. 353-360. L.A. Roesner (1999)

[7] *Preliminary Data Summary of Urban Storm Water Best Management Practices* (1999), Report No.-EPA-821-R-99-012, USEPA.. The document reviews municipal financing mechanisms and summarizes experience in the U.S. to date.

The American Society of Civil Engineers (ASCE) and the Water Environment Federation (WEF) have recommended a numerical BMP design standard for storm water that is derived from a mathematical equation to maximize treatment of runoff volume for water quality based on rainfall/ runoff statistics and which is economically sound (ASCE/ WEF 1998).[1] The maximized treatment volume is cut-off at the point of diminishing returns for rainfall/ runoff frequency. On the basis of this equation the maximized runoff volume for 85 percent treatment of annual runoff volumes in California can range from 0.08 to 0.86 inch depending on the imperviousness of the watershed area and the mean rainfall.[2]

Other methods of establishing numerical BMP design standards include: (i) Percent treatment of the annual runoff; (ii) Full treatment of runoff from rainfall event equal to or less than a predetermined size; (iii) Percent reduction in runoff based on a rainfall event of standard size.[3] These numerical design standards have been applied to Development Planning in Puget Sound, WA; Alexandria, VA; Montgomery County, MD; Denver, CO, Orlando, FL Portland, OR and Austin, TX.

The City of Seattle requires that where new development coverage is 750 square feet or more, storm water detention be provided based on a 25 year storm return frequency and a peak discharge rate not to exceed 0.2 cubic foot per second.[4] Additionally, for projects that add more than 9,000 square feet in developmental coverage, the peak drainage water discharge rate is limited to 0.15 cubic feet per second per acre for a two-year storm. The City of Denver requires new residential, commercial, and industrial developments to capture and treat the 80th percentile runoff event. This capture and proper treatment is estimated to remove 80 to 90 percent of the annual TSS load which is a surrogate measure for heavy metal and petroleum hydrocarbon pollutants.[5]

Some States have established numerical standards for sizing storm water post-construction BMPs for new development and significant redevelopment. The State of Maryland has established storm water numerical criteria for water quality of 0.9 to 1 inch and BMP design standards in a unified approach combining water quality, stream erosion potential reduction, groundwater recharge, and flood control objectives.[6] The State of Florida has used numerical criteria to require treatment of storm water from new development since 1982 including BMPs sized for 80 percent (95 percent for impaired waters) reduction in annual total suspended solids load derived from the 90 percent (or greater for impaired waters) annual runoff treatment volume method for water quality.[7] The State of Washington has proposed at least six different approaches of establishing storm water numerical mitigation criteria for new development which add 10,000 square feet of impervious surface or more for residential development and 5,000 square

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[1] In Urban Runoff Quality Management, WEF Manual of Practice No. 23, ASCE Manual and Report on Engineering Practice No. 87. WEF, Alexandria, VA; ASCE, Reston, VA. 259 pp. (1998).

[2] Sizing and Design Criteria for Storm Water Treatment Controls, Presentation to California Storm Water Quality Task Force, November 13, 1998, Sacramento, CA. L.A. Roesner, Camp Dresser McKee .

[3] Sizing and Design Criteria for Stormwater Quality Infrastructure, Presentation at California Regional Water Quality Control Board Workshop on Standard Urban Storm Water Mitigation Plans, August 10, 1999, Alhambra, CA., R.A. Brashear, Camp Dresser McKee.

[4] City of Seattle Municipal Code, Chapter 22.802.015 – Storm water, drainage and erosion control requirements.

[5] Urban Storm Drainage, Criteria Manual – Volume 3, Best Management Practices, Urban Drainage and Flood Control District, Denver, CO (1999). Manual provides detail design criteria for new development for the Denver Metropolitan area.

[6] Maryland Storm Water Design Manual - (Maryland Department of the Environment 2000)..

[7] Florida Development Manual: A Guide to sound Land and Water Management (Florida Department of Environmental Protection 19xx). The manual describes structural and non-structural construction and post construction BMPs design criteria.

feet of impervious surface or more for other types of development[1]. The mitigation criteria options include the 90th percentile 24-hour rainfall event and the six month 24 hour rainfall event. The State of Maryland

On a national level, the USEPA is planning to standardize minimum BMP design and performance criteria for post-construction BMPs under Title III of the Clean Water Act and will likely build from the experience of effective state and local programs to establish national criteria.[2] The USEPA, based on the National Urban Runoff Program, supports the first half-inch of rainfall as generating first flush runoff.[3] First flush runoff is associated with the highest pollutant concentrations, and not pollutant load. The USEPA considers the first flush treatment method, the rainfall volume method, and the runoff capture volume method as common approaches for sizing of water quality BMPs.

BACKGROUND IN THE LOS ANGELES REGION

Los Angeles County and municipalities within the County (except the City of Long Beach) implement a municipal storm water program to reduce storm water and urban runoff pollution under the requirements of Board Order No. 96-054. The Los Angeles County Municipal Storm Water Permit include requirements that Standard Urban Storm Water Mitigation Plans (SUSMPs) be prepared for priority planning projects and that they include appropriate Best Management Practices (BMPs) and guidelines to reduce pollutants in storm water to the maximum extent practicable (Permit Pt. 2. III.A.)

On April 22, 1999, the Regional Board approved a List of BMPs for MS4 Permittees to select from and require implementation of the most effective BMPs in their Development Planning and Development Construction programs (Board Resolution No. 99-03).

Los Angeles County Department of Public Works (LACDPW), on behalf of the Permittees, submitted SUSMPs for Regional Board Executive Officer on July 22, 1999, which was revised and resubmitted on August 12, 1999.

The Regional Board on January 26, 2000, approved a Final SUSMP which included requirements for the following categories. The Regional Board Executive Officer issued a Board Approved Final SUSMP on March 8, 2000, which established new development and significant redevelopment conditions for all projects in the following categories,

(i) 10 or more home subdivision;
(ii) 100,000+ square-foot commercial development;
(iii) automotive repair facilities;
(iv) retail gasoline outlets;
(v) restaurants;
(vi) parking lots more than 5,000 square feet or more than 25 parking spaces

[1] Storm Water Management in Washington State Volumes 1 – 5. Public Review Draft (Washington Department of Ecology 1999). The volumes 1,3 and 5 are most relevant to new development standards and cover Hydrologic and Flow Control Designs, Minimum Technical Requirements and Treatment BMPs. The volumes will be adopted as statewide standards in early 2000 after completion of public hearings according to the agency.

[2] Storm Water Phase II Final Rule – 64 Fed. Reg. 68759. See USEPA's discussion on construction and post-construction BMP requirements for Phase II.

[3] A Watershed Approach to Urban Runoff: Handbook for Decisionmakers, Terene Institute and USEPA Region 5 (1996). See discussion on sizing rules for water quality purposes, p 36.

(vii) hillside located single-family dwelling,
(viii) construction projects adjacent to, in, or discharging directly to environmentally sensitive areas

The SUSMP included numerical design criteria for structural and treatment control BMPs.

Numerical Design Standard

Mitigate (infiltrate or treat) storm water runoff from either:

1. each runoff event up to and including the 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998)*, or

2. the annual runoff volume, based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in *California Stormwater Best Management Practices Handbook – Industrial/ Commercial*, (1993), or

3. the volume of runoff produced from each and every storm event up to and including 0.75 inch of rainfall, prior to its discharge to a storm water conveyance system, or

4. the volume of runoff produced from each and every storm event up to and including a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event.

The Regional Board action was appealed to the State Water Resources Control Board by a coalition of cities, the Building Industry of Southern California, and the Western States Petroleum Association. The State Board issued a precedential decision[1] on the matter in Order WQ 2000-11, largely sustaining the SUSMP as approved by the Regional Board. The State Board amended the SUSMP to limit its application to discretionary projects as defined by CEQA, eliminated the category for projects in environmentally sensitive areas, and set aside the requirement for retail gasoline outlets to treat storm water until a threshold is developed in the future. In addition the State Board articulated its support for Regional solutions and the mitigation banking.

The Regional Board staff proposes to modify SUSMP requirements to clarify implementation, make it consistent with recent Regional Board actions, and where appropriate cure procedural and other deficiencies identified by the State Board in its SUSMP ruling. In the revised permit, staff proposes to:

(a) require SUSMPs for Hillside developments that are 10,000 square feet or more. Hillside residential homes below the threshold would be required to incorporate BMPs to facilitate drainage and pollutant removal but would not be subject to the numerical mitigation criteria. Currently, all hillside developments regardless of size are subject to the numerical mitigation criteria.

[1] State Water Board Order WQ 2000-11: SUSMP; Memorandum from Chief Counsel to Regional Board Executive Officers, (December 26, 2000) discusses statewide policy implications of the decision.

(b) require Retail gasoline stations be subject to the numerical mitigation criteria, where they meet certain thresholds such as: (a) projected gasoline output of 25,000 gallons per month or more; (b) four or more fueling islands, (c) 24 or more dispensing meters; (d) projected average daily traffic of 100 cars or more; and (e) 5,000 square feet or more of surface area.

(c) amend the 100,000 square feet commercial development to include heavy industrial development. The category will be designated 'industrial/ commercial'.

(d) lower the industrial/ commercial category threshold from 100,000 square feet to 1-acre (40,000 square feet) beginning March 9, 2003, to be consistent with U.S. EPA Phase 2 Final Rule for small construction projects.

(e) require the application of new development requirements to all developments, both ministerial and discretionary. As presently implemented the SUSMP requirements apply to only discretionary projects as defined under the California Environmental Quality Act.

(f) require to include as a category projects situated in, adjacent to, or discharging directly to environmentally sensitive areas where the development (a) creates 2,500 square feet or more of impervious area, or (b) alter the area of imperviousness of the site to ten or more percent of the naturally occurring condition, and (c) discharge storm water and urban runoff that is likely to impact a sensitive biological species or habitat.

(g) include numerical mitigation criteria for flow-based structural and treatment BMPs to be consistent with recent municipal storm water permits issued by the Regional Board.[1] These criteria are:

(a) the flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity, or

(b) the flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County

(c) the flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above

In addition staff propose that under the New Development Requirements Permittees update CEQA Documents with immediate effect and General Plans no later than 18 months from permit adoption to address storm water considerations. Both these requirements currently exist in the permit but there is no firm deadline for complying with the requirement.

VII. MONITORING PROGRAM

Background:

Using data collected from a monitoring program, storm water management efforts can be prioritized, helping limited resources be most effective in improving receiving water quality. For example, a monitoring program can provide data that can allow for specific receiving waters and watersheds to be targeted for urban runoff management and education efforts based on their

[1] Board Order No. 00-018; NPDES Permit No. CAS004002. Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges within Ventura County Flood Control District, County of Ventura, and the Cities of Ventura County

need. Particular pollutants and their sources can also be identified and targeted using monitoring data. In addition, monitoring data can be useful in assessing the effectiveness of an urban runoff management program. Successful efforts that have resulted in receiving water quality improvements can be analyzed for application elsewhere, while areas that need greater efforts can also be identified. In general, a comprehensive monitoring program can supply a wealth of data that can be used in a wide range of applications for improving water quality.

The following is a discussion of each of the principal aspects of the proposed monitoring program.

Previous Monitoring and Future Recommendations:

Monitoring of storm water quality in Los Angeles County began in the 1994-95 storm season, as a requirement of the 1990 Municipal Storm Water permit. Over the past five years, the storm water monitoring program consisted of four main components: mass emission monitoring, land use monitoring, critical source monitoring, and a Santa Monica Bay receiving water study. Many other studies that provide information on the impacts of municipal storm water discharge on receiving waters have been conducted in the Southern California Bight. The Storm Water Monitoring Program should be based on a sound understanding of storm water issues and the results of previous monitoring efforts to avoid duplicative or unproductive monitoring and to ensure that the data collected is the most scientifically valid and useful as practicable.

Storm Water Monitoring Program:

The objectives of this program include, but are not limited to, discharge characterization, source identification, and assessment of the chemical, physical, and biological impacts to receiving waters resulting from municipal storm water discharges.

A. Mass Emissions Monitoring

- NEW REQUIREMENT:
  The Principal Permittee shall monitor mass emissions from six stations, as opposed to four. Dominguez Channel and Coyote Creek have been added. The number of storm events required to be monitored was decreased so the resources could be shifted to another part of the monitoring program.

  JUSTIFICATION:
  The Dominguez Channel watershed contains the highest percentage of impervious area. The Center for Watershed Protection has linked overall watershed imperviousness to storm water quality problems. Also, the Dominguez Channel Watershed is a highly industrialized area and the storm water runoff needs to be characterized to determine its contribution of pollutants in the San Pedro Bay. The County has been monitoring a Coyote Creek mass emission station and proposed to continue to do so because the Coyote Creek watershed covers 22 percent of the San Gabriel River watershed.

- NEW REQUIREMENT:
  Several detection limits have been decreased, pursuant to the California Toxics Rule. To be in compliance with state and federal regulations, all MDLs shall be less than CTR and Ocean Plan standards. If this is not feasible, the Discharger shall use analytical methods with the lowest MDL. All parameters with lower detection limits, pursuant to the CTR, shall be monitored for at all stations, even if they passed the 25% test in the previous permit. The Policy for Implementation of Toxics Standards for Inland Surface

Waters, Enclosed Bays, and Estuaries of California, 2000 was used to determine MDLs.

B. Toxicity Studies

- NEW REQUIREMENT:
  The Principal Permittee shall conduct water column toxicity studies for each mass emission station. Toxicity Identification Evaluations (TIE) will be conducted when consecutive samples show toxicity. When a toxic pollutant is identified, Toxicity Reduction Evaluations (TRE) will be conducted.

  JUSTIFICATION:
  Previous storm water quality monitoring has identified toxicity in the Los Angeles River, the San Gabriel River, Ballona Creek, and the Santa Monica Bay demonstrating the need for continued studies and source identification. The TIE requirement is consistent with that in the City of Long Beach Municipal Storm Water Permit. Toxicity testing and TIEs are also required at all mass emission stations in Ventura County. TREs are necessary follow actions for identifying toxicity. TRE's include identifying the source of a toxic pollutant, determining and implementing appropriate management measure to reduce or eliminate the pollutant, and then confirming the reduction in toxicity from that pollutant.

C. Tributary/Source Identification Monitoring

- NEW REQUIREMENT:
  The Principal Permittee shall develop and implement a tributary/source identification monitoring program. At a minimum the program shall consist of station identification, monitoring, and analysis of data for a minimum of 20 tributary stations throughout the five established receiving waters. The objective of this requirement is to identify the sources of pollutants in each receiving water.

  JUSTIFICATION:
  This requirement is in response to the need for source identification and to better characterize the watersheds. Existing monitoring data has identified the need for locating sources of toxicity and contamination. The number of stations is based on the total number of major, impaired tributaries in Los Angeles County watersheds.

D. Receiving Waters Studies

- NEW REQUIREMENT:
  The Principal Permittee shall study the impacts of storm water on receiving waters, including sediment toxicity, sediment transport, plume dispersion, and benthic communities. The Principal Permittee is encouraged to participate in regional monitoring to accomplish the goals of the receiving waters studies.

E. Urban Stream Bioassessment Monitoring

- NEW REQUIREMENT:
  The Principal Permittee shall develop and implement an urban stream bioassessment monitoring program, consisting of station identification, sampling, monitoring, and analysis of data for a minimum of 20 stations in order to determine the biological and physical integrity of urban streams within Los Angeles County.

  JUSTIFICATION:
  Bioassessment monitoring is now a standard requirement for point source dischargers through individual NPDES permits. This data will compliment and be valuable to the Statewide Ambient Monitoring Program. This requirement is consistent with the San Diego MS4 permit.

F. General

- NEW REQUIREMENT:
  All samples will be analyzed for Total Suspended Solids (TSS) and Suspended-Sediment Concentration (SSC), and particle size distribution.

  JUSTIFICATION:
  The basis for this requirement is the USGS study, "Comparability of Suspended-Sediment Concentration and Total Suspended Solids Data", August 2000. According to the study, the use of the TSS analytical method to determine concentrations of suspended material can result in unacceptably large errors and is fundamentally unreliable. The TSS analytical method for measuring the concentration of suspended solid-phase material in surface waters involves measuring the dry weight of sediment from a subsample of the original, whereas SSC data are produced by measuring the dry weight of sediment in the entire sample. To summarize, results of the TSS analytical method tend to produce data that are negatively biased by 25 to 34% with respect to SSC data. The biased data can result in errors in load computations of several orders of magnitude. Furthermore, there is no reliable, straightforward way to adjust TSS data to estimate suspended sediment without corresponding SSC data.

  The study indicates that two factors associated with TSS analysis can contribute to biased data. Using a pipette or pouring can cause the subsample to be deficient in sand-sized material, due to rapidly falling sand-sized material and large particles that can plug the pipette. Whereas the amount of sand-sized material in a SSC sample has no bias because all sediment in the original sample is used. Bias was found to be proportional to the percentage of sand-sized particles in samples. Therefore, Particle size distribution data should be determined to help determine the most appropriate and accurate method of obtaining suspended sediment data.

Total maximum Daily Loads Scheduled for Implementation in Los Angeles County Watershed Within 5 Years

Waterbody	*TMDL*
Malibu	Coliform
Malibu	Nutrients
Malibu Creek Lakes and Tributaries	Metals

Ballona Creek	Trash
Ballona Creek	Coliform
Ballona Creek	Historic Pesticides
Ballona Creek	Metals
Dominguez Channel/LA Harbor	Coliform
Los Angeles River	Trash
Los Angeles River	Nutrients
Los Angeles River	Coliform
Los Angeles River	Chlorpyrifos
Los Angeles River	Metals
San Gabriel River	Nutrients
San Gabriel River	Coliform
San Gabriel River	Metals
San Gabriel Lakes	Coliform
Santa Monica Bay Beaches	Coliform
Santa Monica Bay Beaches	Metals
Santa Monica Bay Beaches	Chlordane

ATTACHMENT A

Table 1: Illicit Connections 1999/00
County of Los Angeles, and Ballona Creek and Urban Santa Monica Bay Watershed Management Areas

Permittee	Number of Illicit Connections:				
	Investigated	Exempt	Discharges Terminated	Removed	Other
County of Los Angeles	877	124	0	336	417[2]
Beverly Hills	0				
Culver City	None				
El Segundo	0	0	0	0	0
Hermosa Beach	None				
Manhattan Beach	0				
Palos Verdes Estates	0	1	3	3	0
Rancho Palos Verdes	None				
Redondo Beach	0				
Rolling Hills	0	0	0	0	
Rolling Hills Estates	0				
Santa Monica	70	10	50	10	0
West Hollywood	None				
Total	**947**	**135**	**53**	**349**	**417**

Table 2: Illicit Discharges 1999/00
County of Los Angeles, and Ballona Creek and Urban Santa Monica Bay Watershed Management Areas

Permittee	Number of Illicit Discharges:					
	Inves-tigated	No Evidence	Exempt	Under Different NPDES Permit	Discon-tinued	Source Not Determined
County of Los Angeles	788	95	15	2	411	265
Beverly Hills	700	70[1]	35[1]	35[1]	525[1]	35[1]
Culver City	25	0	0	0	25	0
El Segundo	10	7	1	0	2	0
Hermosa Beach	10	2	0	0	8	0
Manhattan Beach	1	0	0	0	1	0
Palos Verdes Estates	6	2	1	0	3	0
Rancho Palos Verdes	6	0	0	0	6	0
Redondo Beach	31	3	0	0	25	3
Rolling Hills	0	N/A	N/A	N/A	N/A	N/A
Rolling Hills Estates	1				1	
Santa Monica	450	5	22	5	398	20
West Hollywood	9	1	0	0	8	0
Total	**2037**	**185**	**74**	**42**	**1413**	**323**

[2] The County of Los Angeles reported under the "Other" category of illicit connections that 126 connections were already permitted but not properly identified, and that 291 illicit connections are still under investigation.
[1] Documented as percentage.

Table 3: Illicit Connections 1999/00
Dominguez Channel and Los Angeles Harbor
Watershed Management Areas

Permittee	Number of Illicit Connections:				
	Investigated	Exempt	Discharges	Removed	Other
Carson	8	0	0	0	0
Hawthrone	None				
Inglewood	3				3[1]
Lawndale	None				
Lomita	1	0	1	0	0
Torrance	0				
Total	**12**	**0**	**1**	**0**	**3**

Table 4: Illicit Discharges 1999/00
Dominguez Channel and Los Angeles Harbor
Watershed Management Areas

Permittee	Number of Illicit Discharges:					
	Investigated	No Evidence	Exempt	Under Different NPDES Permit	Discontinued	Source Not Determined
Carson	24	12	0	0	0	24
Hawthrone	10	0	1	0	9	0
Inglewood	3				3	
Lawndale	2	1	0	0	1	0
Lomita	14	0	0	0	14	0
Torrance	0					
Total	**53**	**13**	**1**	**0**	**27**	**24**

[1] The City of Inglewood reports that 3 illicit connections are to be eliminated.

Table 5: Illicit Connections 1999/00
Los Angeles River
Watershed Management Areas

Permittee	Number of Illicit Connections				
	Investigated	Exempt	Discharges Terminated	Removed	Other
Alhambra	0	0	0	0	0
Arcadia	0	0	0	0	0
Bell	0	N/A	N/A	N/A	N/A
Bell Garden	0	0	0	0	0
Burbank	4		3	1	
Commerce	14	8	6	0	0
Compton	8	6	2	0	0
Cudahy	0	N/A	N/A	N/A	N/A
El Monte	None				
Glendale					
Hidden Hills	0	N/A	N/A	N/A	N/A
Huntington Park	2			2	
La Canada Flintridge	0				
Los Angeles	29	7	8	11	3
Lynwood	0	0	0	0	0
Maywood	0	0			
Monrovia	0	N/A	N/A	N/A	N/A
Montebello	21	0	11	1	9
Monterey Park	2	0	0	2	0
Paramount	0				
Pasadena	None				
Rosemead	0				
San Fernando	None				
San Marino	0	N/A			
Sierra Madre	None				
Signal Hills	None				
South El Monte	None				
South Gate	2	0	1	1	
South Pasadena					
Temple City					
Vernon	1	0	0	0	1
Total	**83**	**21**	**31**	**18**	**13**

Table 6: Illicit Discharges 1999/00
Los Angeles River
Watershed Management Areas

Permittee	Number of Illicit Discharges:					
	Invetigated	No Evidence	Exempt	Under Different NPDES Permit	Discontinued	Source Not Determined
Alhambra	0	0	0	0	0	0
Arcadia	11	1	0	0	10	0
Bell	0	N/A	N/A	N/A	N/A	N/A
Bell Garden	0	0	0	0	0	0
Burbank	47	2	1	0	43	1
Commerce	21	4	8	0	9	0
Compton	17	9	5	0	3	0
Cudahy	0	N/A	N/A	N/A	N/A	N/A
El Monte	50	0	0	0	48	2
Glendale	?	?	?	?	?	?
Hidden Hills	0	N/A	N/A	N/A	N/A	
Huntington Park	2				2	
La Canada Flintridge	75	15	0	0	60	0
Los Angeles	1896	227	2	5	700	962
Lynwood	0	0	0	0	0	0
Maywood	1		1			
Monrovia	0	N/A	N/A	N/A	N/A	
Montebello	13	12	11	0	0	1
Monterey Park	19	0	0	0	18	1
Paramount	0					
Pasadena	39	1	0	0	37	1
Rosemead	0					
San Fernando	12	1	0	0	11	0
San Marino	0	N/A				
Sierra Madre	3	0	0	0	3	0
Signal Hills	13	3	0	0	10	0
South El Monte	15	0	0	0	15	0
South Gate	28	3	1	0	22	2
South Pasadena						
Temple City						
Vernon	10	0	0	0	9	0
Total	**2271**	**278**	**29**	**5**	**1000**	**970**

Table 7: Illicit Connections 1999/00
Malibu Creek and Rural Santa Monica Bay
Watershed Management Areas

Permittee	Number of Illicit Connections:				
	Investigated	Exempt	Discharges Terminated	Removed	Other
Agoura Hills	0	0	0	0	
Calabasas	2				2
Malibu	15	0	7	0	
Total	**17**	**0**	**7**	**0**	**2**

Table 8: Illicit Discharges 1999/00
Malibu Creek and Rural Santa Monica Bay
Watershed Management Areas

Permittee	Number of Illicit Discharges:					
	Investigated	No Evidence	Exempt	Under Different NPDES Permit	Discontinued	Source Not Determined
Agoura Hills	11	1	0	0	10	0
Calabasas	12	1			10	
Malibu	15	7	0	0	7	8
Total	**38**	**9**	**0**	**0**	**27**	**8**

Table 9: Illicit Connections 1999/00
San Gabriel River
Watershed Management Areas

Permittee	Number of Illicit Connections:				
	Investigated	Exempt	Discharged Terminated	Removed	Other
Artesia	0				
Azusa	0				
Baldwin Park	None				
Bellflower	0	0	0	0	0
Bradbury	0				
Cerritos	0	0	0	0	0
Claremont	0				
Covina	0				
Diamond Bar	0				
Duarte	3	0	1	0	2
Glendora	4	0	1	0	3
Hawaiian Garden	0				
City of Industry	None				
Irwindale	9	0	9	0	0
La Habra Heights	0				
La Mirada	1	1			
La Puente	0				
La Verne	0				
Lakewood	11	5	6	0	0
Norwalk	6	0	6	0	N/A
Pico Rivera	0				
Pomona	12	10	2	0	0
San Gabriel	2	0	0	2	0
Santa Fe Spring	0	N/A	N/A	N/A	N/A
Walnut	0				
West Covina	0				
Whittier	8	3	5	2	0
Total	**56**	**19**	**30**	**4**	**5**

Table 10: Illicit Discharges 1999/00
San Gabriel River
Watershed Management Areas

Permittee	Number of Illicit Discharges:					
	Investigated	No Evidence	Exempt	Under Different NPDES Permit	Discontinued	Source Not Determined
Artesia	10	4	0	0	4	2
Azusa	1				1	
Baldwin Park	27	5	0	0	20	2
Bellflower	8	8	0	0	0	0
Bradbury	0					
Cerritos	8	0	0	0	8	0
Claremont	4	1	0	0	3	
Covina	32	5	4	0	18	5
Diamond Bar	1.					1
Durate	3	3	0	0	0	3
Glendora	14	13	0	0	12	0
Hawaiian Garden	0					
City of Industry	None					
Irwindale	23	0	0	0	20	3
La Habra Heights	1			1		
La Mirada	16		3		13	
La Puente	1				1	
La Verne	1				1	
Lakewood	17	0	2	0	9	6
Norwalk	6	0	0	0	6	0
Pico Rivera	12	6	0	0	6	0
Pomona	78	18	8	10	16	26
San Gabriel	4	0	0	0	3	1
Santa Fe Spring	12	3	0	0	0	9
Walnut	2			1	1	0
West Covina	48	6	0	0	7	35
Whittier	32	12	18	15	17	3
Total	**361**	**84**	**35**	**27**	**166**	**96**

DRAFT

LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD

ORDER No. 01-XXX
(NPDES No. CAS614001)

WASTE DISCHARGE REQUIREMENTS FOR MUNICIPAL STORM WATER AND URBAN RUNOFF DISCHARGES WITHIN THE COUNTY OF LOS ANGELES AND THE INCORPORATED CITIES, EXCEPT FOR THE CITIES OF LONG BEACH AND SANTA CLARITA

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STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. 01-xxx
NPDES PERMIT NO. CAS004001
WASTE DISCHARGE REQUIREMENTS
FOR
MUNICIPAL STORM WATER AND URBAN RUNOFF DISCHARGES WITHIN THE COUNTY OF LOS ANGELES, AND THE INCORPORATED CITIES, EXCEPT THE CITIES OF LONG BEACH AND SANTA CLARITA

FINDINGS

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter referred to as the Regional Board) finds:

Existing Permit and Report of Waste Discharge

1. The Los Angeles County Flood Control District, the County of Los Angeles, and 83 incorporated cities within the Los Angeles County Flood Control District (see Attachment A, List of Permittees), hereinafter referred to separately as Permittees and jointly as the Discharger, discharge or contribute to discharges of storm water and urban runoff from municipal separate storm sewer systems (MS4s), also called storm drain systems. The discharges flow to water courses within the Los Angeles County Flood Control District and into receiving waters of the Los Angeles region. These discharges are covered under countywide waste discharge requirements contained in Order No. 96-054 adopted by this Regional Board on July 15, 1996, and which rescinded in part Order No. 90-079 adopted by this Regional Board on June 18, 1990. Order No. 96-054 also serves as a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of rnunicipal storm water.

Nature of Discharges and Sources of Pollutants

2. Storm water discharges consist of surface runoff generated from various land uses in all the hydrologic drainage basins that discharge into water bodies of the State. The quality of these discharges varies considerably and is affected by the hydrology, geology, land use, season, and sequence and duration of hydrologic events. The primary constituents of concern currently identified by the Los Angeles County Flood Control District 1994-2000 Integrated Receiving Water Impacts Report are cyanide, indicator bacteria, total dissolved solids, turbidity, total suspended solids, nutrients, total aluminum, dissolved cadmium, copper, lead, total mercury, nickel, zinc, bis(2-ethylhexyl)phthalate, polycyclic aromatic hydrocarbons (PAHs), diazinon, and chlorpyrifos.

3. Certain pollutants present in storm water and/or urban runoff may be derived from extraneous sources that Permittees have no or limited jurisdiction over. Examples of such pollutants and their respective sources are: PAHs which are products of internal combustion

engine operation, nitrates from atmospheric deposition, heavy metals, lead from fuels, copper from brake pad wear, zinc from tire wear, dioxins as products of combustion, and bis (2-ethylhexyl) phthalate and mercury as resulting from atmospheric deposition, and natural-occurring minerals from local geology. However, Permittees can implement control measures to reduce entry of these pollutants into storm water and their discharge to receiving waters.

4. These compounds can have damaging effects on both human health and aquatic ecosystems. In addition, the high volumes of storm water discharged from MS4s in areas of urbanization can significantly impact aquatic ecosystems due to physical modifications such as bank erosion and widening of channels. It is anticipated that, due to the nature of storm water events (i.e., large volumes of water and high velocities) that there may be short-term, reversible impacts to beneficial uses that are not directly related to water quality.

5. Water quality assessments conducted by the Regional Board identified impairment, or threatened impairment, of beneficial uses of water bodies in the Los Angeles region. The causes of impairments include pollutants of concern identified by the County of Los Angeles in the Integrated Receiving Water Impacts Report (1994-2000).

6. Development and urbanization especially threaten environmentally sensitive areas. Such areas have a much lower capacity to withstand pollutant shocks than might be acceptable in the general circumstance. In essence, development that is ordinarily insignificant in its impact on the environment may in a particular sensitive environment become significant. These environmentally sensitive area include Areas of Special Biological Significance, water bodies designated with a RARE beneficial use, Significant Natural Areas, and impaired water bodies listed under Clean Water Act Section 303(d).

7. The increased volume, increased velocity, and discharge duration of storm water runoff from developed areas greatly accelerates downstream erosion and impairs stream habitat. Studies have demonstrated a direct correlation between the degree of imperviousness of an area and the degradation of its receiving waters. Significant declines in the biological integrity and physical habitat of streams and other receiving waters have been found to occur with as little as 10 percent conversion from natural to impervious surfaces. Percentage impervious cover is a reliable indicator and predictor of potential water quality degradation expected from new development. (*Impervious Cover as An Urban Stream Indicator and a Watershed Management Tool*, Schuler, T. and R. Claytor, In, Effects of Water Development and Management on Aquatic Ecosystems (1995), ASCE, New York.)

Permit Background

8. The Permittees have filed a Report of Waste Discharge (ROWD), dated February 1, 2001, and has applied for renewal of its waste discharge requirements and an NPDES permit to discharge wastes to surface waters. The ROWD includes the Storm Water Quality Management Plan (SQMP) and a Monitoring Program.

9. The SQMP contains programs previously approved under Board Order No. 96-054 in the following areas:

Public Information and Participation
Development Construction
Illicit Connection/Illicit Discharge Elimination Program
Development Planning
Public Agency Activities

These programs will be revised pursuant to the provisions of this Order after adoption.

10. The Regional Board has reviewed the ROWD and has determined it to be complete under the reapplication policy of MS4s issued by the USEPA (61 *Fed. Reg.* 41697). The Regional Board finds that the Permittee's proposed Storm Water Management Plan is acceptable.

11. Studies indicate that facilities with paved surfaces subject to frequent motor vehicular traffic (such as parking lots and fast food restaurants), or facilities which perform vehicle repair, maintenance, or fueling (automotive service facilities0)are potential sources of pollutants of concern in storm water. [References: Pitt *et al.*, *Urban Storm Water Toxic Pollutants: Assessment, Sources, and Treatability*, Water Environment Res., 67, 260 (1995); *Results of Retail Gas Outlet and Commercial Parking Lot Storm Water Runoff Study*, Western States Petroleum Association and American Petroleum Institute, (1994); *Action Plan Demonstration Project, Demonstration of Gasoline Fueling Station Best Management Practices*, Final Report, County of Sacramento (1993).]

12. Retail gasoline outlets are points of convergence for vehicular traffic and are similar to parking lots and urban roads. Studies indicate that storm water discharges from retail gasoline outlets have high concentrations of hydrocarbons and heavy metals. [*Schueler and Shepp* (1992)]. Pilot studies indicate that treatment control best management practices installed at retail gasoline stations are effective in removing pollutants, reasonable in capital cost, easy to operate, and do not present safety risks [*Rouge River National Wet Weather Demonstration Project, Task Product Memorandum – Evaluation of On-line Media Filters RPO-NPS-TPM59.00*, Wayne County, MI, March 1999].

Permit Coverage

13. The requirements in this Order cover all areas within the boundaries of the cities (see Attachment A) as well as unincorporated areas in Los Angeles County Flood Control District within the jurisdiction of the Regional Board. The Permittees serve a population of about 11.4 million [Reference: *2000 Census of Population and Housing,* Bureau of the Census, U.S. Department of Commerce (2001)] in an area of approximately 3,100 square miles. Attachment B shows the map of the permitted area in Los Angeles County Flood Control District.

14. Federal, state, regional or local entities within the Permittees' boundaries or in jurisdictions outside the Los Angeles County Flood Control District, and not currently named in this Order, may operate storm drain facilities and/or discharge storm water to storm drains and watercourses covered by this Order. The Permittees may lack legal jurisdiction over these entities under state and federal constitutions. Consequently, the Regional Board recognizes that the Permittees will not be held responsible for such facilities and/or discharges. The

Regional Board will coordinate with these facilities to implement programs that are consistent with the requirements of this Order.

15. Sources of discharges into receiving waters in the County of Los Angeles but in jurisdictions outside its boundary include the following:

    a) About 34 square miles of unincorporated area in Ventura County drain into Malibu Creek, thence to Santa Monica Bay,

    b) About 9 square miles of the City of Thousand Oaks also drain into Malibu Creek, thence to Santa Monica Bay, and

    c) About 86 square miles of area in Orange County drain into Coyote Creek, thence into the San Gabriel River in the Los Angeles County Flood Control District.

    The Regional Board will ensure that storm water management programs for the areas in Ventura County and the City of Thousand Oaks that drain into Santa Monica Bay are consistent with the requirements of this Order. The Regional Board will coordinate with the Santa Ana Regional Board so that storm water management programs for the areas in Orange County that drain into Coyote Creek are consistent with the requirements of this Order.

16. This permit is intended to develop, achieve, and implement a timely, comprehensive, cost-effective storm water pollution control program to minimize the discharge of pollutants in storm water from the permitted areas in the County of Los Angeles to the waters of the United States.

17. Permittees will work cooperatively to control the contribution of pollutants from one portion of the municipal separate storm sewer system to another portion of the system. Permittees may control the contribution of pollutants to the municipal separate storm sewer system from non-permittee dischargers such as Caltrans, the U.S. Department of Defense, and other state and federal facilities, through interagency agreements.

Federal, State, and Regional Regulations

18. The Water Quality Act of 1987 added Section 402(p) to the Federal Clean Water Act (CWA). This section requires the U.S. Environmental Protection Agency (U.S. EPA) to establish regulations setting forth NPDES requirements for storm water discharges in two phases.

    - The U.S. EPA Phase 1 regulations were directed at municipal separate storm sewer systems (MS4) serving a population of 100,000 or more, including interconnected systems and storm water discharges associated with industrial activities, including construction activities. The Phase 1 Final Rule was published on November 16, 1990 (55 *Fed Reg.* 47990).

    - The U.S. EPA Phase II regulations are directed at other types of storm water discharges, including small municipal MS4s (serving a population of less than

100,000), small construction projects (one to five acres), municipal facilities with delayed coverage under the Intermodal Surface Transportation Efficiency Act of 1991, and other discharges for which the U.S. EPA Administrator or the State determines that the storm water discharge contributes to a violation of a water quality standard, or is a significant contributor of pollutants to waters of the United States. The Phase II Final Rule was published on December 8, 1999 (64 *Fed Reg.* 68722).

19. The U.S. EPA published an 'Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits' on August 26, 1996 (61 Fed. Reg. 4375). This policy discusses the appropriate kinds of water quality based effluent limitations to be included in NPDES storm water permits to provide for the attainment of water quality standards.

20. The U.S. EPA published an 'Interpretative Policy Memorandum on Reapplication Requirements' for MS4 permits on August 9, 1996 (61 *Fed. Reg.* 41697). This policy requires that MS4 reapplications for the next five-year permit term contain certain basic information and information for proposed changes and improvements to the storm water management program and monitoring program.

21. U.S. EPA regulations at 40 CFR 122.26(d)(2)(iv)(A) and 40 CFR 122.26(d)(2)(iv)(C) require that Permittees implement a program to monitor and control pollutants in discharges to the municipal system from industrial and commercial facilities that contribute a substantial pollutant load to the MS4. The regulations require that Permittees establish priorities and procedures for inspection of industrial facilities. This permit consistent with the regulations incorporates a requirement that Permittees conduct an industrial/ commercial inspection program to control pollutants in storm water discharges from industrial facilities.

22. Section 122.2 of the CWA authorizes the U.S. EPA to delegate its NPDES permitting authority to states with an approved environmental regulatory program. The State of California is a delegated State. The Porter-Cologne Water Quality Control Act (California Water Code) authorized the State Water Resources Control Board (State Board), through the Regional Boards, to regulate and control the discharge of pollutants into waters of the State and tributaries thereto. The State Board entered into a Memorandum of Agreement [MOA] with the U.S. EPA, on 22 September 1989, to administer the NPDES Program.

23. Section 303(d) of the CWA requires that the State identify a list of impaired water-bodies and develop and implement Total Maximum Daily Loads (TMDLs) for these waterbodies. A TMDL specifies the maximum amount of a pollutant that a water-body can receive and still protect beneficial uses. The U.S. EPA entered into a consent decree with the Natural Resources Defense Council (NRDC) on March 22, 1999, under which the Regional Board must adopt all TMDLs for the Los Angeles Region within 13 years from that date. This permit incorporates a provision to implement and enforce approved load allocations for municipal storm water discharges and require changes to the Storm Water Quality Management Plan after pollutants loads have been allocated and approved.

24. Section 6217(g) of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) requires coastal states with approved coastal zone management programs to address non-point pollution impacting or threatening coastal water quality. CZARA addresses five sources of non-point pollution: agriculture, silviculture, urban, marinas, and

hydromodification. This NPDES permit addresses the management measures required for the urban category, with the exception of septic systems. The Regional Board addresses septic systems through the administration of other programs.

25. On May 18, 2000, the U.S. EPA established numeric criteria for priority toxic pollutants for the State of California (California Toxics Rule) 65 *Fed. Reg.* 31682, for the protection of human health and aquatic life. These criteria apply to discharges to inland surface waters, and enclosed bays and estuaries and to the Clean Water Act and its programs. The State Board adopted the, *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California – 2000*) on March 2, 2000, for implementation of the California Toxics Rule (State Board Resolution No. 200-15 as amended by Board Resolution No. 2000-030). This policy requires that discharges comply with TMDL derived load allocations as soon as possible but no later than 20 years from the effective date of the policy.

26. The State Board adopted a revised Water Quality Control Plan for Ocean Waters of California (Ocean Plan) on July 23, 1997. The Ocean Plan contains water quality objectives for the coastal waters of California.

27. The Regional Board adopted an updated Water Quality Control Plan (Basin Plan) for the Los Angeles Region on June 13, 1994. '*Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*, (1994).' The Basin Plan, and amendments thereto, which are incorporated in this Order by reference, designate the beneficial uses of receiving waters and specify both narrative and numerical water quality objectives for the receiving waters in Los Angeles County.

28. The Regional Board on April 13, 1998, approved best management practices for sidewalk washing to minimize the discharge of wash waters to the storm drain system (Resolution No. 98-08). By the same Resolution, the Regional Board prohibited the discharge of municipal street wash waters to the storm drain system.

29. The Regional Board on April 13, 1998, approved recommended best management practices for industrial/ commercial facilities (Resolution No. 98-08).

30. The Regional Board on April 22, 1999, approved a List of best management practices for use in development planning and development construction (Resolution No. 99-03)

31. The Regional Board adopted and approved requirements for new development and significant redevelopment projects in Los Angeles County to control the discharge of storm water pollutants in post-construction storm water, on January 26, 2000, in Board Resolution No. R-00-02. The Regional Board Executive Officer issued the approved Standard Urban Storm Water Mitigation Plans (SUSMPs) on March 8, 2000. The State Board in large part affirmed the Regional Board action and SUSMPs in Order No. WQ 2000-1 issued on October 5, 2000. The State Board's Chief Counsel has issued a statewide policy memorandum (dated December 26, 2000,) which interprets the Order to provide broad discretion to Regional Boards and identifies potential future areas for inclusion in SUSMPs and the types of evidence and findings necessary. Such areas include ministerial projects, projects in environmentally sensitive areas, and retail gasoline outlets.

32. The Regional Board supports a Watershed Management Approach to address water quality protection in the region. The objective of the Watershed Management Approach should be to provide a comprehensive and integrated strategy towards water resource protection, enhancement, and restoration while balancing economic and environmental impacts within a hydrologically defined drainage basin or watershed. It emphasizes cooperative relationships between regulatory agencies, the regulated community, environmental groups, and other stakeholders in the watershed to achieve the greatest environmental improvements with available resources.

33. To promote a watershed management approach, the County of Los Angeles is divided into five Watershed Management Areas (WMAs) as follows:

    a. Malibu Creek and Rural Santa Monica Bay WMA
    b. Ballona Creek and Urban Santa Monica Bay WMA
    c. Los Angeles River WMA
    d. San Gabriel River WMA
    e. Dominguez Channel/Los Angeles Harbor WMA

    Permittees may form sub-watershed groups within the WMA. Attachment A, shows the list of Permittees under each WMA.

34. To facilitate compliance with federal regulation, the State Board has issued two statewide general NPDES permits: one for storm water from industrial sites [NPDES No. CAS000001, General Industrial Activity Storm Water Permit (GIASP)] and the other for storm water from construction sites [NPDES No. CAS000002, General Construction Activity Storm Water Permit (GCASP)]. The GCASP was reissued on August 19, 1999. The GIASP was reissued on April 17, 1997. Facilities discharging storm water associated with industrial activities and construction projects with a disturbed area of five acres or more are required to obtain individual NPDES permits for storm water discharges, or be covered by these statewide general permits by completing and filing a Notice of Intent (NOI) with the State Board. The U.S. EPA guidance anticipates coordination of the state-administered programs for industrial and construction activities with the local agency program to reduce pollutants in storm water discharges to the MS4.

35. The State Board, on October 28, 1968, adopted Resolution No. 68-16, "Maintaining High Quality Water" which established an anti-degradation policy for State and Regional Boards.

36. The State Board, on June 17, 1999, adopted Order No. WQ 99-05, which specifies standard receiving water limitations language to be included in all municipal storm water permits issued by the State and Regional Boards.

37. California Water Code (CWC) Section 13263(a) requires that waste discharge requirements issued by the Regional Board shall implement any relevant water quality control plans that have been adopted; shall take into consideration the beneficial uses to be protected and the water quality objectives reasonably required for that purpose; other waste discharges; and the need to prevent nuisance.

38. California Water Code Section 13370 *et seq.* requires that waste discharge requirements issued by the Regional Boards comply with provisions of the Federal Clean Water Act and its amendments.

Other Findings

39. The Regional Board is the enforcing authority in the Los Angeles Region or the two statewide general permits, which regulate discharges from industrial facilities and construction sites, and all NPDES storm water and non-storm water permits issued by the Regional Board. These industrial and construction sites and discharges are also regulated under local laws and regulations.

40. The Executive Advisory Committee (EAC) is a representative committee of Permittee members established to facilitate permit compliance and enhance consistency in program implementation among Permittees.

41. For water quality purposes, the Regional Board considers that all new development and significant redevelopment activity in specified categories, that receive approval or permits from a municipality, are subject to storm water mitigation requirements. The California Environmental Quality Act (CEQA) (Pub Resources Code Section 21000 *et seq.*) requires that public agencies consider the environmental impacts of the projects they approve for development. CEQA applies to projects that are considered discretionary and does not apply to ministerial projects, which involve the use of established standards or objective measurements. A ministerial project may be made discretionary by adopting local ordinance provisions that create decision-making discretion.

42. A review of industrial waste/ pretreatment records in the County of Los Angeles on illicit discharges indicates that automotive service facilities and food service facilities sometimes discharge polluted washwaters to the MS4. The pollutants of concern in such washwaters include food waste, oil and grease, and toxic chemicals. Other storm water/industrial waste programs in California have reported similar observations.

Implementation

43. The objective of this Order is to protect the beneficial uses of receiving waters in Los Angeles County. To meet this objective, this Order requires implementation of BMPs intended to reduce pollutants in storm water and urban runoff such that ultimately their discharge will neither cause violations of water quality objectives nor create conditions of nuisance in receiving waters.

44. The Regional Board recognizes the unique challenges to regulating storm water discharges through municipal storm sewer systems, including intermittent and variable nature of discharges, difficulties in monitoring, and limited physical control over the discharge, and that it will require adequate time to implement and evaluate the effectiveness of best management practices required in this Order and to determine whether they will adequately protect the receiving water.

45. The SQMP required in this Order builds upon the programs established in Order No. 90-079, and No. 96-054, consists of the components recommended in the USEPA guidance manual, and was developed with the cooperation of representatives from the regulated community and environmental groups. The SQMP includes provisions that promote customized initiatives, both on a countywide and watershed basis, in developing and implementing cost-effective measures to minimize discharge of pollutants to the receiving water. The various components of the SQMP, taken as a whole rather than individually, are expected to reduce pollutants in storm water and urban runoff to the maximum extent practicable.

46. The emphasis of the SQMP is pollution prevention through education, public outreach, planning, and implementation as source control BMPs first and then structural and treatment control BMPs. Successful implementation of the provisions of the SQMP will require cooperation and coordination of all public agencies in each Permittee's organization, among Permittees, and the regulated community. To minimize cost, the Permittees are encouraged to utilize their existing organizational framework to implement the various activities required in this Order.

47. This Order provides the flexibility for the Permittees to petition the Regional Board Executive Officer to substitute a BMP or requirement under the SQMP with an alternative BMP, if they can provide information and documentation on the effectiveness of the alternative, equal to or greater than the prescribed BMP in meeting the objectives of this Order.

48. This Order contemplates that the Permittees are responsible for considering potential storm water impacts when making planning decisions. This Order or any of its requirements are not intended to restrict or control local land use decision-making authority.

Public Process

49. The Regional Board has notified the Permittees and interested agencies and persons of its intent to issue waste discharge requirements for this discharge, and has provided them with an opportunity to submit their written view and recommendations.

50. The Regional Board, in a public hearing, heard and considered all comments pertaining to the discharge and to the tentative requirements.

51. The Regional Board has conducted public workshops to discuss the draft permit.

52. This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) Permit, pursuant to Section 402 of the Federal Clean Water Act, or amendments thereto, and shall take effect 50 days from permit adoption provided the Regional Administrator of the EPA has no objections.

53. This Order may be modified or alternatively revoked or reissued prior to its expiration date, in accordance with the procedural requirements of the federal NPDES program, and the California Water Code for the issuance of waste discharge requirements.

IT IS HEREBY ORDERED that the Los Angeles County Flood Control District, Los Angeles County, and the Cities of Agoura Hills, Alhambra, Arcadia, Artesia, Azusa, Baldwin Park, Bell, Bellflower, Bell Gardens, Beverly Hills, Bradbury, Burbank, Calabasas, Carson, Cerritos, Claremont, Commerce, Compton, Covina, Cudahy, Culver City, Diamond Bar, Downey, Duarte, El Monte, El Segundo, Gardena, Glendale, Glendora, Hawaiian Gardens, Hawthorne, Hermosa Beach, Hidden Hills, Huntington Park, Industry, Inglewood, Irwindale, La Cañada Flintridge, La Habra Heights, Lakewood, La Mirada, La Puente, La Verne, Lawndale, Lomita, Los Angeles, Lynwood, Malibu, Manhattan Beach, Maywood, Monrovia, Montebello, Monterey Park, Norwalk, Palos Verdes Estates, Paramount, Pasadena, Pico Rivera, Pomona, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Rosemead, San Dimas, San Fernando, San Gabriel, San Marino, Santa Fe Springs, Santa Monica, Sierra Madre, Signal Hill, South El Monte, South Gate, South Pasadena, Temple City, Torrance, Vernon, Walnut, West Covina, West Hollywood, Westlake Village, and Whittier, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act, as amended, and regulations and guidelines adopted thereunder, shall comply with the following:

Part 1. DISCHARGE PROHIBITIONS

Each Permittee shall effectively prohibit non-storm water discharges into the MS4 and watercourses, except where such discharges are:

1. covered by a separate individual or general NPDES permit for non-storm water discharges; or

2. in one of the categories below, and meet all conditions specified by the Regional Board Executive Officer (and which must be included in the revised SQMP):

   a) Categories of natural flow:

      (1) Natural springs and rising ground water;

      (2) Flows from riparian habitats or wetlands;

      (3) Stream diversions, permitted by the State Board; and

      (4) Uncontaminated ground water infiltration [as defined by 40 CFR 35.2005(20)].

   b) Category of flows from emergency fire fighting activity.

   c) Categories of flows incidental to urban activities, all of which are subject to conditions that shall be approved by the Regional Board Executive Officer:

      (1) Reclaimed and potable landscape irrigation runoff;

      (2) Water line flushing of potable water distribution systems;

      (3) Drains for foundations, footings, and crawl spaces;

(4) Air conditioning condensate;

(5) Dechlorinated swimming pool discharges;

(6) Dewatering of lakes and decorative fountains;

(7) Non-commercial car washing by residents or by non-profit organizations; and

(8) Sidewalk rinsing.

The Regional Board Executive Officer may add or remove categories of non-storm water discharges above. Furthermore, in the event that any of the above categories of non-storm water discharges are determined to be a source of pollutants by the Regional Board Executive Officer, the discharge will no longer be exempt from this prohibition unless the Permittee implements conditions approved by the Regional Board Executive Officer to ensure that the discharge is not a source of pollutants. Notwithstanding the above, the Regional Board Executive Officer may impose additional prohibitions of non-storm water discharges in consideration of anti-degradation policies.

Part 2. RECEIVING WATER LIMITATIONS

1. Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited.

2. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance.

3. The Permittee shall comply with the permit through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the Storm Water Quality Management Plan (SQMP) and its components and other requirements of this permit including any modifications. The SQMP and its components shall be designed to achieve compliance with receiving water limitations. If exceedances of water quality objectives or water quality standards (collectively, water quality standards) persist, notwithstanding implementation of the SQMP and its components and other requirements of this permit, the Permittee shall assure compliance with discharge prohibitions and receiving water limitations by complying with the following procedure:

   a) Upon a determination by either the Permittee or the Regional Board that discharges are causing or contributing to an exceedance of an applicable water quality standard, the Permittee shall promptly notify and thereafter submit a report to the Regional Board that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedances

of water quality standards. This report may be incorporated in the annual update of the SQMP and its components unless the Regional Board directs an earlier submittal. The report shall include an implementation schedule. The Regional Board may require modifications to the Report.

b) Submit any modifications to the report required by the Regional Board within 30 days of notification.

c) Within 30 days following the approval of the report, the Permittee shall revise the SQMP and its components and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, implementation schedule, and any additional monitoring required.

d) Implement the revised SQMP and its components and monitoring program according to the approved schedule.

4. So long as the Permittee has complied with the procedures set forth above and is implementing the revised SQMP and its components, the Permittee does not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Regional Board to develop additional BMPs.

Part 3. STORM WATER QUALITY MANAGEMENT PLAN IMPLEMENTATION, MONITORING, AND REPORTING

A. Responsibilities of the Principal Permittee

The Principal Permittee will coordinate and facilitate activities necessary to comply with the requirements of this Order, but is not responsible for ensuring compliance of any individual Permittee. The County of Los Angeles is hereby designated as the Principal Permittee, and as such shall:

1. Coordinates permit activities among Permittees and negotiate NPDES requirements with the Regional Board.

   All Permittees will be given the opportunity to have an active role in, provide input and participate in the development of permit requirements. However, the Principal Permittee and the watershed Executive Advisory Committee (EAC) representative(s) will conduct formal discussions with the Regional Board on behalf of Permittees.

2. Provide personnel and fiscal resources for the necessary update of the SQMP and its components;

3. Convene the Watershed Management Committees (WMCs) constituted pursuant to Part C, below, upon designation of representatives;

4. Provide technical and administrative support for committees that will be organized to implement the SQMP and its components;

5. Implement the Countywide Monitoring Program required in this Order;

6. Provide personnel and fiscal resources for the preparation and submittal to the Regional Board of annual reports and summaries of other reports required under the SQMP; and

7. Comply with the "Responsibilities of the Permittees" in Part 3.B., below;

B. Responsibilities of Each Permittees

Each Permittee is responsible for the implementation of the appropriate storm water management program developed pursuant to the requirements of this Order, and not for the implementation of the provisions applicable to the Principal Permittee or other Permittees. A Permittee is required to comply with the requirements of this Order applicable to discharges, which originate from places within its boundaries over which it has authority to enforce the requirements of this Order. Each Permittee shall, within its geographic jurisdiction:

1. Comply with the requirements of the SQMP and its amendments;

2. Coordinate among its internal departments and agencies, as appropriate, to facilitate the implementation of the requirements of the SQMP and its components applicable to such Permittee in an efficient and cost-effective manner;

3. Participate in the update of the SQMP and its components;

4. Designate a technically knowledgeable representative to the appropriate WMC;

5. Implement the SQMP upon approval by the Regional Board Executive Officer; and,

6. Provide intra-agency coordination (e.g. Fire Department, Building and Safety, Code Enforcement, etc.) toward the successful implementation of the provisions of this Order and SQMP components. As such, these

organizations are expected to actively participate in implementing the area wide storm water program.

C. Watershed Management Committees (WMCs)

1. Each WMC shall be comprised of a voting representative from each Permittee in the Watershed Management Area (WMA).

2. The WMC's chair and secretary shall be chosen by the WMC upon permit adoption and on an annual basis, thereafter. In the absence of volunteer Permittee(s) for the positions, the Principal Permittee shall assume those roles until the WMC chooses members of the committee for the positions.

Each WMC shall:

1. Facilitate cooperation and exchange of information among Permittees;

2. Establish additional goals and objectives and associated deadlines for the WMA, as the program implementation progresses;

3. Prioritize pollution control efforts based on beneficial use impairment(s), watershed characteristics and analysis of results from studies and the monitoring program;

4. Develop and/or update and monitor the adequate implementation, on an annual basis, of the tasks identified for the WMA;

5. Assess the effectiveness of, prepare revisions for, and recommend appropriate changes to the SQMP and its components;

6. Continue the Industrial/Commercial Source Identification program. Additional industrial/commercial or other types of activities will be investigated and those identified as priority shall be included in the program for industrial/commercial businesses.

7. Conduct joint WMC meetings at least four times per year and, as necessary.

D. Executive Advisory Committee (EAC)

The EAC is constituted by one representative from the Malibu Creek WMA and by two representatives from each of the other WMAs, along with representatives from the City of Los Angeles, and the Los Angeles County.

E. General Requirements

1. Each Permittee shall, at a minimum, adopt and implement the elements of the SQMP and its components that are consistent with the terms of this permit.

2. Additionally, modifications to the SQMP made during the term of the permit including those made in accordance with part 3.F.1. of this permit shall be implemented.

3. The SQMPs shall, at a minimum, comply with the applicable storm water program requirements of 40 CFR 122.26(d)(2). The SQMP and its components shall be implemented so as to reduce the discharges of pollutants in storm water to the maximum extent practicable. The SQMP Table of Contents are described in Attachment A.

4. Each Permittee shall be responsible for implementation of the relevant portions of the SQMPs within its jurisdictional boundaries. The Principal Permittee shall be responsible for program coordination as described in 3.B., as well as, compliance with the relevant portions of the permit within its jurisdiction.

F. SQMP Modifications

1. The Permittees shall modify the SQMP and its components adopted with this Order to make it consistent with the requirements herein. The revised SQMP and its components will be submitted to the Regional Board Executive Officer for approval no later than 180 days from the adoption of this Order.

2. The Principal Permittee shall modify the SQMP to comply with waste load allocations developed and approved pursuant to the process for the designation and implementation of Total Daily Maximum Loads (TMDLs) for impaired water bodies.

3. The Regional Board Executive Officer may approve changes to the SQMP and its components, except as noted in part 3.F.1., either:

   a) Upon petition by the Permittees or interested parties, and after providing for and considering public comment, or,

   b) As deemed necessary by the Regional Board Executive Officer following notice to the Permittees, and after providing for and considering public comments.

4. The Permittees shall modify the SQMP and its components, at the direction of the Regional Board Executive Officer, to incorporate regional provisions. Such provisions may include watershed specific requirements for watersheds shared by Permittees with other MS4 programs.

G. Legal Authority

1. Permittees shall possess the necessary legal authority to prohibit non-storm water discharges, to the maximum extent practicable, to the storm drain system, including, but not limited to:

   a) Prohibit illicit discharges and illicit connections and a requirement for removal of illicit connections;

   b) Prohibit the discharge of wash waters to the MS4 from the cleaning of gas stations, auto repair garages, or other types of automotive service facilities;

   c) Prohibit the discharge of runoff to the MS4 from mobile auto washing, steam cleaning, mobile carpet cleaning, and other such mobile commercial and industrial operations;

   d) Prohibit the discharge of runoff to the MS4 from areas where repair of machinery and equipment which are visibly leaking oil, fluid or antifreeze, is undertaken;

   e) Prohibit the discharge of runoff to the MS4 from storage areas of materials containing grease, oil, or other hazardous substances, and uncovered receptacles containing hazardous materials;

   f) Prohibit the discharge of chlorinated swimming pool water and filter backwash to the MS4;

   g) Prohibit the discharge of runoff from the washing of toxic materials from paved or unpaved areas to the MS4;

   h) Prohibit washing impervious surfaces in industrial/commercial areas that results in a discharge of runoff to the MS4; and

   i) Prohibit the discharge of concrete or concrete laden wash water from concrete trucks, pumps, tools, and equipment to the MS4.

   j) Prohibit spills, dumping, or disposal of materials into the MS4, other than storm water, such as:

      (1) Litter, landscape debris and construction debris;

      (2) Any state or federally banned pesticide, fungicide or herbicide;

      (3) Food wastes; and

      (4) Fuel and chemical wastes, animal wastes, garbage, batteries, and other materials that have potential adverse impacts on water quality.

k) Comply with conditions in Permittees ordinances, permits, contracts, model programs, or orders (i.e. hold dischargers to its MS4 accountable for their contributions of pollutants and flows);

l) Utilize enforcement mechanisms to require compliance with Permittees ordinances, permits, contracts, or orders;

m) Control the contribution, or potential contribution, of pollutants in discharges of storm water runoff associated with industrial activities (including construction activities) **to** its MS4 and control the quality of storm water runoff **from** industrial sites (including construction sites). This requirement applies to source control, treatment control, and structural control BMPs; and,

n) Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and non-compliance with permit conditions, including the prohibition of illicit discharges to the MS4. Permittees must possess authority to enter, sample, inspect, review and copy records, and require regular reports from industrial facilities discharging polluted or potentially polluted storm water runoff into its MS4 (including construction sites).

o) Require the use of best management practices (BMPs) to prevent or reduce the discharge of pollutants to MS4s.

p) Adopt and implement an agency-specific storm water and urban runoff ordinance or amend an existing one, if necessary, to be able to enforce all requirements of the permit, effective immediately upon the adoption of this Order.

H. Annual Storm Water Program Report and Assessment

The Principal Permittee shall submit by October 15 of each year beginning the Year 2002, an Annual Storm Water Program Report and Assessment documenting the status of the general program and individual tasks contained in the SQMP, and in accordance with the requirements identified in the Monitoring and Reporting Program CI-6948 of this Order. The Principal Permittee shall evaluate the Annual Storm Water Program Report and Assessment with the results of analyses from the Monitoring and Reporting program. (e.g., if the monitoring report results show a particular constituent consistently at elevated levels, that may be a trigger for Permittees to address their programs specifically for that particular situation and change them accordingly to address the problem).

The Annual Storm Water Program Report and Assessment shall cover the previous fiscal year from July 1 through June 30, and shall include the information necessary to assess the Permittees' compliance status relative to this Order, and the effectiveness of implementation of permit requirements on storm water quality.

The Annual Storm Water Program Report and Assessment shall include any proposed changes to the SQMP and its components as approved by the Management Committee(s).

The Principal Permittee shall submit by October 15, 2001, the annual program report for period July 1, 2000 through July 26, 2001 documenting the status of the general program up to permit reissuance and the results of analyses from the monitoring and reporting program.

I. Storm Water Management Program Budget

1. Each Permittee shall prepare annually a budget summary on resources applied to the storm water management program. This budget summary shall include an annual summary identifying the storm water budget for the following year, using estimated percentages and written explanations where necessary, for the specific categories noted below:

   a) Program management

   b) Illicit connection/illicit discharge

   c) Development planning/development construction

   d) Industrial inspection activities (including construction activities)

   e) Public Agency Activities

   f) Operations and maintenance

   g) Municipal Street Sweeping

   h) Fleet and Public Agency Facilities

   i) Landscape and Recreational Facilities

   j) Capital Costs

   k) Public Information and Participation

   l) Monitoring Program

   m) Other

2. Each Permittee, in addition to the budget summary, shall report any supplemental dedicated budgets, if any, for the same categories.

J. Storm Water Monitoring Report

The Principal Permittee shall submit a Storm Water Monitoring Report on August 15, 2002 and annually on August 15 thereafter, in accordance with the requirements identified in the Monitoring and Reporting Program CI-6948 of this order. The report shall include:

a) Status of implementation of the monitoring program as described in the attached Monitoring and Reporting Program CI-6948;

b) Results of the monitoring program; and

c) A general interpretation of the significance of the results, to the extent that data allows.

K. Modification

The Regional Board Executive Officer or the Regional Board, consistent with 40 CFR 122.41, may approve changes to the SQMP as specified in 3.F.3. The petition for changes shall be filed no later than 60 days after the Annual Monitoring Program Report submittal date.

L. Best Management Practice Substitution

The Regional Board Executive Officer may approve any Best Management Practice (BMP) substitution upon petition by the Permittee(s), if the Permittee can document that:

1. The proposed alternative BMP or program will meet or exceed the objective of the original BMP or program in the reduction of stormwater pollutants; or

2. The fiscal burden of the original BMP or program is substantially greater than the proposed alternative and does not achieve a substantially greater improvement in storm water quality; and,

3. The proposed alternative BMP or program will be implemented within a similar period of time.

The Regional Board Executive Officer may approve any BMP elimination upon petition by the Permittee(s), if the Permittee can document that the BMP is not technically feasible and no substitute is available.

Part 4. SPECIAL PROVISIONS

A. Public Information and Participation Program

Permittees shall work collaboratively to implement a comprehensive education/outreach program with the following objectives:

To measurably increase the knowledge of the target audiences regarding the MS4, the impacts of storm water pollution on receiving waters, and potential solutions to mitigate the problems caused;

To measurably change the behavior of target audiences by encouraging implementation of appropriate solutions;

To involve and engage all socio-economic and ethnic groups in Los Angeles County to

publicly participate in mitigating the impacts of storm water pollution.

1. Programs for Residents

a) The Principal Permittee shall implement the Public Education Program as outlined in the SQMP, including the continuation of the following activities:

- Advertising
- Media Relations
- Public Service Announcements
- "How To" Instructional Material Distributed in a Targeted and Activity-Related Manner
- Corporate, Community Association, Environmental Organization and Entertainment Industry Tie-Ins
- 1-888-CLEAN-LA and 888CleanLA.com
- Events Targeted to Specific Activities and Population Sub-groups

b) Countywide Hotline

The 888-CLEAN-LA hotline will serve as the general public reporting contact for reporting clogged catch basin inlets and illicit discharges/dumping, and general storm water management information. Each Permittee may establish its own hotline if preferred. Permittees shall include this information, updated when necessary, in public information, and the government pages of the telephone book as they are developed/published.

c) "No Dumping" Message

Each Permittee shall mark all storm drain inlets with a legible "no dumping" message. In addition, signs with prohibitive language discouraging illegal dumping must be posted at designated public access points to creeks, other relevant water bodies, and channels by July 26, 2003. Good signage shall be maintained.

d) Outreach and Education

The Principal Permittee shall implement the second Five-Year Education Plan as detailed in the SQMP.

Each Permittee shall conduct educational activities within its jurisdiction and participate in countywide events.

The Principal Permittee shall organize Public Outreach Strategy meetings with all Co-permittees on a quarterly basis. The Principal Permittee shall provide guidance for Permittees to augment the regional outreach and education program. Permittees shall coordinate regional and local outreach and education to reduce duplication of efforts.

The Principal Permittee shall insure that a minimum of 35 million impressions per year are made on the general public about storm water quality via print, local TV access, local radio, or other appropriate media.

Each Permittee shall provide all School Districts within its jurisdiction with materials, including videos, live presentations, brochures, and other media necessary to educate a minimum of 50 percent of all school children (K-12) every 2 years on storm water pollution. All Permittees shall cooperate to implement this requirement. Permittees shall provide the contact information for their appropriate storm water staff to the Principal Permittee within 30 days of the date this order is adopted. Cooperative efforts with other agencies may also be used to accomplish this requirement.

e) Pollutant-Specific Outreach

Permittees shall coordinate to develop outreach programs that target the watershed-specific pollutants listed in Table 1 no later than [6 months from the permit adoption date]. Metals may be appropriately addressed through the Industrial/Commercial businesses program. Region-wide pollutants may be included in the Principal Permittee's mass media efforts. Programs shall be appropriate for the anthropogenic sources of each pollutant.

Table 1. Target Pollutants for Outreach

Watershed	***Target Pollutants for Outreach***
Ballona Creek	Trash, Indicator Bacteria, Metals
Malibu Creek	Trash, Nutrients, indicator Bacteria
Los Angeles River	Trash, Nutrients (Nitrogen), Indicator Bacteria, Metals, Pesticides
San Gabriel River	Trash, Nutrients (Nitrogen), Indicator Bacteria, Metals
Dominguez Channel	Trash, Indicator Bacteria

Each Permittee shall distribute outreach materials to the general public and target audiences, such as schools, community groups, contractors and developers, and at appropriate public counters and events. Outreach material shall include information on pollutants and sources of concern, as listed in Table 1.

2. Programs for Businesses

a) Corporate Outreach

The Principal Permittee shall develop and implement a Corporate Outreach program to educate corporate heads about storm water regulations. The program shall target gas stations and restaurant chains. At a minimum, this program shall include:

(1) Consulting with corporate heads to explain storm water regulations;

(2) Distribute and discuss BMP and educational material, and management suggestions to facilitate employee compliance.

Corporate Outreach for all gas station and restaurant chain corporations shall occur once every 2 years, not less than twice during the permit term.

b) Business Assistance Program

Permittees shall develop and implement a Business Assistance Program to provide confidential, technical resource assistance to small businesses to help them understand and comply with storm water regulations. At a minimum, programs shall include:

(1) On-site technical assistance or consultation via telephone to identify and implement pollution prevention methods and best management practices;

(2) Availability, distribution, and discussion of applicable BMP and educational materials; and,

(3) Access to information concerning environmental consulting services, hazardous waste treatment, hauling, disposal and recycling services, and pollution prevention and control practices.

Permittees shall provide assistance to small businesses that meet the following criteria:

(1) Less than 100 employees;

(2) Lack funding for private consulting;

(3) Lack access to the expertise necessary to understand and comply with storm water regulations; and

(4) Requested assistance, or were referred through the Industrial/Commercial Inspection Program.

Permittees shall assist (through site visits, telephone consultations, presentations or material distribution) all qualifying businesses that request assistance, or 1000 businesses per year, whichever is less.

The Business Assistance Program shall be a confidential and non-enforcement program. Permittees shall conduct follow-up independent of the Business Assistance Program, based on the priorities of the Industrial/Commercial Inspection Program.

The Principal Permittee shall submit an annual PIPP Update, with the Annual Program and Assessment Report, to the Regional Board Executive Officer for approval. The PIPP Update shall include a summary of the overall strategy and any updates or modifications to the Public Information and Participation Program.

B. Programs for Industrial/Commercial Inspections

Each Permittee shall implement an Industrial/Commercial Program to:

- Achieve the control and reduction of pollutants in storm water runoff from all Industrial/Commercial sites to the maximum extent practicable.

At a minimum the Industrial/Commercial program shall address:

- Regulatory mechanism requiring the implementation of proper Pollution Prevention and control measures at Industrial/Commercial sites;
- Source Identification;
- Threat to Water Quality;
- Site plan review and BMP Implementation;
- Inspection of Industrial/Commercial sites;
- Enforcement of pollution prevention and control measures at Industrial/Commercial sites;
- Have sanctions to ensure compliance (established in the regulatory mechanism).

1. Pollution Prevention (Industrial/Commercial)

Each Permittee shall implement pollution prevention methods in its Industrial/Commercial Program and shall require its use by industrial/commercial businesses, where appropriate.

2. Source Identification (Industrial/Commercial)

Each Permittee shall develop and update annually a watershed-based inventory of all Industrial/Commercial sites within its jurisdiction regardless of site ownership. The inventory may be expanded through designation by the WMC, as additional information becomes available. This requirement is applicable to all Industrial/Commercial sites regardless of whether the Industrial/Commercial site is subject to the GIASP, other individual NPDES permit, or commercial sites. The update of the database may be performed through new information obtained through field activities or through other readily available intra-agency informational databases (e.g. business license, pretreatment permits, sanitary sewer hook-up permits, etc...) The inventory shall include the following minimum information for each Industrial/Commercial site:

a) name;

b) address; and

c) a narrative description including SIC codes that best reflects the principal products or activities performed by each facility. The use of an automated database system, such as Geographical Information System (GIS) or web-based is highly recommended, but not required. Any database already available may be used to satisfy the requirements of this section. The Permittees may use other fields of information, as necessary (e.g. to point out discrepancies between SIC Code designation and type of activities in reality performed on-site).

3. Threat to Water Quality Prioritization (Industrial/Commercial)

The program for Industrial/Commercial Businesses will address at the minimum, the following categories of activities:

a) All industrial groups regulated under Phase I of the federal storm water program;

b) Motor vehicle repair shops, motor vehicle body shops, motor vehicle parts and accessories facilities;

c) Restaurants. The County Health Department Code shall be amended to facilitate compliance with this Order. At a minimum, the Code shall be modified to require inspections for:

(1) Parking lot, alley, sidewalk and street areas. Inspectors will verify that floormats, filters and garbage containers are not washed in those areas. They will also verify that no washwater is poured in those areas.

(2) Dumpster areas. Inspectors will verify that the dumpster area is clean with the lid closed and not filled with liquid or hosed out.

(3) Oil and Grease residue is not poured onto a parking lot, street or adjacent catch basin.

(4) Parking lot area is cleaned by sweeping and not by hosing down. The facility uses dry methods for spill cleanup.

d) Other Commercial facilities (contributing or potentially contributing to the impairments of receiving waters)

4. BMP Implementation

a) Each Permittee shall implement, or require the implementation of, the designated minimum BMPs, as approved in Resolution No. 98-08, at each industrial/commercial site within its jurisdiction. If particular minimum BMPs are infeasible at any specific site, each Permittee shall implement, or require implementation of, other equivalent BMPs. Each Permittee shall also implement or require any additional site specific BMPs as necessary to comply with this Order including BMPs which are more stringent than those required under the statewide General Industrial Permit.

b) Each Permittee shall implement, or require implementation of, additional controls for Industrial/Commercial sites tributary to Clean Water Act section 303(d) impaired water bodies (where a site discharges pollutants for which the water body is impaired) as necessary to comply with this Order. Each Permittee shall implement, or require implementation of, additional controls for Industrial/Commercial sites within or directly adjacent to or discharging directly to coastal lagoons or other receiving waters within environmentally sensitive areas as necessary to comply with this Order.

5. Inspection of Industrial/Commercial Sites

a) Each Permittee shall conduct Industrial site inspections for compliance with its ordinances, permits. Inspections shall include review of BMP implementation plans or implementation of the required minimum BMPs.

b) Each Permittee shall establish inspection frequencies for facilities described in B.3. above. Each Permittee shall inspect Industrial/commercial sites, at a minimum:

Facility Type	Inspection Frequency
Restaurants	Once in 24 months, but not less

	than twice during the life of the permit
Automotive Service Facilities	Once in 24 months, but not less than twice during the life of the permit
Other Commercial	Once in 24 months, but not less than twice during the life of the permit
Phase I Facilities*	Once in 24 months, but not less than twice during the life of the permit

* During the first cycle of inspections, all facilities will be investigated, regardless of exposure or non-exposure. After that cycle is concluded sites without exposure need not be addressed in the following cycles.

c) Based upon the results of site inspections, each Permittee shall implement all follow-up actions necessary to comply with Permittee's ordinances and this Order.

d) To the extent that Regional Board staff has conducted an inspection of an Industrial/Commercial site during a particular year, the requirement for the responsible Permittee to inspect this site during the same year will be satisfied.

6. Enforcement of Pollution Prevention and Control Measures at Industrial/Commercial Sites

a) Each Permittee shall enforce its storm water ordinance at all Industrial/Commercial sites as necessary to maintain compliance with this Order. Permittee ordinances or other regulatory mechanisms shall include sanctions to ensure compliance.

7. Reporting of Non-compliant Sites (Industrial/Commercial)

a) Each Permittee shall provide oral notification to the Regional Board of non-compliant sites that are determined to be in non-compliance with existing storm water regulations (within 3 days of discovery) or create an adverse impact or nuisance as it relates to the quality of the receiving waters of the State within its jurisdiction, within 24 hours of the discovery.

Such oral notification shall be followed up by a written report to be submitted to the Regional Board within 5 days of the incidence of non-compliance. Sites are considered non-compliant when one or more violations of local ordinances, permits, plans, or this Order exist on the site.

b) Permittees shall develop and submit criteria by which to evaluate events of non-compliance to determine whether they create an adverse impact or nuisance. These criteria shall be submitted in

the SQMP and Annual Report for Regional Board review and subject to Regional Board Executive Officer's approval.

C. Programs for Development Planning

1. The Permittees shall implement a development-planning program with immediate effect that will require all planning priority development and redevelopment projects to,

a) Minimize impacts from storm water and urban runoff on the biological integrity of natural drainage systems and water bodies in accordance with requirements under CEQA, Section 404 of the CWA, local ordinances and other legal authorities;

b) Maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground;

c) Minimize the quantity of storm water directed to impermeable surfaces and the MS4;

d) Minimize pollution emanating from parking lots through the use of appropriate treatment control BMPs and good housekeeping practices;

e) Establish reasonable limits on the clearing of vegetation from the project site including, but not limited to, regulation of the length of time during which soil may be exposed and in certain environmentally critical situations, the prohibition of bare soil;

f) Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from the development site.

2. Peak Flow Control

The Permittees shall establish and enforce numerical criteria no later than [90 days from permit adoption] to control the post-development peak storm runoff discharge rates in natural drainage systems to maintain or reduce pre-development peak discharge rates to prevent down-stream erosion, and to protect stream habitat. Natural drainage systems include, but are not limited to, the following:

a) Malibu Creek

b) Topanga Canyon

c) Upper Los Angeles River

d) Upper San Gabriel River

e) Soft-bottom segments of other receiving waters within Los Angeles County

3. Standard Urban Storm Water Mitigation Plans

a) Each Permittee shall require that single-family hillside home developments:

(1) Conserve natural areas

(2) Protect slopes and channels

(3) Provide storm drain system stenciling and signage

(4) Divert roof runoff to vegetated areas before discharge

(5) Direct surface flow to vegetated areas before discharge

b) Each Permittee shall require that a Standard Urban Storm Water Mitigation Plan as approved by the Regional Board in Board Resolution No. R 00-02 be implemented for the following categories of developments with immediate effect:

(1) Single-family hillside residential developments of 10,000 square feet or more

(2) Ten or more unit homes (includes single family homes, multifamily homes, condominiums, and apartments)

(3) A 100,000 or more square feet industrial/ commercial development

(4) Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534, and 7536-7539)

(5) Retail gasoline outlets

(6) Restaurants (SIC 5812)

(7) Parking lots 5,000 square feet or more or with 25 or more parking spaces

c) Each Permittee shall require, no later than 180 days from permit adoption that a Standard Urban Storm Water Mitigation Plan be

implemented for all projects located in or directly adjacent to or discharging directly to an environmentally sensitive area, where, the development will:

(1) create 2,500 square feet or more of impervious area, or

(2) alter the area of imperviousness of the site to ten or more percent of the naturally occurring condition, and

(3) discharge storm water and urban runoff that is likely to impact a sensitive biological species or habitat

4. Numerical Design Criteria

The Permittees shall require that post-construction treatment control BMPs incorporate, at a minimum, the following design criteria to mitigate (infiltrate, filter or treat) storm water runoff:

a) Volumetric Structural or Treatment Control BMP

(1) the 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998)*, or

(2) the volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in *California Stormwater Best Management Practices Handbook – Industrial/ Commercial,* (1993), or

(3) the volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or

(4) the volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event,

AND/ OR

b) Flow Based Structural or Treatment Control BMP

(1) the flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity, or

(2) the flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County

(3) the flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above,

5. Applicability of Numerical Design Criteria

The Permittees shall require the following categories of planning priority projects to design and implement post-construction treatment and structural controls to mitigate storm water pollution prior to issuing grading or building permits:

a) Single-family hillside residential developments of 10,000 square feet or more

b) Ten or more unit home development (includes single family homes, multifamily homes, condominiums, and apartments)

c) A 100,000 or more square feet industrial/ commercial development

d) Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534 and 7536-7539)

e) Retail gasoline outlets [suggested criteria: projected gasoline output of 25,000 gallons per month or more; or with four or more fueling dispensers, or with 24 or more dispensing meters or projected average daily traffic of 100 cars or more or 5,000 square feet or more of surface area]

f) Restaurants (SIC 5812) [5,000 square feet or more]

g) Parking lots 5,000 square feet or more or with 25 or more parking spaces

h) Projects located in, adjacent to or discharging directly to environmentally sensitive areas that meet threshold conditions identified above.

6. Each Permittee shall require the implementation of SUSMP and post-construction control requirements for the following categories of development planning projects no later than March 9, 2003, to conform to USEPA Phase II requirements:

a) One acre (40,000 square feet) industrial/commercial development

7. Site Specific Mitigation

a) Each Permittee shall require a site-specific plan for developments not requiring a SUSMP but which may potentially have adverse impacts on post-development storm water quality, where the following project characteristics exist:

(1) Vehicle or equipment fueling areas;

(2) Vehicle or equipment maintenance areas, including washing and repair

(3) Commercial or industrial waste handling or storage

(4) Outdoor handling or storage of hazardous materials;

(5) Outdoor manufacturing areas

(6) Outdoor food handling or processing

(7) Outdoor animal care, confinement, or slaughter

(8) Outdoor horticulture activities

8. Redevelopment Projects

The Permittees shall apply the SUSMP, or site specific requirements including post-construction storm water mitigation to all projects that undergo significant redevelopment in their respective categories. Significant redevelopment means the creation or addition or replacement of 5,000 square feet of impervious surface area on an already developed site. Where significant redevelopment results in an increase of more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post development storm water quality control requirements, the entire project must be mitigated.

9. Maintenance Agreement and Transfer

Each Permittee shall require that all developments subject to SUSMP and site specific plan requirements provide verification of maintenance provisions for structural and treatment control BMPs, including but not limited to legal agreements, covenants, CEQA mitigation requirements, and or conditional use permits. Verification at a minimum shall include:

a) The developers signed statement accepting responsibility for maintenance until the responsibility is legally transferred, and either

b) A signed statement from the public entity assuming responsibility for structural or treatment control BMP maintenance and that it meets all local agency design standards, or

c) Written conditions in the sales or lease agreement, which requires the recipient to assume responsibility for maintenance and conduct a maintenance inspection at least once a year, or

d) Written text in project conditions, covenants and restrictions (CCRs) for residential properties assigning maintenance

responsibilities to the Home Owners Association for maintenance of the structural and treatment control BMPs; or

e) Any other legally enforceable agreement that assigns responsibility for the maintenance of post-construction structural or treatment control BMPs

10. Mitigation Funding

The Permittees shall identify no later than [120 days from permit adoption] a funding mechanism[s] and management framework, for endorsement by the Regional Board Executive Officer, to support regional solutions to storm water pollution, where the following situations occur:

a) A waiver for impracticability Is granted or threat to ground water exists

b) Legislative funds become available

c) Off-site mitigation is required because of loss of environmental habitat

11. California Environmental Quality Act (CEQA) Document Update

Each Permittee shall modify planning procedures for preparing and reviewing CEQA documents to consider potential storm water quality impacts and provide for appropriate mitigation, with immediate effect. The CEQA guidelines shall require consideration of the following:

a) Potential Impact of project construction on storm water runoff

b) Potential Impact of projects post-construction activity on storm water runoff.

c) Potential for discharge of storm water from areas from material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas.

d) Potential for discharge of storm water to impair the beneficial uses of the receiving waters or areas that provide water quality benefit

e) Potential for the discharge of storm water to cause significant harm on the biological integrity of the waterways and water bodies

f) Potential for significant changes in the flow velocity or volume of storm water runoff that can cause environmental harm

g) Potential for significant increases in erosion of the project site or surrounding areas

12. General Plan Update

Each Permittee shall update appropriate elements of its General Plans to include watershed and storm water quality and quantity management considerations no later than [540 days from permit adoption date]. Appropriate elements include, but are not limited to, water quality protection, development goals and policies, open space goals and policies, preservation of and integration with natural features, and water conservation policies.

13. Targeted Employee Training

Each Permittee shall train its employees in targeted positions (whose jobs or activities are engaged in development planning) regarding the requirements of the development planning on an annual basis beginning no later than [90 d from permit adoption], and more frequently if necessary.

14. Developer Technical Guidance and Information

a) Each Permittee shall develop and make available to developer development planning guidelines with immediate effect.

b) Permittees shall develop no later than [365 days from permit adoption] a technical manual for the siting and design of BMPs for the development community. The technical manual shall at a minimum include:

(1) Specifications for treatment control BMPs based on flow-based and volumetric water quality design criteria for the purposes of countywide consistency,

(2) Criteria for control of peak discharge rates, velocities and duration,

(3) Expected pollutant removal performance ranges

(4) Maintenance considerations

(5) Cost considerations

D. Programs for Construction Sites

Each Permittee shall implement a program to control runoff from construction activity at all construction sites. To accomplish this, the Permittees shall revise their Construction Development Program in the SQMP within 180 days of adoption of this Order, subject to the approval of the Executive Officer. The revisions shall specify a schedule for implementation by each Permittee, and must contain the following minimum elements, including performance measures, schedules for implementation, and shall include the following categories of construction:

a) Five or more acres;

b) Between one and five acres; and

c) Less than one acre.

1. For construction sites less than 1 acre, each Permittee shall:

a) Implement an educational program to discuss storm water pollution prevention and controls at construction sites and distribute educational materials targeted to the construction community during meetings, workshops, pre-construction meetings, and inspections;

b) Train employees in targeted positions (whose jobs or activities are engaged in construction activities including construction inspection staff) regarding the requirements of the storm water management program no later than (180 days from adoption of this Order), and annually thereafter; and

c) Require the implementation of a minimum set of BMPs to prevent pollution and control storm water runoff discharges. These minimum BMPs shall, at a minimum, include:

- Requirements for the use of effective erosion and sediment controls at construction sites;

- Requirements for structural and non-structural Best Management Practices (BMPs) for controlling runoff at construction sites;
- Site plan review and verification of BMP implementation; and
- Each Permittee is encouraged to prioritize sites to be inspected during wet weather to determine compliance with the minimum BMPs.

2. For construction sites one acre and greater each Permittee shall require that in D.1 above and require the preparation, submittal, and implementation of a Local Storm Water Pollution Prevention Plan (Local SWPPP), prior to issuance of a grading permit for construction projects, that meets one or more of the following criteria:

   a) Will result in soil disturbance of one acre or more in size;

   b) Is within, directly adjacent to, or is discharging directly to an environmentally sensitive area; or

   c) Is located in a hillside area.

   The Local SWPPP shall include appropriate construction site BMPs and maintenance schedules. A State required SWPPP may be substituted by a Local SWPPP if the Local SWPPP is at least as inclusive as the requirements for a State SWPPP. The BMPs may be selected from documents such as the California Storm Water BMP Handbook, the Caltrans Storm Water Quality Handbook, Ventura County Stormwater Quality Standard Sheet, American Society of Civil Engineers (ASCE) database or similar guidance documents. In addition, each Permittee shall ensure the following minimum requirements are effectively implemented at all construction sites regardless of size:

   d) Sediments generated on the project site shall be retained using adequate structural drainage controls;

   e) No construction-related materials, wastes, spills, or residues shall be discharged from the project site to streets, drainage facilities or adjacent properties by wind or runoff;

   f) Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the project site; and

   g) Erosion from slopes and channels will be prevented by implementing BMPs including, but not limited to: limiting of grading scheduled during the wet season; inspecting graded areas during rain events; planting and maintenance of vegetation on slopes; and covering erosion susceptible slopes.

   The Local SWPPP must include the rationale used for selecting or rejecting BMPs. The project architect, or engineer of record, or

authorized qualified designee, must sign a statement on the Local SWPPP to the effect:

"As the architect/engineer of record, I have selected appropriate BMPs to effectively minimize the negative impacts of this project's construction activities on storm water quality. The project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activity."

The landowner shall sign a statement to the effect:

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/or inaccurate information, failing to update the Local SWPPP to reflect current conditions, or failing to properly and/or adequately implement the Local SWPPP may result in revocation of grading and/or other permits or other sanctions provided by law."

The Local SWPPP certification shall be signed by the landowner as follows:

For a corporation: by a responsible corporate officer which means (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of the construction activity if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality or other public agency: by an elected official, a ranking management official (e.g., County Administrative Officer, City Manager, Director of Public Works, City Engineer, District Manager), or the manager of the construction activity if authority to sign Local SWPPPs has been assigned or delegated to the manager in accordance with established agency policy.

3. For sites one acre and greater, each Permittee shall inspect all construction sites with Local SWPPPs (or SWPPPs) for storm water quality requirements during routine inspections a minimum of once during the wet season. The Local SWPPP (or SWPPP) shall be reviewed for

compliance. For inspected sites that have not adequately implemented their Local SWPPP (or SWPPP), a follow-up inspection to ensure compliance will take place within 2 weeks. If compliance has not been attained, the Permittee will take additional actions to achieve compliance (as specified in Local or State codes). If compliance has not been achieved, and the site is covered under the State General Construction Activity Storm Water Permit, each Permittee shall enforce their Local ordinance requirements and if non-compliance continues the Regional Board shall be notified for further joint enforcement actions.

4. For sites five acres and greater, each Permittee shall require that in D.1 above and:

   a) Require proof of filing of a Notice of Intent (NOI) for coverage under the State General Construction Activity Storm Water Permit and a copy of the SWPPP prior to issuing a grading permit for all projects requiring coverage under the state general permit. On March 10, 2003, for sites one acre and greater, each Permittee shall require proof of filing a Notice of Intent (NOI) for coverage under the State General Construction Activity Storm Water Permit and a copy of the SWPPP prior to issuing a grading permit for all projects requiring coverage under the state general permit. The prepared SWPPP may satisfy the requirement under D.2. (in-lieu of Local SWPPP).

   Each Permittee shall require proof of an NOI and a copy of the SWPPP at any time a transfer of ownership takes place for the entire development or portions of the common plan of development where construction activities are still on-going.

   b) Each Permittee shall use an electronic system to track grading permits issued by each Permittee.

E. Public Agency Activities

1. Each Permittee shall implement a Public Agency program to minimize storm water pollution impacts from public agency activities. Public Agency requirements consist of:

- Sewage Systems Operations
- Public Construction Activities
- Vehicle Maintenance/Material Storage Facilities Management
- Landscape and Recreational Facilities Management
- Storm Drain Operation and Management
- Streets and Roads Maintenance
- Parking Facilities Management
- Public Industrial Activities
- Emergency Procedures
- Dry Weather Diversions

2. Sewage System Operations

Each Permittee shall implement a response plan for overflows of the sanitary sewer system within their respective jurisdiction which shall consist of the following at a minimum:

a) Investigate any complaints received;

b) Immediately respond to overflows by containment; and

c) Notify appropriate sewer and public health agencies when a sewer overflows to the MS4.

For those Permittees which own and/or operate a sanitary sewer system, each Permittee shall also implement the following requirements until such time that they are superceded by the proposed Capacity, Management, Operation and Maintenance Regulations (CMOM) are promulgated by the USEPA:

d) A program to prevent sewage spills or leaks from sewage facilities from entering the MS4; and

e) Identify, repair, and remediate sanitary sewer blockages, exfiltration, overflow, and wet weather overflows from sanitary sewers to the MS4.

3. Public Construction Activities Management

a) Each Permittee shall implement a program to control runoff from construction activity at all construction sites. To accomplish this, the Permittees shall revise their Construction Development Program in the SQMP within 180 days of adoption of this Order, subject to the approval of the Executive Officer. The revisions shall specify a schedule for implementation by each Permittee, and must contain the following minimum elements, including performance measures, schedules for implementation, and shall include the following categories of construction:

(1) Five or more acres;

(2) Between one and five acres; and

(3) Less than one acre.

b) Each Permittee shall comply with requirements 1, 2, and 3 in the Construction Section of this Order and with the following requirements at all public construction sites:

(1) Design and construction of public facilities shall be consistent with the requirements and dates specified for private development in Part 4.C Programs for Development Planning;

(2) Prepare and retain site-specific SWPPPs for municipal construction sites;

(3) Implement construction and post-construction storm water controls as required of private construction projects, including numerical mitigation criteria for post-construction BMPs;

(4) Implement a program to ensure that SWPPPs and BMPs implemented are effective;

(5) Inspect public construction sites and implement changes as necessary to maintain or replace ineffective BMPs in order to protect water quality; and

(6) Each Permittee shall obtain coverage under the State of California General Construction Activities Storm Water Discharge Permit coverage for public construction sites for sites 5 acres or greater (or part of a larger area of development, etc...) except that a municipality under 100,000 in population need not obtain coverage under a separate permit until March 10, 2003.

c) On March 10, 2003, each Permittee shall obtain coverage under the State of California General Construction Activities Storm Water Discharge Permit coverage for public construction sites for sites 1 acre or greater (or part of a larger area of development, etc...).

3. Vehicle Maintenance/Material Storage Facilities/Corporation Yards Management

a) Each Permittee shall implement pollution prevention plans for public vehicle maintenance facilities and material storage facilities which have the potential to discharge pollutants into storm water.

b) Each Permittee shall implement BMPs to minimize pollutant discharges in storm water including but not be limited to:

(1) Good housekeeping practices;

(2) Material storage control;

(3) Vehicle leaks and spill control; and

(4) Illicit discharge control;

c) Each Permittee shall require that all vehicle/equipment wash areas be self-contained or covered, or equipped with a clarifier, or other pretreatment device, and properly connected to the sanitary sewer to prevent the discharge of pollutants to the MS4 for new facilities or during redevelopment of existing sites.

d) Each Permittee shall, for each municipal yard covered under Phase I of the Federal Storm Water Regulations, obtain separate coverage under the State of California General Industrial Activities Storm Water Discharge Permit except that a municipality under 100,000 in population need not file the NOI until March 10, 2003.

4. Landscape and Recreational Facilities Management

Each Permittee shall continue to implement the following requirements with the following additions:

a) Each Permittee shall implement a standardized protocol for the routine and non-routine application of pesticides, herbicides (including preemergents), and fertilizers.

b) There shall be no appiication of pesticides or fertilizers immediately before, during, or immediately after a rain event or when water is flowing off the area to be applied.

c) The Permittee shall ensure that staff applying pesticides are certified by the California Department of Food and Agriculture, or are under the direct supervision of a certified pesticide applicator.

d) Each Permittee shall implement procedures to encourage retention and planting of native vegetation and to reduce water, fertilizer, and pesticide needs;

e) Each Permittee shall store fertilizers and pesticides indoors or under cover on paved surfaces or use secondary containment;

f) Each Permittee shalll reduce the use, storage, and handling of hazardous materials; and

g) Each Permittee shall regularly inspect storage areas.

5. Storm Drain Operation and Management

Each Permittee shall implement the following BMPs for storm drain inlet Maintenance (except that for any Permittee within an area subject to a trash TMDL, the Permittee may implement a program which maximizes trash removal by using an effective combination of street sweeping, catch basin clean outs, installation of treatment devices, and/or implementation of any other BMPs that achieve waste load allocations):

a) Inspect and clean catch basins between May 1 and September 30 of each year;

b) Classify priority catch-basins to be those that are 40 percent full;

c) Cleaning of priority catch basins, as necessary, between October 1 and April 30;

d) Keep record of catch basins cleaned;

e) Recording of the overall quantity of catch basin waste collected; and

f) Each Permittee shall submit a record (preferably as a GIS layer) of all catch basins in a municipality and identify which are city-owned/ county-owned, and which are priority for more frequent cleaning.

Each Permittee shall implement BMPs for Storm Drain Maintenance that shall include but not be limited to:

a) A program to visually monitor open channel storm drains for debris and identify and prioritize problem areas of illicit discharge for regular inspection;

b) A review of current maintenance activities to assure that appropriate storm water BMPs are being utilized to water quality;

c) Removal of trash and debris from open channel storm drains shall occur a minimum of once per year before the storm season;

d) Minimize the discharge of contaminants during MS4 maintenance and clean outs;

e) Recording of the overall quantity of catch basin waste collected; and

f) Proper disposal of material removed.

6. Streets and Roads Maintenance

a) Each Permittee shall conduct street sweeping on curbed public streets in their permitted area according to the following schedule (except that for any Permittee within an area subject to a trash TMDL, the Permittee may implement a program which maximizes trash removal by using an effective combination of street sweeping, catch basin clean outs, installation of treatment devices, and/or implementation of any other BMPs that achieve waste load allocations):

(1) At a monthly average not less than 4 times per month in areas generating high volumes of trash;

(2) At a monthly average not less than 2 times per month in areas generating moderate volumes of trash on traffic collector streets and residential areas.

b) Permittee-owned parking lots shall be kept clear of debris and oil buildup and cleaned no less than 2 times per month and/or inspected no less than 2 times per month to determine if cleaning is necessary.

c) Each Permittee shall require that sawcutting wastes be recovered and disposed of properly and that in no case shall waste be allowed to enter the storm drain.

d) Concrete and other street and road maintenance materials and wastes shall be managed to prevent pollutant discharges; and

e) The washout of concrete trucks and chutes shall only occur in designated areas and never into storm drains, open ditches, streets, or catch basins leading to the storm drain system.

Each Permittee shall train their employees in targeted positions (whose interactions, jobs, and activities affect storm water quality) regarding the requirements of the storm water management program to:

a) Promote a clear understanding of the potential for maintenance activities to pollute storm water; and

b) Identify and select appropriate BMPs.

7. Emergency Procedures

Each Permittee shall continue to repair essential public services and infrastructure in a manner to minimize environmental damage in emergency situations such as: earthquakes; fires; floods; landslides; or windstorms. BMPs shall be implemented to the extent that measures do not compromise public health and safety. After initial emergency response or emergency repair activities have been completed, each Permittee shall implement BMPs as required under this Order.

F. Program to Eliminate Illicit Connections and Discharges

Permittees shall eliminate all illicit connections and illicit discharges to the storm drain system, and shall document and report all such cases. To accomplish this, the Permittees shall revise their Program for Elimination of Illicit Connection and Illicit Discharge (IC/ID Program) within 180 days of Permit adoption. This revision, which is subject to the approval of the Executive Officer, must specify a schedule for implementation by each Permittee, and must contain the following minimum elements, including performance measures and schedules.

1. General Elements

   a) Implementation: Upon Executive Officer approval of the revised IC/ID Program, each Permittee must develop an Implementation Program which specifies how ~~each Permittee~~ is implementing the revised IC/ID Program from the SQMP. This Implementation Program must be documented, and available for review and approval by the Regional Board when requested.

   b) Management and Tracking System: All Permittees shall make use analytical tools, such as a Geographic Information System or a comparable tool suited to their storm drain system, that will enable the Lead Permittee to manage and track all suspected illicit connections and illicit discharges into the storm drain system. Furthermore, within one year from Permit adoption, the Lead Permittee shall have the capability to locate all permitted discharges, and to track and evaluate patterns and trends of illicit connections and illicit discharges in the entire storm drain system, including portions operated by other Permittees.

   c) Training: Complete, within 180 days of Permit adoption, training for all targeted employees who are responsible for identification, investigation, termination, cleanup, and reporting of illicit connections and discharges. Furthermore, conduct refresher training on an annual basis thereafter.

   d) Documentation and Reporting: Document and report all illicit connections, illicit discharges, and hazardous substances that enter the storm drain, within times specified below.

2. Illicit Connection Elements

   a) Baseline Screening: Permittees shall continue to screen the storm drain system for illicit connections during scheduled infrastructure maintenance. On an annual basis, Permittees shall report, to the Lead Permittee, on the location and length of open channels or closed storm drains that have been screened, and on the status of suspected, confirmed, and terminated illicit connections.

   b) Priority Screening: In addition to the baseline screening that will occur during regularly scheduled maintenance, Permittees shall design and implement a proactive storm drain screening of priority areas. Permittees shall consider, among others, the following factors when designating priority areas: an analysis past illicit connections; and a review of documentation for storm drain connections made in the six months following the 1994 Northridge Earthquake, and in the year following the 1992 civil unrest.

   c) Investigation: Upon discovery through either baseline or priority screening, or upon receiving a report of a suspected illicit

connection, Permittees shall initiate an investigation within 21 days, to determine the source of the connection, the nature and volume of discharge through the connection, and the responsible party for the connection.

d) Termination: Upon confirmation of the illicit nature of a storm drain connection, Permittees shall ensure termination of the connection within 180 days, using enforcement authority as needed. For those cases of illicit connections that require more than 180 days to eliminate due to lengthy court proceedings, the Regional Board Executive Officer may grant time extensions on a case by case basis.

3. Illicit Discharge Elements

a) Abatement and Cleanup: Respond, within 72 hours of discovery or a report of a suspected illicit discharge, with activities to abate, contain, and clean up all illicit discharges, including hazardous substances.

b) Investigation: As soon as practicable, during or immediately following containment and cleanup activities, take enforcement action as appropriate.

PART 5. DEFINITIONS

The following are definitions for terms applicable to this Order:

"Adverse Impact" means a detrimental effect upon water quality or beneficial uses caused by a discharge or loading of a pollutant or pollutants.

"Anti-degradation policies" refers to the *Statement of Policy with Respect to Maintaining High Quality Water in California* (State Board Resolution No. 68-16) which protects surface and ground waters from degradation. In particular, this policy protects waterbodies where existing quality is higher than that necessary for the protection of beneficial uses including the protection of fish and wildlife propagation and recreation on and in the water.

"Applicable Standards and Limitations" means all State, interstate, and federal standards and limitations to which a "discharge" or a related activity is subject under the CWA, including "effluent limitations, "water quality standards, standards of performance, toxic effluent standards or prohibitions, "best management practices," and pretreatment standards under sections 301, 302, 303, 304, 306, 307, 308, 403 and 404 of CWA.

"Authorized Discharge" means any discharge that is authorized pursuant to an NPDES permit or meets the conditions set forth in this Order.

"Automotive Repair Shop" means a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.

"BAT/BCT Criteria" means treatment-based standards for reducing the discharge of pollutants, as defined in 40 CFR subchapter N, for specific categories of industrial facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards. Effluent limitations have been defined in 40 CFR for the reduction of toxic pollutants using Best Available Technology Economically Achievable (BAT) and for the reduction of conventional pollutants using Best Conventional Pollutant Control Technology (BCT).

"Basin Plan" refers to the Water Quality Control Plan, Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, adopted by the Regional Board on June 13, 1994 and subsequent amendments.

"Beneficial Uses" means the existing or potential uses of receiving waters in the permit area as designated by the Regional Board in the Basin Plan.

"Best Management Practices (BMPs)" are methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint source discharges including storm water. BMPs include structural and nonstructural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

"Commercial Development" means any development on private land that is not heavy industrial or residential. The category includes, but is not limited to: hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, multi-apartment buildings, car wash facilities, mini-malls and other business complexes, shopping malls, hotels, office buildings, public warehouses and other light industrial complexes.

"Construction" means constructing, clearing, grading, or excavation that results in soil disturbance. Construction includes structure teardown. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety.

"Control" means to minimize, reduce, eliminate, or prohibit by technological, legal, contractual or other means, the discharge of pollutants from an activity or activities.

"Dechlorinated Swimming Pool Discharge" shall mean swimming pool discharges which have no measurable chlorine and do not contain any detergents, wastes, or additional chemicals not typically found in swimming pool water. The term does not include swimming pool filter backwash.

"Development" shall mean any construction, rehabilitation, redevelopment or reconstruction of any public or private residential project (whether single-family, multi-unit or planned unit development); industrial, commercial, retail and other non-residential projects, including public agency projects; or mass grading for future construction.

"Directly Adjacent" means situated within 200 feet of the contiguous zone required for the continued maintenance, function, and structural stability of the environmentally sensitive area.

"Director" shall mean the Director of Public Works of the County and Person(s) designated by and under the Director's instruction and supervision.

"**Directly Discharging**" means outflow from a drainage conveyance system that is composed entirely or predominantly of flows from the subject, property, development, subdivision, or industrial facility, and not commingled with the flows from adjacent lands.

"**Discharge**" when used without qualification means the "discharge of a pollutant."

"Discharge of a Pollutant" means: Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source" or, Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. The term discharge includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect Discharger."

"Disturbed Area" means an area that is altered as a result of clearing, grading, and/or excavation.

"Effluent limitation" means any restriction imposed by the Regional Board on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean.

"Environmentally Sensitive Areas" means an area "in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which would be easily disturbed or degraded by human activities and developments" (California Public Resources Code § 30107.5). Areas subject to storm water mitigation requirements are: areas designated as an Area of Special Biological Significance (ASBS) by the State Water Resources Control Board; an area designated as a Significant Natural Area by the California Department of Fish and Game; an area listed in the Regional Board Basin Plan as supporting the "Rare, Threatened, or Endangered Species (RARE)" beneficial use; or an area identified by the Permittees as environmentally sensitive for water quality purposes, based on the Regional Board Basin Plan and Clean Water Act Section 303(d) Impaired Water-bodies List for Los Angeles County. Refer to Attachment XXX for a map of Significant Natural Areas.

"Executive Advisory Committee" refers to the committee composed of representatives of the Los Angeles County Flood Control District, the City of Los Angeles, and the five Watershed Management Areas.

"General Construction Activities Storm Water Permit (GCASP)" is the general NPDES permit adopted by the State Water Resources Control Board which authorizes the discharge of storm water from construction activities under certain conditions.

"General Industrial Activities Storm Water Permit (GIASP)" is the general NPDES permit adopted by the State Water Resources Control Board which authorizes the discharge of storm water from certain industrial activities under certain conditions.

"Hillside" means property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is 25% or greater and where grading contemplates cut or fill slopes.

"Illicit Connection" shall mean any man-made conveyance that is connected to the storm drain system without a permit, excluding roof drains and other similar type connections. Examples include channels, pipelines, conduits, inlets, or outlets that are connected directly to the storm drain system.

"Illicit Discharge" means any discharge to the storm drain system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term illicit discharge includes all non storm-water discharges except discharges pursuant to an NPDES permit, discharges that are identified in Part 1 of this order, and discharges authorized by the Regional Board Executive Officer.

"Illicit Disposal" means any disposal, either intentionally or unintentionally, of material(s) or waste(s) that can pollute storm water.

"Industrial/Commercial Facility" means any facility involved and/or used in either the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services. This category of facilities includes, but is not limited to, any facility defined by the Standard Industrial Classifications (SIC). Facility ownership (federal, state, municipal, private) and profit motive of the facility are not factors in this definition.

"Infiltration" means the downward entry of water into the surface of the soil.

"Local SWPPP" refers to the Storm Water Pollution Prevention Plan required by the local agency if the project is not subject to the Statewide Construction Activities General Permit.

"Maximum Extent Practicable (MEP)" refers to the standard for implementation of storm water management programs to reduce pollutants in storm water. It is the maximum extent possible taking into account equitable consideration and competing facts, including, but not limited to: the gravity of the problem, public health risk, societal concern, environmental benefits, pollutant removal effectiveness, regulatory compliance, public acceptance, implementability, cost and technical feasibility. Section 402(p)(3)(B)(iii) of the CWA requires that municipal permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

"Method Detection Limit (MDL)" is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR 136, Appendix B.

"Minimum Level (ML)" is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

"Municipal Separate Storm Sewer System (MS4)" means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) owned by a State, city, county, town or other public body, that is designed or used for collecting or conveying storm water, which is not a combined sewer, and which is not part of a publicly owned treatment works.

"National Pollutant Discharge Elimination System (NPDES)" means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA. The term includes an "approved program."

"New Development" means land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision.

"Non-Storm Water Discharge" means any discharge to a storm drain that is not composed entirely of storm water.

"Nuisance" means anything that meets all of the following requirements: (1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; (2) affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; (3) occurs during, or as a result of, the treatment or disposal of wastes.

"Parking Lot" means land area or facility for the temporary parking or storage of motor vehicles used personally, for businesses or for commerce with a lot size of 5,000 square feet or more, or with 25 or more parking spaces.

"Permit" means an authorization, license, or equivalent control document issued by EPA or an "approve State" to implement the requirements of 40 CFR Parts 122, 123, and 124. "Permit" includes an NPDES "general permit" (§ 122.28). Permit does not include any permit which has not yet been the subject of final agency action, such as a "draft permit" or a "proposed permit."

"Permittee(s)" means Co-Permittees and refers to any agency named in this Order as being responsible for permit conditions within its jurisdiction. Permittees to this Order include the Los Angeles County Flood Control District, Los Angeles County, and the cities of Agoura Hills, Alhambra, Arcadia, Artesia, Azusa, Baldwin Park, Bellflower, Bell Gardens, Beverly Hills,

Bradbury, Burbank, Calabasas, Carson, Cerritos, Claremont, Commerce, Compton, Covina, Cudahy, Culver City, Diamond Bar, Downey, Duarte, El Monte, El Segundo, Gardena, Glendale, Glendora, Hawaiian Gardens, Hawthorne, Hermosa Beach, Hidden Hills, Huntington Park, Industry, Inglewood, Irwindale, La Canada Flintridge, La Habra Heights, Lakewood, La Mirada, La Puente, La Verne, Lawndale, Lomita, Los Angeles, Lynwood, Malibu, Manhattan Beach, Maywood, Monrovia, Montebello, Monterey Park, Norwalk, Palos Verdes Estates, Paramount, Pasadena, Pico Rivera, Pomona, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Rosemead, San Dimas, San Fernando, San Gabriel, San Marino, Santa Fe Springs, Santa Monica, Sierra Madre, Signal Hill, South El Monte, South Gate, South Pasadena, Temple City, Torrance, Vernon, Walnut, West Covina, West Hollywood, Westlake Village, and Whittier.

"Phase I Facilities" are the categories of facilities which are required to obtain an NPDES permit for storm water discharges associated with "industrial activity" as required by 40 CFR 122.26(c).

"Pollutants" means those "pollutants" defined in Section 502(6) of the federal Clean Water Act (33.U.S.C.§1362(6)), or incorporated into California Water Code §13373. Examples of pollutants include, but are not limited to the following:

- Commercial and industrial waste (such as fuels, solvents, detergents, plastic pellets, hazardous substances, fertilizers, pesticides, slag, ash, and sludge);
- Metals such as cadmium, lead, zinc, copper, silver, nickel, chromium, and non-metals such as phosphorus and arsenic;
- Petroleum hydrocarbons (such as fuels, lubricants, surfactants, waste oils, solvents, coolants, and grease)
- Excessive eroded soils, sediment, and particulate materials in amounts which may adversely affect the beneficial use of the receiving waters, flora or fauna of the State;
- Animal wastes (such as discharge from confinement facilities, kennels, pens, recreational facilities, stables, and show facilities);
- Substances having characteristics such as pH less than 6 or greater than 9, or unusual coloration or turbidity, or excessive levels of fecal coliform, or fecal streptococcus, or enterococcus;

The term "pollutant" shall not include uncontaminated storm water, potable water or reclaimed water generated by a lawfully permitted water treatment facility.

The term "pollutant" also shall not include any substance identified in this definition, if through compliance with the best management practices available, the discharge of such substance has been eliminated to the maximum extent practicable. In an enforcement action, the burden shall be on the person who is the subject of such action to establish the elimination of the discharge to the maximum extent practicable through compliance with the best management practices available.

"Potable Water Distribution Systems" means sources of flows from drinking water storage, supply and distribution systems including flows from system failures, pressure releases, system maintenance, well development, pump testing fire hydrant flow testing; and flushing and dewatering of pipes, reservoirs, vaults, and wells.

"Priority Pollutants" are those constituents referred to in 40 CFR 401.15 and listed in the EPA NPDES Application Form 2C, pp. V-3 through V-9.

"Project" means all development and land disturbing activities. The term is not limited to "Project" as defined under California Environmental Quality Act (Pub Resources Code Section 21065).

"Rain Event" means any rain event greater than 0.1 inch in 24 hours.

"Receiving Waters" means all surface water bodies within the permit area that are identified in the Basin Plan.

"Redevelopment" means, but is not limited to, the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; land disturbing activities related with structural or impervious surfaces. Redevelopment that results in the creation or addition of 5,000 square feet or more of impervious surfaces is subject to the requirements for storm water mitigation. If the creation or addition of impervious surfaces is fifty percent or more of the existing impervious surface area, then storm water runoff from the entire area (existing and additions) must be considered for purposes of storm water mitigation. If the creation or additions is less than fifty percent of the existing impervious area, then storm water runoff from only the addition area needs mitigation.

"Regional Administrator" means the Regional Administrator of the Regional Office of the Environmental Protection Agency or the authorized representative of the Regional Administrator.

"Restaurant" means a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC Code 5812).

"Runoff" means any runoff including storm water and dry weather flows from a drainage area that reaches a receiving water body or subsurface. During dry weather it is typically comprised of many base flow components either contaminated with pollutants or uncontaminated.

"Side Walk Rinsing" means pressure washing of paved pedestrian walkways with average water usage of 0.006 gallons per square foot, with no cleaning agents, and properly disposing of all debris collected, as authorized under Regional Board Resolution No. 98-08.

"Site" means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

"Source Control BMP" means any schedules of activities, prohibitions of practices, maintenance procedures, managerial practices or operational practices that aim to prevent storm water pollution by reducing the potential for contamination at the source of pollution.

"SQMP" shall mean the Los Angeles Countywide Stormwater Quality Management Plan.

"Storm Water Pollution Prevention Plan (SWPPP)" shall mean a plan, as required by a State General Permit, identifying potential pollutant sources and describing the design, placement and implementation of BMPs, to effectively prevent non-stormwater Discharges and reduce Pollutants in Stormwater Discharges during activities covered by the General Permit.

"Storm Water" shall mean any surface flow, runoff, and/or drainage associated with rainstorm events and/or snowmelt.

"Stormwater Quality Management Plan" shall mean the Los Angeles Countywide Stormwater Quality Management Plan, which includes descriptions of programs, collectively developed by the Permittees in accordance with provisions of the NPDES Permit, to comply with applicable federal and state law, as the same is amended from time to time.

"Structural BMP" means any structural facility designed and constructed to mitigate the adverse impacts of storm water and urban runoff pollution (e.g. canopy, structural enclosure). The category may include both treatment control BMPs and source control BMPs.

"SUSMP" means the Los Angeles Countywide Standard Urban Stormwater Mitigation Plan. The SUSMP shall address conditions and requirements of new development.

"Total Maximum Daily Load (TMDL)" means the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background.

"Toxicity Identification Evaluation" refers to a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.

"Toxicity Reduction Evaluation" is a study conducted in a step-wise process to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity.

"Treatment" means the application of engineered systems that use physical, chemical, or biological processes to remove pollutants. Such processes include, but are not limited to, filtration, gravity settling, media absorption, biodegradation, biological uptake, chemical oxidation and UV radiation.

"Treatment Control BMP" means any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media absorption or any other physical, biological, or chemical process.

"Water Column Toxicity" means a 70 percent survival rate for a single test or an average of 90 percent survival for three consecutive tests.

"Water Quality Standards and Water Quality Objectives" applicable to the Permittee include those contained in the Los Angeles Regional Water Quality Control Plan (Basin Plan), the California Ocean Plan, the National Toxics Rule, the California Toxics Rule, and other state or federally approved surface water quality plans. Such plans are used by the Regional Board to regulate all discharges, including storm water discharges.

point Source Bioassessment Sampling Procedures" for professional bioassessment as set forth in the CSBP. Results of the Urban Stream Bioassessment Monitoring shall be reported annually as part of the Annual Storm Water Monitoring Report. Results shall include:

a) All physical, chemical and biological data collected in the assessment;

b) Photographic documentation of assessment and reference stations;

c) Documentation of quality assurance and control procedures;

d) Analysis that shall include calculation of the metrics used in the CSBP;

e) Comparison of mean biological and habitat assessment metric values between assessment and reference stations;

f) Electronic data formatted to the California Department of Fish and Game Aquatic Bioassessment Laboratory for inclusion in the Statewide Access Bioassessment Database.

6. A professional environmental laboratory shall perform all sampling, laboratory, quality assurance, and analytical procedures.

F. Bacteria

The Principal Permittee and the City of Los Angeles shall participate in the Southern California Coastal Waters Research Project's development and calibration of water quality models in an effort to characterize the presence and persistence of indicator bacteria in dry and wet weather. This includes participation in the Beach Water Quality Workgroup and coordinating results of AB 411 monitoring with storm water management activities.

G. Trash Monitoring

Permittees shall participate in the development of a baseline trash monitoring program with the respective Permittees, pursuant to the Los Angeles River and Ballona Creek trash TMDLs. The Principal Permittee is encouraged to implement the program in the watersheds that are not presently listed on the 303(d) list for impairment for trash.

H. Natural Stream Study

The Principal Permittee and Permittees in the Malibu Watershed shall participate in, or seek funding to conduct, a study of the impacts of development and peak flow on erosion and habitat in natural stream channels in the Malibu Creek watershed.

I. BMP Effectiveness Study

The Principal Permittee shall conduct or participate in studies to evaluate the effectiveness of structural and treatment control storm water best management

practices. The objectives of this study shall include the following:

- Monitor the reduction of pollutants of concern in storm water (including, but not limited to: trash, suspended sediment, pathogen indicators, nutrients, heavy metals, and oil and grease) from a minimum of three different BMPs that have been properly installed within the year preceding monitoring. Monitoring shall be continued until the effectiveness of the BMP can be determined.
- Evaluate the requirements, feasibility and cost of maintenance for each BMP.
- Develop recommendations for appropriate BMPs for the reduction of pollutants of concern in storm water in Los Angeles County.

The Principal Permittee may participate in the Santa Monica Bay Restoration Foundation's proposed study, "Performance Evaluation of Structural BMPs for Storm water Pollution Control in the Santa Monica Bay Watershed" to meet this requirement. Participation includes collaboration and resource contribution to expand the scope of the proposed study.

J. Standard Monitoring Provisions

1. The Principal Permittee shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the Report of Waste Discharge and application for this Order, for a period of at least five (5) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Regional Board or EPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge.

   Records of monitoring information shall include:

a) The date, exact place, and time of sampling or measurements;

b) The individual(s) who performed the sampling or measurements;

c) The date(s) analyses were performed;

d) The individual(s) who performed the analyses;

e) The analytical techniques or methods used; and,

f) The results of such analyses.

2. All sampling, sample preservation, and analyses must be conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in this Order.

3. All chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by an appropriate governmental regulatory agency.

4. If no flow occurred during the reporting period, the monitoring report shall so state.

5. For any analyses performed for which no procedure is specified in the EPA guidelines or in this Monitoring and Reporting Program, the constituent or parameter analyzed and the method or procedure used must be specified in the monitoring report.

6. Whenever feasible, all MDLs shall be less than California Toxic Rule and Ocean Plan standards. If this is not feasible, the Principal Permittee shall use analytical methods with the lowest MDL.

7. All samples shall be analyzed for SSC and TSS, until the Regional Board Executive Officer determines the most accurate method to quantify concentrations of suspended solid-phase material in surface waters.

8. The Regional Board Executive Officer or the Regional Board, consistent with 40 CFR 122.41, may approve changes to the Monitoring and Reporting Program, after providing the opportunity for public comment, either:

   a) By petition of the Principal Permittee or by petition of interested parties after the submittal of the Annual Monitoring Program Report. Such petition shall be filed not later than 60 days after the Annual Monitoring Program Report submittal date, or

   b) As deemed necessary by the Regional Board Executive Officer following notice to the Principal Permittee.

ATTACHMENT 1

LIST OF CONSTITUENTS IN MONITORING PROGRAM
AND ASSOCIATED DETECTION LIMITS

CONSTITUENTS	USEPA METHOD	DETECTION LIMIT
Conventional Pollutants		(mg/L)
Oil and Grease	413.2	1
Total Phenols	420.1	0.1
Cyanide	335.2	0.01
pH	150.1	0 - 14
Temperature		None
Dissolved Oxygen	---	Sensitivity to 5 mg/L
Bacteria		
Total Coliform	9221B	<20mpn/100ml
Fecal Coliform	9221B	<20mpn/100ml
Fecal Streptococcus	9221B	<20mpn/100ml
General		(mg/L)
Dissolved Phosphorus	300	0.05
Total Phosphorus	300	0.05
Turbidity	180.1	0.1NTU
Suspended-Sediment Concentration		2
Total Suspended Solids	160.2	2
Total Dissolved Solids	160.1	2
Volatile Suspended Solids	160.4	2
Total Organic Carbon	415.1	1
Total Petroleum Hydrocarbon	418.1	1
Biochemical Oxygen Demand	405.1	2
Chemical Oxygen Demand	410.4	20-900
Total Ammonia-Nitrogen	350.2	0.1
Total Kjeldahl Nitrogen	351.2	0.1
Nitrate-Nitrite	4110	0.1
Alkalinity	310.1	2
Specific Conductance	120.1	1umho/cm
Total Hardness	130.2	2
MBAS	425.1	<0.5
Chloride	4110	2
Fluoride	4110	0.1
Sulfate	4110	2

CONSTITUENTS	USEPA METHOD	DETECTION LIMIT

Metals (Total and Soluble)		(µg/L)
Aluminum	202.1	100
Antimony	204.2	0.5*
Arsenic	206.2	1*
Barium	208.2	100
Beryllium	210.2	0.5*
Boron	212.3	250
Cadmium	213.2	.25*
Calcium	215.2	200
Chromium	218.2	0.5*
Copper	219.2	0.5*
Hex. Chromium	7196	5*
Iron	236.2	100
Lead	239.2	0.5*
Magnesium	242.1	200
Manganese	243.2	30
Mercury	245.1	0.2*
Nickel	249.2	1*
Potassium	258.1	100
Selenium	270.2	1*
Silver	272.2	.25*
Sodium	273.1	50
Thallium	279.2	1*
Zinc	289.2	1*

Semivolatile Organic Compounds		(µg/L)
Acids	**8250**	
Benzoic Acid	8250	<5
Benzyl Alcohol	8250	<5
2-Chlorophenol	8250	<2
2, 4-Dichlorophenol	8250	1*
2, 6-Dichlorophenol	8250	<2
4-Dimetylphenol	8250	<2
4, 6-Dinitro-2-metylphenol	8250	<3
2,4-Dinitrophenol	8250	<3
2-Methylphenol	8250	<3
4-Methylphenol	8250	<3
2-Nitrophenol	8250	<3
4-Nitrophenol	8250	<3
4-Chloro-3-methylphenol	8250	1*
Pentachlorophenol	8250	1*
Phenol	8250	<1
2,3,4,6-Tetrachlorophenol	8250	<1
2,4,5-Trichlorophenol	8250	<1

2,4,6-Trichlorophenol	8250	<1
CONSTITUENTS	**USEPA METHOD**	**DETECTION LIMIT**
Base/Neutral	**8250**	**(µg/L)**
Acenapthene	8250	<0.5
Acenapthylene	8250	0.2*
Acetophenone-	8250	<3
Aniline	8250	<3
Anthracene	8250	2.0*
4-Aminobiphenyl	8250	<3
Benzidine	8250	<3
Benzo(a)anthracene	8250	<1
4-Chloroaniline	8250	<1
1-Chloronapthalene	8250	<1
p-Dimethylaminoazobenzene	8250	<3
7,12-Dimethylbenz(a)-anthracene	8250	<1
a-,a-Dimethylphenethylamine	8250	<3
Benzo(a)pyrene	8250	<1
Benzo(b)flouranthene	8250	<1
Benzo(k)flouranthene	8250	<1
Chlordane	8250	<1
Bis(2-chloroethoxy)methane	8250	<1
Bis(2-chlorisopropyl)ether	8250	<1
Bis(2-chloroethyl)ether	8250	<1
Bis(2-ethylhexyl)phtalate	8250	<3
4-Bromophenyl phenyl ether	8250	<1
Butyl benzyl phthalate	8250	<3
2-Chloronapthalene	8250	<1
4-Chlorophenyl phenyl ether	8250	<1
Chrysene	8250	<1
Dibenz(a,j)acridine	8250	<3
Dibenz(a,h)anthracene	8250	0.1*
1, 3-Dichlorobenzene	8250	<0.5
1, 4-Dichlorobenzene	8250	<0.5
1, 2-Dichlorobenzene	8250	<0.5
3, 3-Dichlorobenzidine	8250	<3
Diethylphthalate	8250	<0.5
Dimethylphthalate	8250	<0.5
Di-n-butylphthalate	8250	<3
2,4-Dinitrotoluene	8250	<0.5
2, 6-Dinitrotoluene	8250	<0.5
Diphenylamine	8250	<3
1, 2-Diphenylhydrazine	8250	1*
Di-n-octylphtalate	8250	<3
Ethyl methanesulfonate	8250	<3
Fluoranthene	8250	.05*

Fluorene	8250	0.1*
CONSTITUENTS	**USEPA METHOD**	**DETECTION LIMIT**
Base/Neutral (continued)	**8250**	**(µg/L)**
Hexachlorobenzene	8250	<0.5
Hexachlorobutadiene	8250	<1
Hexachlorocyclopentadiene	8250	<3
Hexachloroethane	8250	<1
Indeno(1, 2, 3-cd)pyrene	8250	0.05*
Isophorone	8250	<0.5
3-Methylcholanthrene	8250	<3
Methyl methanesulfonate	8250	<3
Napthalene	8250	0.2*
1-Napthylamine	8250	<3
2-Napthylamine	8250	<3
2-Nitroaniline	8250	<3
3-Nitroaniline	8250	<3
4-Nitroaniline	8250	<3
Nitrobenzene	8250	<0.5
N-Nitroso-di-n-butylamine	8250	<3
N-Nitrosodimethylamine	8250	<3
N-Nitrosodiphenylamine	8250	1*
N-Nitroso-di-N-propylamine	8250	<1
N-Nitrosopiperidine	8250	<3
Pentachlorobenzene	8250	<3
Phenacitin	8250	<3
Phenanthrene	8250	0.05*
2-Picoline	8250	<3
Pronamide	8250	<5
Pyrene	8250	0.05*
5-Tetrachlorobenzene	8250	<3
1, 2, 4,-Trichlorobenzene	8250	<0.5
Pesticides	**608**	**µg/L**
Aldrin	608	0.005*
alpha-BHC	608	0.05
beta-BHC	608	0.05
delta-BHC	608	0.05
gamma-BHC (Lindane)	608	0.05
Carbofuran	531.1	<5
Chlordane	608	0.05
4, 4'-DDD	608	0.05*
4, 4'-DDE	608	0.05*
4, 4'-DDT	608	0.01*
Benzaton	515.1	<2

Dieldrin	608	0.01*
Endosulfan I	608	<0.1
Endosulfan II	608	<0.1
Endosulfan sulfate	608	0.05*
Endrin	608	0.01*
Endrin aldehyde	608	0.01*
Glyphosate	547	<.5
Heptachlor	608	0.01*

CONSTITUENTS	USEPA METHOD	DETECTION LIMIT
Pesticides (continued)	**8250**	**(µg/L)**
Heptachlor epoxide	608	0.01*
Methoxychlor	608	<0.5
Toxaphene	608	0.5*
2,4-D	515.1	<0.02
2,4,5-TP-SILVEX	515.1	<0.2
Polychlorinated Biphenyls	**608**	**(µg/l)**
Aroclor-1016	608	0.5*
Aroclor-1221	608	0.5*
Aroclor-1232	608	0.5*
Aroclor-1242	608	0.5*
Aroclor-1248	608	0.5*
Aroclor-1254	608	0.5*
Aroclor-1260	608	0.5*
Herbicides		**(µg/L)**
Diazinon		0.01
Chlorpyrifos		0.05
Diuron		1
Malathion		1
Prometryn	507	2
Atrazine	507	2
Simazine	507	<2
Cyanazine	507	2
Molinate	507	<.01
Thiobencarb	507	<.1
Volatile Organic Compounds (VOCs)	**8240A**	**(µg/L)**
Acetonitrile	8240A	10.0
Acrolein	8240A	2*
Acrylonitrile	8240A	0.5
Benzene	8240A	0.5

Bromoform	8240A	0.5
2-Butanone	8240A	10.0
Carbon Disulfide	8240A	10.0
Carbon Tetrachloride	8240A	0.5
Chlorobenzene	8240A	0.5
Chlorodibronmethane	8240A	0.5
Chloroethane	8240A	0.5
2-Chloroethyl vinyl ether	8240A	1.0
Chloroform	8240A	0.5
Dibromomethane	8240A	0.5
1,2-Dibromo-3Chloropropane	8240A	<.01
1, 4-Dichloro-2-butene	8240A	10.0
Dichlorobromomethane	8240A	0.5
Dichlorodifluoromethane	8240A	0.5
1, 1-Dichloroethane	8240A	0.5
1, 2-Dichloroethane	8240A	0.5
1, 1-Dichloroethene	8240A	0.5

CONSTITUENT	USEPA METHOD	DETECTION LIMIT
VOCs (continued)	**8240A**	**(µg/L)**
trans-1, 2-Dichloroethene	8240A	0.5
1, 2-Dichloropropane	8240A	0.5
cis-1, 3-Dichloropropene	8240A	0.5
trans-1, 3-Dichloropropene	8240A	0.5
Ethanol	8240A	10.0
Ethylbenzene	8240A	0.5*
Ethylene Dibromide	8240A	<.01
Ethylene Oxide	8240A	10.0
Ethyl Metcrylate	8240A	0.5
2-Hexanone	8240A	5.0
Iodomethane	8240A	0.5
Methyl Bromide	8240A	5.0
Methyl Chloride	8240A	5.0
Methylene Chloride	8240A	1.0
4-Methyl-2-pentanone	8240A	5.0
Styrene	8240A	0.5
1, 1, 2,2-Tetrachloroethane	8240A	0.5
Tetrachloroethane	8240	0.5
Toluene	8240A	0.5*
Trichlorofluoromethane	8240A	1.0
1, 2,3-Trichloropropane	8240A	0.5
Trichloroethene	8240A	0.5
1, 1, 1-Trichloroethane	8240A	1.0
1, 1,2-Trichloroethane	8240A	1.0
1,1,2-Trichloro- 1,2,2 trifilluoroethane	8240A	<.5
Vinyl acetate	8240A	5.0

Vinyl chloride	8240A	0.5
Xylene (Total)	8240A	0.5

*** Method Detection Limits have been decreased pursuant to the California Toxics Rule**

Attachment 2

Total maximum Daily Loads Scheduled for Implementation in Los Angeles County Watershed Within 5 Years

Waterbody	*TMDL*	*Consent Decree Year*
Malibu	Coliform	2002
Malibu	Nutrients	2002
Malibu Creek Lakes and Tributaries	Metals	
Ballona Creek	Trash	2001
Ballona Creek	Coliform	2006
Ballona Creek	Historic Pesticides	2004
Ballona Creek	Metals	2004
Dominguez Channel/LA Harbor	Coliform	2002
Los Angeles River	Trash	2001
Los Angeles River	Nutrients	2001
Los Angeles River	Coliform	2001
Los Angeles River	Chlorpyrifos	2006
Los Angeles River	Metals	2004
San Gabriel River	Nutrients	2003
San Gabriel River	Coliform	
San Gabriel River	Metals	2006
San Gabriel Lakes	Coliform	
Santa Monica Bay Beaches	Coliform	2002
Santa Monica Bay Beaches	Metals	2004
Santa Monica Bay Beaches	Chlordane	2006

"Waters of the State" means any surface water or groundwater, including saline waters, within boundaries of the state.

"Waters of the United States" or "Waters of the U.S." means:

a. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
b. All interstate waters, including interstate "wetlands";
c. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
    1. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
    2. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    3. Which are used or could be used for industrial purposes by industries in interstate commerce;
d. All impoundments of waters otherwise defined as waters of the United States under this definition;
e. Tributaries of waters identified in paragraphs (a) through (d) of this definition;
f. The territorial sea; and
g. "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraph (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.22(m), which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to man-made bodies of water, which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with US EPA.

"Wet Season" means the calendar period beginning October 1 through April 15.

"Whole Effluent Toxicity" means the aggregate toxic effect of an effluent measured directly by a toxicity test.

PART 6. STANDARD PROVISIONS

A. Standard Requirements

1. The Permittees shall comply with all provisions and requirements of this permit.

2. Should the Permittees discover a failure to submit any relevant facts or that it submitted incorrect information in a report, it shall promptly submit the missing or correct information.

3. The Permittees shall report all instances of non-compliance not otherwise reported at the time monitoring reports are submitted.

4. This Order includes the attached Monitoring and Reporting Program, and Standard Urban Storm Water Mitigation Plan, which are a part of the permit and must be complied with in the same manner as with the rest of the requirements in the permit.

B. Public Review

1. All documents submitted to the Regional Board in compliance with the terms and conditions of this Permit shall be made available to members of the public pursuant to the Freedom of Information Act (5 U.S.C. Section 552 (as amended) and the Public Records Act (California Government Code Section 6250 *et seq.*).

2. All documents submitted to the Executive Officer for approval shall be made available to the public for a 30-day period to allow for public comment.

C. Duty to Comply [40 CFR 122.41(a)]

1. The Principal Permittee must comply with all of the terms, requirements, and conditions of this Order. Any violation of this order constitutes a violation of the Clean Water Act, its regulations and the California Water Code, and is grounds for enforcement action, Order termination, Order revocation and reissuance, denial of an application for reissuance; or a combination thereof.

2. A copy of these waste discharge specifications shall be maintained by each Permittee so as to be available during normal business hours to Permittee employees and members of the public.

3. Any discharge of wastes at any point(s) other than specifically described in this Order is prohibited, and constitutes a violation of the Order.

D. Duty to Mitigate [40 CFR 122.41 (d)]

The Permittees shall take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.

E. Inspection and Entry [40 CFR 122.41(i)]

The Regional Board, USEPA, and other authorized representatives shall be allowed:

1. Entry upon premises where a regulated facility is located or conducted, or where records are kept under conditions of this Order;

2. Access to copy any records that are kept under the conditions of this Order;

3. To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and,

4. To photograph, sample, and monitor for the purpose of assuring compliance with this Order, or as otherwise authorized by the Clean Water Act and the California Water Code.

F. Proper Operation and Maintenance [40 CFR 122.41 (e)]

The Permittees shall at all times properly operate and maintain all facilities and systems of treatment and (and related appurtenances) that are installed or used by the Permittees to achieve compliance with this Order. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar system that are installed by a Permittee only when necessary to achieve compliance with the conditions of this Order.

G. Signatory Requirements [40 CFR 122.41(k)]

Except as otherwise provided in this Order, all applications, reports, or information submitted to the Regional Board shall be signed by the Director of Public Works, City Engineer, or authorized designee under penalty of perjury.

H. Reopener and Modification [40 CFR 122.41(f)]

1. This Order may only be modified, revoked, or reissued, prior to the expiration date, by the Regional Board, in accordance with the procedural requirements of the Water Code and Title 23 of the California Code of Regulations for the issuance of waste discharge requirements, and upon prior notice and hearing, to:

   a) Address changed conditions identified in the required reports or other sources deemed significant by the Regional Board;

   b) Incorporate applicable requirements or statewide water quality control plans adopted by the State Board or amendments to the Basin Plan;

c) Comply with any applicable requirements, guidelines, and/or regulations issued or approved pursuant to CWA Section 402(p); and/or,

d) Consider any other federal, or state laws or regulations that became effective after adoption of this Order.

2. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

a) Violation of any term or condition contained in this Order;

b) Obtaining this Order by misrepresentation, or failure to disclose all relevant facts; or,

c) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

3. This Order may be modified, revoked and reissued, or terminated for cause.

4. The filing of a request by the Principal Permittee for a modification, revocation and re-issuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

5. This Order may be modified to make corrections or allowances for changes in the permitted activity listed in this section, following the procedures at 40 CFR Part 122.63, if processed as a minor modification. Minor modifications may only:

a) Correct typographical errors, or

b) Require more frequent monitoring or reporting by the Permittee.

I. Severability

The provisions of this permit are severable; and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected.

J. Duty to Provide Information [40 CFR 122.41(h)]

The Permittees shall furnish, within a reasonable time, any information the Regional Board or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Permittees shall also furnish to the Regional Board, upon request, copies of records required to be kept by this Order.

K. Twenty-four Hour Reporting[1]

1. The Permittees shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time any Permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

2. The Regional Board may waive the required written report on a case-by-case basis.

L. Bypass [40 CFR 122.41(m)][2]

Bypass (the intentional diversion of waste streams from any portion of a treatment facility) is prohibited. The Regional Board may take enforcement action against Permittees for bypass unless:

1. Bypass was unavoidable to prevent loss of life, personal injury or severe property damage. (Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.);

2. There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated waste, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that could occur during normal periods of equipment downtime or preventive maintenance;

3. The Permittee submitted a notice at least ten days in advance of the need for a bypass to the Regional Board; or,

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[1] This provision applies to incidents where effluent limitations (numerical or narrative) as provided in this Order or in the Los Angeles County SQMP are exceeded, and which endanger public health or the environment.

[2] This provision applies to the operation and maintenance of storm water controls and BMPs as provided in this Order or in the Los Angeles County SQMP.

4. Permittees may allow a bypass to occur that does not cause effluent limitations to be exceeded, but only if it is for essential maintenance to assure efficient operation. In such a case, the above bypass conditions are not applicable. The Permittee shall submit notice of an unanticipated bypass as required.

M. Upset [40 CFR 122.41(n)][3]

1. A Permittee that wishes to establish the affirmative defense of an upset in an action brought for non compliance shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

a) An upset occurred and that the Permittee can identify the cause(s) of the upset;

b) The permitted facility was being properly operated by the time of the upset;

c) The Permittee submitted notice of the upset as required; and,

d) The Permittee complied with any remedial measures required.

2. No determination made before an action for noncompliance, such as during administrative review of claims that non-compliance was caused by an upset, is final administrative action subject to judicial review.

3. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

N. Property Rights [40 CFR 122.4(g)]

This Order does not convey any property rights of any sort, or any exclusive privilege.

O. Enforcement

1. Violation of any of the provisions of the NPDES permit or any of the provisions of this Order may subject the violator to any of the penalties described herein, or any combination thereof, at the discretion of the prosecuting authority; except that only one kind of penalties may be applied for each kind of violation. The Clean Water Act provides the following:

a) Criminal Penalties for:

(1) Negligent Violations:
The CWA provides that any person who negligently violates permit conditions implementing sections 301, 302, 306,

[3] *Supra*. See footnote number 2.

307, 308, 318, or 405 of the Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both.

(2) Knowing Violations:

The CWA provides that any person who knowingly violates permit conditions implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

(3) Knowing Endangerment:

The CWA provides that any person who knowingly violates permit conditions implementing sections 301, 302, 307, 308, 318, or 405 of the Act and who knows at that time that he is placing another person in imminent danger of death or serious bodily injury is subject to a fine of not more than $250,000, or by imprisonment for not more than 15 years, or both.

(4) False Statement:

The CWA provides that any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed of required to be maintained under the Act or who knowingly falsifies, tampers with, or renders inaccurate, any monitoring device or method required to be maintained under the Act, shall upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years, or by both. If a conviction is for a violation committed after a first conviction of such person under this paragraph, punishment shall be by a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or by both. (See section 309(c)(4) of the Clean Water Act.)

b) Civil Penalties

The CWA provides that any person who violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed $27,500 per day for each violation.

2. The California Water Code provides that any person who violates a waste discharge requirement provision of the California Water Code is subject to civil penalties of up to $5,000 per day, $10,000 per day, or $25,000 per day of violation; or when the violation involves the discharge of pollutants, is subject to civil penalties of up to $10 per gallon per day or $25 per gallon per day of violation; or some combination thereof, depending on the violation or combination violations.

P. Need to Halt or Reduce Activity not a Defense [40 CFR 122.41(c)]

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order.

Q. Modifications to this Order

This Order may be modified, revoked, or reissued, prior to the expiration date as follows:

1. To address changed conditions identified in the required technical reports or other sources deemed significant by the Regional Board;

2. To incorporate applicable requirements or statewide water quality control plans adopted by the State Board, or amendments to the Basin Plan;

3. To comply with any applicable requirements, guidelines, or regulations issued or approved under Section 402(p) of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order. The Order as modified or reissued under this paragraph shall also contain any other requirements of the CWA then applicable; or,

4. Any amendments under the Clean Water Act.

R. Regional Board Order No. 96-054 is hereby rescinded.

S. This Order expires on July 26, 2006]. The Principal Permittee must submit a Storm Water Quality Management Plan in accordance with Title 23, California Code of Regulation, not later than 180 days in advance of such date as application for reissuance of waste discharge requirements.

I, Dennis A. Dickerson, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on July 26, 2001.

_____

Dennis A. Dickerson
Executive Officer

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM

FOR

STORM WATER MANAGEMENT/URBAN RUNOFF DISCHARGES
FOR
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT,
DEPARTMENT OF PUBLIC WORKS, AND THE CITIES OF LOS ANGELES COUNTY

NPDES PERMIT NO. CAS614001 (CI 6948)

I. Program Reporting Requirements

A. Program Management

Permittees shall submit, by October 15, 2001, the Annual Storm Water Report and Assessment for the period July 1, 2000, through July 26, 2001 documenting the status of the general program up to permit reissuance and the results of analyses from the monitoring and reporting program.

The Principal Permittee shall submit, by October 1 of each year beginning the year 2002, an Annual Storm Water Report and Assessment documenting the status of the general program and individual tasks contained in the SQMP, and an integrated summary of the results of analyses from the monitoring program described under *II. Monitoring Requirements*.

The Annual Storm Water Report and Assessment shall include any proposed changes to the SQMP as approved by the Executive Advisory Committee. The Annual Storm Water Report and Assessment Report shall cover each fiscal year from July 1 through June 30. At a minimum, the annual report will include the following:

1. A comparison of program implementation results to performance standards established in this Order and in the SQMP;

2. Status of compliance with permit requirements including implementation dates for all time-specific deadlines. If permit deadlines are not met, Permittees shall report the reasons why the requirement was not met,

how the requirements will be met in the future, including projected implementation date;

3. An assessment of the effectiveness of SQMP requirements to reduce storm water pollution. This assessment will be based upon the specific record-keeping information requirement in each major section of the permit, monitoring data, and any other information related to program effectiveness. Beginning in the Year 2002, to the extent that data collected in monitoring requirements included herein and existing monitoring data allows, the Principal Permittee shall include an analysis of trends, land use contributions, pollutant source identifications, BMP effectiveness, and impacts on beneficial uses;

4. An analysis of the data to identify areas of the Program coverage which cause or contribute to exceedances of water quality standards or objectives, predominate land uses in these areas, and potential sources of pollutants in those areas;

5. Discussion of the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with the waste discharge requirements.

B. Public Information and Participation Program

Programs for Residents

1. Number of storm drain inlets and designated public access points to creeks, channels, and other relevant water bodies in each Permittees' systems that are marked or posted with a no dumping message. If the requirement that 100 percent of storm drains inlets are marked/signed is not met, each Permittee shall report the reasons why, and how the requirement will be met in the future, including the implementation date.

2. Description of activities on distributing brochures, community outreach efforts, public communication efforts and educational programs in schools including an estimate of the number of impressions per year made on the general public about storm water quality via print, local TV access, local radio presentations, meetings or other appropriate media;

3. Description of the quarterly Public Outreach Strategy meetings, including percentage of Permittee attendance, effectiveness at coordinating Permittee education programs, and overall effectiveness based on Permittee evaluations. Also, a description of each Permittee's participation in and contribution to the Public Education and Participation Program.

4. Description of activities for the Pollutant-Specific Outreach programs, including creating and distributing outreach materials to the general public

and target audiences, such as schools, community groups, contractors and developers, and at appropriate counters and events.

Programs for Businesses

1. Description of the Corporate Outreach program, including the number of consultations with corporate heads of gas stations and restaurant chains and the percentage of the total.

2. Description of the Business Assistance Program, including the number of businesses that requested assistance and the number that were assisted through site visits, telephone consultations, presentations, or material distribution.

C. Programs for Industrial / Commercial Inspections

1. An annual update of the watershed-based inventory of all Industrial/Commercial sites identified as a threat to water quality. This includes all Phase I industrial facilities, motor vehicle repair shops, motor vehicle body shops, motor vehicle parts and accessories facilities, restaurants, and other facilities that contribute or have the potential to contribute to impairments of receiving waters. The inventory shall include at a minimum: facility name, site address, SIC code and narrative description of activities performed at each facility.

2. Number of restaurants, automotive businesses, industrial facilities, and other commercial facilities targeted under the program. During the past year, the number of industrial and commercial inspections conducted, the number of non-compliant sites, and the number of industrial facilities the Permittees have identified that have failed to file an NOI.

3. The percentage of targeted staff trained annually.

D. Programs for Planning and Land Development

1. Total number and percent of all development projects reviewed and conditioned to meet SUSMP requirements by category such as residential, commercial, and industrial.

2. Total square feet of impervious area conditioned for mitigation by development and redevelopment category.

3. Significant date rewrite completed of General Plan with storm water considerations.

4. Percent and total number of targeted staff trained annually [100 percent].

5. Date CEQA guidelines revision completed to include storm water mitigation conditions.

6. Date BMP design and sizing technical manual completed and made available electronically.

E. Programs for Construction Sites

1. Number of construction projects requiring local SWPPPs in the past year and the percentage of projects in categories requiring submittal of a local SWPPP for which local SWPPPs were completed.

2. Number and type of enforcement actions, applicable to storm water enforcement, taken at construction sites during the past year.

3. Description of the outreach program to the construction community and assessment of its effectiveness; This assessment should include a discussion of the number of inspections, site visits, or other meetings conducted.

4. The percentage of targeted staff trained annually.

F. Programs for Illicit Discharge and Illegal Connection Control

1. Annual update of the analytical tool used to manage and track illicit connections and discharges, including an evaluation of patterns and trends of illicit connections and illicit discharges in the entire storm drain system.

2. Location and length of open channels and closed storm drains that were screened by all Permittees, and the status of all suspected, confirmed, and terminated illicit connections.

3. Number of reports of illicit discharges that Permittees responded to, percentage that were identified as actual illicit discharges, and percentage of the actual illicit discharges where the incident was either cleaned up, referred to another responsible agency and/or follow up/education with the discharger was conducted.

4. Percentage of cleanup and abatement activities that occurred within 72 hours of discovery or report of a suspected illicit discharge and justification for response activities that exceeded 72 hours.

5. For groups of identified illicit discharge types where the probable causes for the discharge can be identified, report probable causes and the actions taken to prevent similar discharges from occurring;

6. Number of illicit connections identified in the past year;

7. Percentage of investigations that were initiated within 21 days of identification or a report of an illicit connection and justification for those that exceeded 21 days.

8. Number of illicit connections eliminated in the past year;

9. Percentage of illicit connections terminated within 180 days of identification and justification for terminations that exceeded 180 days.

10. Number and type of enforcement actions for storm water illicit discharges and/or illicit connections taken in the past year;

11. A summary from records on illicit discharges and connections which includes type of material, type of source, date of initial inspection, enforcement action taken, date of follow-up inspection, date of conclusion/clean up/removal/ follow up/education;

12. The percentage of targeted employees trained annually.

G. Programs for Facilities Maintenance

1. A summary which at a minimum includes the quantity, predominant types and likely sources of trash removed from catch basin inlets;

2. A summary of the total curb miles of streets swept annually and the percentage of total curb miles swept annually as a function of total curb miles;

3. The percentage of targeted staff trained annually; and,

H. Pollutants of Concern

1. A progress report on sources of pollutants of Concern, BMPs for their control, and implemented BMP effectiveness.

I. Monitoring Program Management

1. The Principal Permittee shall submit a Storm Water Monitoring Report on August 15, 2002, and annually on August 15, thereafter. The report shall include:

a) status of implementation of the monitoring program;

b) results of the monitoring program;

c) a general interpretation of the results;

d) both tabular and graphical summaries of the monitoring data obtained during the previous year;

e) an analysis of trends, land use contributions, pollutant source identifications, BMP effectiveness, and impacts on beneficial uses; and

f) suggestions for improvements to the SQMP based on the analysis.

2. The Principal Permittee shall submit, by October 15, 2001, the results of analyses from the monitoring and reporting program for the period July 1, 2000 through July 26, 2001 together with the Annual Report for the same period.

All applications, reports, or information submitted to the Regional Board shall be signed and certified pursuant to EPA regulations 40 CFR 122.41 (k). Each report shall contain the following completed declaration:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility, of a fine and imprisonment for knowing violations.

Executed on the ___ day of _____ , 20_,

at _____.

(Signature)_____(Title)_____";

Permittee submittals to the Principal Permittee shall also be signed and certified pursuant to EPA regulations 40 CFR 122.41 (k).

The Principal Permittee shall mail the original of each annual report to:

INFORMATION TECHNOLOGY
CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD - LOS ANGELES REGION
320 W. 4TH STREET, SUITE 200
LOS ANGELES, CA 90013

A copy of the annual report shall also be mailed to:

REGIONAL ADMINISTRATOR
ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco, CA 94105

II. Monitoring Requirements

The Principal Permittee shall implement the Countywide Storm Water Monitoring Program as follows.

A. Mass Emissions

1. The Principal Permittee shall monitor mass emissions from the following six mass emission stations: Ballona Creek, Malibu Creek, Los Angeles River, San Gabriel River, Coyote Creek, and Dominguez Channel. The Principal Permittee shall monitor the first storm event and a minimum of 3 additional storm events of each season. One dry weather event per year at each mass emission station shall also be monitored.

2. Samples for mass emission station monitoring shall be taken with the same type of automatic sampler used under Order 96-054, as well as through grab sampling. The samplers shall be set to monitor storms totaling 0.25 inches or greater of rainfall. Samples taken at mass emission stations during the first storm event should be analyzed for all constituents listed in Attachment 1. The Principal Permittee may elect not to sample Volatile Organic Compounds from the list of constituents for mass emission stations.

3. Al samples shall be analyzed for Suspended-Sediment Concentration (SCC) and Total Suspended Solids (TSS). Particle size distribution shall also be determined, depending on the development of appropriate sample handling and analytical methods.

4. Method detection limits for priority pollutants shall be modified, pursuant to the California Toxics Rule. The modified method detection limits are listed in Attachment 1. If a constituent has been detected in 100 percent of samples during the last 2 years of monitoring, the Principal Permittee may continue to use the existing method detection limit until the constituent is not detected, afterwhich, the method detection limits shall be lowered to those in Attachment 1.

5. If a constituent is not detected at the method detection limit for its respective test method listed in Attachment 1 in more than 25 percent of the first ten sampling events or on a rolling basis using ten consecutive sampling events, it need not be further analyzed, with the exception of the first storm of each season, unless the observed occurrences show high concentrations and are cause for concern.

B. Toxicity Monitoring

1. Water Column Toxicity Monitoring

The Principal Permittee shall analyze two wet weather samples and two dry weather samples from each mass emission station for toxicity per year. A minimum of one freshwater and one marine species shall be used for toxicity testing. Specifically, Ceriodaphnia dubia and sea urchin fertilization

shall be used. If toxicity is not detected in either of the dry weather samples for any given mass emission station, the Principal Permittee may reduce dry weather toxicity testing to one sample per year at that station. If toxicity is not detected in either of the wet weather samples for any given mass emission station, wet weather toxicity testing may be reduced to one sample from the first storm per year at that station. Toxicity shall be defined as a 70 percent survival rate for a single test or an average of 90 percent survival for three consecutive tests.

2. Toxicity Identification Evaluations (TIE)

The Principal Permittee shall conduct Phase I TIEs on wet weather samples when two consecutive samples from the same monitoring station show toxicity and on dry weather samples when two consecutive dry weather samples from the same monitoring station show toxicity.

3. Toxicity Reduction Evaluations (TRE)

Following the identification of a toxic pollutant, the Principal Permittee shall perform a TRE for that pollutant and submit it to the Regional Board Executive Officer for approval within one year. TREs shall include procedures for investigating the causes and identifying corrective actions for toxicity problems. Specifically, the following activities shall be included in each TRE:

- Identify the causative agents of toxicity (accomplished with the TIE)
- Isolate the sources of toxicity
- Evaluate the effectiveness of toxicity control options
- Implement effective toxicity control options
- Confirm the reduction in toxicity

If applicable, the Principal Permittee may use the same TRE for the same toxic pollutant in different watersheds.

During TRE development and implementation, the Principal Permittee shall continue monitoring the first storm and one dry weather event per year for toxicity at the subject station. Two years after the TRE has been approved, the Principal Permittee shall analyze two wet weather and two dry weather samples for toxicity to evaluate the effectiveness of the TRE.

The Principal Permittee shall conduct a maximum of two TREs per year. TRE performance shall be prioritized according to the TMDL schedule (Attachment 2) and the level of toxicity present.

The Principal Permittee may use sampling data from previous storm water toxicity monitoring, however, all stations must conduct regular toxicity tests on the freshwater species Ceriodaphnia

dubia where it was not previously conducted. For example, toxicity monitoring activities during the 2001-2002 permit year shall occur according to Table 1.

Table 1. Toxicity Monitoring Activities for 2001-2002

Monitoring Station	***Toxicity Monitoring Activities***
Ballona Creek	Zinc TRE, Copper TRE, toxicity testing on Ceriodaphnia dubia
Malibu Creek	Toxicity testing on Ceriodaphnia dubia, reduced testing on sea urchins
Los Angeles River	Wet and dry weather TIEs, toxicity testing on Ceriodaphnia dubia
San Gabriel River	Wet weather TIE, toxicity testing on Ceriodaphnia dubia
Dominguez Channel	Toxicity monitoring
Coyote Creek	Toxicity monitoring

C. Tributary/Source Identification Monitoring

1. The Principal Permittee shall develop and implement a tributary/source identification monitoring program. At a minimum the program shall consist of station identification, monitoring, and analysis of data for a minimum total of 20 tributary stations throughout the five major watersheds (Ballona Creek, Malibu Creek, Los Angeles River, San Gabriel River, and Dominguez Channel).

2. Each tributary station shall be selected and prioritized based on the TMDL schedule (Attachment 2), and the results of monitoring summarized in the Los Angeles County Integrated Monitoring Report (Integrated Report), located on the internet at http://dpw.co.la.us/epd/wq/IntTC.cfm, and the Land Use Model. To the extent practicable, station selections shall be representative of specific sources of pollutants identified through the Land Use Model. The Principal Permittee may develop a staggered monitoring schedule to ensure sufficient available resources. Staggered monitoring shall begin with a minimum of the ten highest priority tributary stations. The Principal Permittee shall submit the station selections to the Regional Board Executive Officer for approval prior to the issuance of this Order.

3. Permittees shall participate in tributary monitoring when the majority of a monitoring station subwatershed is located in their jurisdiction.

4. The Principal Permittee shall monitor the first storm event and at least 2 additional storm events during each storm season. At least one dry weather event per year will also be sampled at each station.

5. All samples for tributary stations may be taken as grab samples or with an automatic sampler. Constituents to be analyzed for each location shall include the following:

   a) Constituents on the 303(d) and TMDL lists for each receiving water

   b) Constituents that were identified in the Integrated Report as exceeding the objectives of the California Ocean Plan, the Los Angeles Basin Plan, and the California Toxics Rule

   c) Diazinon and chlorpyrifos

   d) Indicator bacteria (total and fecal coliform, streptococcus, and enterococcus)

   e) Toxic pollutants identified by TIEs at that tributary's mass emission station

6. If a constituent is not detected at the method detection limit (MDL) for its respective test method listed in Attachment 1 in more than 25 percent of the first ten sampling events or on a rolling basis using ten consecutive sampling events, it will not be further analyzed unless the observed

occurrences show high concentrations and are cause for concern. The Principal Permittee will also conduct annual confirmation sampling for non-detected constituents at each station for as long as the station is monitored.

7. The Principal Permittee shall submit a report identifying sources and/or source areas of pollutants within each watershed and priority management actions as part of the fourth Annual Report.

D. Receiving Waters Studies

1. The Principal Permittee shall conduct a study the impacts of storm water on receiving waters. The study or studies shall achieve the following objectives:

   a) Sediment Toxicity: Evaluate the extent and causes of sediment toxicity in the estuaries of each of the 5 major watersheds (Ballona Creek, Malibu Creek, Los Angeles River, San Gabriel River, and Dominguez Channel). Existing data from the "Study of the Impact of Stormwater Discharge on Santa Monica Bay" for Ballona and Malibu Creeks may be used.

   b) Plume Studies: Evaluate the dispersion, fate, and transport of storm water pollutants in Dominguez Channel, Los Angeles river, and San Gabriel River.

   c) Benthic Study: Assess the impacts of storm water on the marine benthic community near the mouths of the Dominguez Channel, Los Angeles River, and San Gabriel River. This shall be accomplished by determining the population and community metrics of benthic epifauna and infauna.

   d) Continuation of Santa Monica Bay Study: A follow-up to the "Study of the Impact of Stormwater Discharge on Santa Monica Bay" shall be conducted to determine the persistence of storm water plumes and an estimate of the duration of exposure of swimmers to bacteria and marine life to storm water toxicants and nutrients. Chemical and oceanographic studies shall be conducted to determine the fate of storm water particles discharged into the Santa Monica Bay.

2. The Principal Permittee may meet some or all of the requirements of the Receiving Waters Studies by participating in Regional Monitoring of the Southern California Bight, organized by the Southern California Coastal Water Research Project. This shall involve contributing sufficient funding and participating on the Steering Committee to help identify study objectives, sample sites, and indicators to be measured.

E. Urban Stream Bioassessment Monitoring

1. The Principal Permittee shall develop and implement an urban stream bioassessment monitoring program. At a minimum, the program shall consist of station identification, sampling, monitoring and analysis of data for 20 bioassessment stations in order to determine the biological and physical integrity of urban streams within Los Angeles County. In addition to the urban stream bioassessment stations, three reference bioassessment stations shall be identified, sampled, monitored, and analyzed. The selection, sampling, monitoring, and analysis of bioassessment stations shall meet the following requirements and shall be compatible with the Ambient Monitoring Program being developed by the Regional Board and with the California Department of Fish and Game Bioassessment Program.

   Each urban stream bioassessment station shall:

   a) be located within one of the six watersheds specified in the Mass Emission Monitoring Section;

   b) be representative of urban stream conditions within one of the six watersheds; and

   c) Meet the physical criteria of the California Stream Bioassessment Procedure[4], or a modification thereof, approved by the Regional Board Executive Officer.

2. Reference stations shall be selected in stream reaches that are not listed as impaired on the 303(d) list and that are not representative of urban stream conditions, based on surrounding land uses and a lack of up-stream point source discharges.

3. The Principal Permittee shall submit a proposed urban stream bioassessment monitoring plan, including station selections, to the Regional Board for approval within 180 days of the date this Order is adopted.

4. Each urban stream bioassessment station shall be monitored twice annually, in May and October of each year, beginning in May 2002. A minimum of three replicate samples shall be collected at each station during each sampling event.

5. Sampling, laboratory, quality assurance, and analysis procedures shall follow the standardized procedures set forth in the California Department of Fish and Game's California Stream Bioassessment Procedure (CSBP). Analysis procedures shall include comparison between station mean values for various biological metrics. Sampling, laboratory, quality assurance, and analytical procedures shall follow the standardized "Non-

[4] California Stream Bioassessment Procedure (Protocol Brief for Biological and Physical/Habitat Assessment in Wadeable Streams), California Department of Fish and Game - Aquatic Bioassessment Laboratory, May 1999. Located at www.dfg.ca.gov/cabw/protocols.html.

cc: DD (WP) XS

Rc Rm ASAP

Left message for Kenneth Farfsing on 4.19. WP

Coalition for Practical

Arcadia
Artesia
Bellflower
Bell Gardens
Burbank
Cerritos
Commerce
Compton
Diamond Bar
Downey
Hawaiian Gardens
Industry
Irwindale
La Canada~Flintridge
La Mirada
Lakewood
Lawndale
Monrovia
Montebello
Norwalk
Palos Verdes Estates
Paramount
Pico Rivera
Pomona
Rancho Palos Verdes
Rosemead
Santa Fe Springs
San Gabriel
Sierra Madre
Signal Hill
South Gate
Vernon
Walnut
Whittier

April 13, 2001

Mr. Dennis A. Dickerson
Executive Officer
LARWQCB
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Re: Tentative Agenda – NPDES Workshop – Coalition Concerns

Dear Mr. Dickerson:

The Coalition for Practical Regulation represents 35 Los Angeles County cities, who are Permittees under the Los Angeles County Storm Water Permit. We are in receipt of your April 4, 2001, "Tentative Agenda" for the public workshop on the NPDES Permit Renewal. This letter is sent to request your direction on how best to present the Coalition's comments on the proposed NPDES Permit, since your agenda does not include items for discussion involving many issues of concern to the cities.

We also want to express our concern over the limited time we have had to review the permit, as the workshop has been scheduled less than two weeks from the release of an 86 page draft permit. Given the length of the draft permit and given that there are some 84 Permittees that need to review it, less than eleven working days of time is not sufficient to allow for a complete dialogue at the workshop.

The Coalition wants to work with you to make the public comment period as productive as possible, and to fully hear and understand our concerns. Regardless of when the workshop goes forward, the draft agenda appears somewhat limited in scope. It divides the time your staff will take to present the permit, with the time allowed for public comments. The agenda is arranged into five limited categories that do not address many of the concerns of the Permittees. In addition, we do not know how much time your staff will take to present the issues, but it appears that the public comment period is very limited. For example – your category to present your recommended shifting of the State's inspection and enforcement responsibilities to the cities is limited to 40 minutes for both staff presentations and public comment. The cities have significant concerns with this major program shift, and 40 minutes does not appear to be sufficient time to clarify your intentions and present our concerns.

2175 Cherry Avenue ♦ Signal Hill, CA 90806 ♦ (562) 989-7302 ♦ (562) 989-7393 Fax

We will be requesting clarification and presenting our concerns in the following areas. We need your direction on which sections of your agenda you wish us to speak under. We have a number of major questions with the proposed NPDES Permit at this time, but will likely have more once we have had sufficient time to review the draft. Our major items of concern at this time are as follows:

Maximum Extent Practicable Standard
Shifting of Inspection and Enforcement Responsibilities/ Fiscal Impact of the shift on Cities
Unfunded Mandates –
Cost-Benefit Analysis of New Regulations
Unrealistic Permit Implementation Schedules
Improper Expansion of the SUSMP and Development Programs
Lack of Administrative Appeal and "Meet & Confer" Process
TMDL Implementation Concerns
Lack of a Regional Approach
Lack of Authority Issues and/or Exceeding the Board's Legal Authority

We very much appreciate the opportunity to provide our comments to Board staff, and sincerely want to work with you to make the public comment period at the workshop both efficient and productive. We look forward to hearing from you with respect to these issues. Please do not hesitate to contact me if you need additional information or have any questions. I can be reached at 562-989-7302. Thank you for your attention to these important matters.

Sincerely,

Kenneth C. Farfsing
City Manager
Signal Hill

cc: CPR Steering Committee
CPR Members

AGENDA
WATER POLICY TASK FORCE
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

April 17, 2001
10:00 a.m.
SCAG Offices: Riverside B Meeting Room

Page #

1.0 CALL TO ORDER

2.0 PUBLIC COMMENT PERIOD

Members of the public desiring to speak on an agenda item must notify the Secretary prior to the public comment period. Comments will be limited to three minutes.

3.0 APPROVAL OF MINUTES

Approve the minutes of the February 20, 2001 meeting. (Minutes will be distributed at the time of this meeting.)

4.0 PRESENTATION ITEMS FOR THE TASK FORCE

4.1 Municipal Storm Water Permit for Los Angeles County and the Cities in Los Angeles County 3

The current Municipal Storm Water Permit for Los Angeles County and the Cities within the County (excepting the City of Long Beach) expires on July 30, 2001. As a part of developing a new permit, the County and Cities submitted a Report of Waste Discharge (ROWD) to the Regional Board on January 31, 2001. On March 2, 2001 the Regional Board issued its review of and comments on the ROWD. On April 12 the Board is expected to publish its first draft of the new permit. Following the publication, the Board will conduct a series of work group meetings with interested parties prior to finalizing the new permit.

The following speakers will brief the Task Force on this important water quality program:

Dr. Xavier Swamikannu, Chief, Storm Water affairs at the Regional Board

Mr. Desi Alvarez, P.E., Chair of the Executive Advisory Committee for Los Angeles County and Director of Public Works for the City of Downey

Mr. Mustafa Ariki, C.E., Head of the County's NPDES Section related to Storm Water programs

Mr. Ken Farfsing, City Manager of Signal Hill

Ms. Heather Lea Merenda, Storm Water Manager of the City of Calabassas

4.2 Legislative Update

Staff will review pending water-related state and federal legislation. (This Item has no attached memo.)

5.0 CHAIR'S REPORT

6.0 STAFF REPORT

7.0 TASK FORCE INFORMATION SHARING

8.0 COMMENT PERIOD

Any Task Force member, staff and members of the public desiring to comment on items not covered on the Agenda, within the Task Force's jurisdiction may do so at this time. Comments should be limited to three minutes.

9.0 ADJOURNMENT

SOUTHERN CALIFORNIA

ASSOCIATION of GOVERNMENTS

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www.scag.ca.gov

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MEETING

of the

WATER POLICY TASK FORCE

April 17, 2001
10:00 A.M.

Held at the

SCAG OFFICES
Conference Room - Riverside B
818 West 7th Street, 12th Floor
LOS ANGELES, CA 90017
(213) 236-1800

MAP & AGENDA ENCLOSED

If Task Force members and/or members of the public have any questions on any agenda items, please contact Dan Griset at (213) 236-1895 or Nancy Pfeffer at (213) 236-1869.

AGENDA
WATER POLICY TASK FORCE
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

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MEMO

To: *Members of the Water Policy Task Force*

From: *Daniel E. Griset, Sr. Planner, X895, griset@scag.ca.gov*

Date: *April 6, 2001*

Subject: *Municipal Storm Water Permit for Los Angeles County and the Cities of Los Angeles County*

RECOMMENDED ACTION: Receive comments for policy recommendations to the Energy and Environment Committee.

SUMMARY:

The current Municipal Storm Water Permit for Los Angeles County and the Cities within the County (excepting the City of Long Beach) expires on July 30, 2001. As a part of developing a new permit, the County and Cities submitted a Report of Waste Discharge (ROWD) to the Regional Board on January 31, 2001. On March 2, 2001 the Regional Board issued its review of and comments on the ROWD. On April 12 the Board is expected to publish its first draft of the new permit. Following the publication, the Board will conduct a series of work group meetings with interested parties prior to finalizing the new permit.

BACKGROUND:

Early last year the Task Force considered a controversial modification made by the Regional Board to the current municipal storm water permit (often referred to as the MS4 permit). That modification was the Standard Urban Storm Water Management Plan (SUSMP) requiring new development and redevelopment sites to capture, treat and manage storm water runoff. This modification formed the first part of what now is the renewal process in the MS4 permit in Los Angeles County. The current process has lead to the imminent publication of the first draft of the new permit.

In its response to the ROWD, the Board's Executive Officer indicated that the Board intends to "look at the sample MS4 permit submitted by the Permittees for useful content, but it will not form the basis for developing permit requirements". (Attached to the agenda are copies of the ROWD and the Board's review and response to the ROWD.)

This stance suggests that local government will have input to the Board staff but that the staff is not willing to negotiate the terms of the new permit that will take effect after July 30, 2001.

Of the indicated concerns expressed by the Board in the ROWD response, the following issues should be given close attention by the Task Force: street sweeping frequencies, catch basin cleanings, inspection and enforcement requirements, detection and elimination of illicit connections and discharges, application of SUSMP rules to both discretionary and non-discretionary projects.

New rules that are developed for any of these aspects of the new permit will have material financial and legal implications for all local governments in Los Angeles County.

Agenda Attachments

Water Policy Task Force
April 17, 2001

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. xx-xxx
(NPDES NO. CASxxxxxx)

WASTE DISCHARGE REQUIREMENTS
FOR
MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES
WITHIN THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT,
COUNTY OF LOS ANGELES, AND THE CITIES OF LOS ANGELES COUNTY

TABLE OF CONTENTS

WASTE DISCHARGE REQUIREMENTS

FINDINGS

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter referred to as the Regional Board), finds:

Existing Permit and Report of Waste Discharge

1. The Los Angeles County Flood Control District, Los Angeles County, and 83 incorporated cities within the Los Angeles County Flood Control District (see Attachment A, List of Permittees), hereinafter referred to separately as Permittees and jointly as the Discharger, discharge or contribute to discharges of stormwater and urban runoff from municipal separate storm sewer systems (MS4s), also called storm drain systems, and water courses within the Los Angeles County Flood Control District into receiving waters of the Los Angeles Basin under countywide waste discharge requirements contained in Order No. 96-054 adopted by this Regional Board on July 15, 1996. That Order also serves as a National Pollutant Discharge Elimination System (NPDES) permit (CAS614001).

2. On February 1, 2001, the Discharger submitted a Report of Waste Discharge (ROWD) as an application for re-issuance of waste discharge requirements and an NPDES permit.

Nature of Discharges and Sources of Pollutants

3. Stormwater discharges consist of surface runoff generated from various land uses in all the hydrologic drainage basins that discharge into water bodies of the State. The quality of these discharges varies considerably and is affected by the hydrology, geology, land use, season, and sequence and duration of hydrologic events. The primary constituents of concern currently identified by the Los Angeles County Flood Control District 1994-2000 Integrated Receiving Water Impacts Report are cyanide, indicator bacteria, total dissolved solids, turbidity, total suspended solids, nutrients, total aluminum, dissolved cadmium, copper, lead, total mercury, nickel, zinc, bis(2-ethylhexyl)phthalate, polycyclic aromatic hydrocarbons (PAHs), Diazinon, and chlorpyrifos.

4. Certain pollutants present in stormwater and/or urban runoff may be contributed by activities which the Permittees cannot control. Examples of such pollutants and their respective sources are: PAHs which are products of internal combustion engine operation, nitrates from atmospheric deposition, heavy metals, lead from fuels, copper from brake pad wear, zinc from tire wear, dioxins as products of combustion, and bis (2-ethylhexyl) phthalate and mercury as resulting from atmospheric deposition, and natural-occurring minerals from local geology. However, Permittees can implement measures to attempt to reduce entry of these pollutants into stormwater.

5. These compounds can have damaging effects on both human health and aquatic ecosystems. In addition, the high volumes of stormwater discharged from MS4s in areas of urbanization can significantly impact aquatic ecosystems due to physical modifications such as bank erosion and widening of channels. It is anticipated that, due to the nature of stormwater events (i.e., large volumes of water and high velocities) that there will be short-

term, reversible impacts to beneficial uses that are not directly related to water quality.

6. Water quality assessments conducted by the Regional Board identified impairment, or threatened impairment, of beneficial uses of water bodies in the Los Angeles County Flood Control District Watersheds. These impairments include many of the pollutants of concern identified by the Los Angeles County Flood Control District 1994-2000 Integrated Receiving Water Impacts Report.

Permit Background

7. The Discharger has filed a Report of Waste Discharge (ROWD) and has applied for renewal of its waste discharge requirements and an NPDES permit to discharge wastes to surface waters. The ROWD includes the Watershed Management Area Plans (WMAPs), proposed permit and Performance Standards (PS).

8. The Stormwater Quality Management Plan (SQMP) refers to the five Model Programs collectively developed by the Permittees in accordance with provisions of the NPDES Permit Order Number 96-054. The SQMP will be included in the WMAPs. The Model Programs are the following:

Public Information and Participation
Development Construction
Illicit Connection/Illicit Discharge Elimination Program
Development Planning
Public Agency Activities

The monitoring program herein consists of land-use based monitoring combined with receiving water monitoring and modeling.

9. The Regional Board has reviewed the ROWD and has determined it to be complete under the reapplication policy of MS4s issued by the USEPA in July 1996. The Regional Board finds that the Permittee's proposed Storm Water Management Plan is acceptable and when fully implemented will be consistent with the statutory standard of Maximum Extent Practicable (MEP) and in compliance with the Federal Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act.

Coverage

10. The requirements in this Order cover all areas within the boundaries of the cities (see Attachment A) as well as unincorporated areas in Los Angeles County Flood Control District within the jurisdiction of the Regional Board. The Permittees serve a population of about 11.4 million [Reference: *2000 Census of Population and Housing,* Bureau of the Census, U.S. Department of Commerce (1992)] in an area of approximately 3,100 square miles. Attachment B shows the map of the permitted area in Los Angeles County Flood Control District. The Regional Board will coordinate to implement programs that are consistent with the requirements of this Order.

11. Federal, state, regional or local entities within the Permittees' boundaries or in jurisdictions outside the Los Angeles County Flood Control District, and not currently named in this Order, may operate storm drain facilities and/or discharge stormwater to storm drains and watercourses covered by this Order. The Permittees may lack legal jurisdiction over these entities under state and federal constitutions. Consequently, the Regional Board recognizes that the Permittees will not be held responsible for such facilities and/or discharges. The Regional Board will coordinate with these facilities to implement programs that are consistent with the requirements of this Order.

12. Sources of discharges into receiving waters in the Los Angeles County Flood Control District but in jurisdictions outside its boundary include the following:

    a. About 34 square miles of unincorporated area in Ventura County drain into Malibu Creek, thence to Santa Monica Bay,

    b. About 9 square miles of the City of Thousand Oaks also drain into Malibu Creek, thence to Santa Monica Bay, and

    c. About 86 square miles of area in Orange County drain into Coyote Creek, thence into the San Gabriel River Watershed in the Los Angeles County Flood Control District.

    The Regional Board will ensure that stormwater management programs for the areas in Ventura County and the City of Thousand Oaks that drain into Santa Monica Bay are consistent with the requirements of this Order. The Regional Board will coordinate with the Santa Ana Regional Board so that stormwater management programs for the areas in Orange County that drain into Coyote Creek are consistent with the requirements of this Order.

13. This permit is intended to develop, achieve, and implement a timely, comprehensive, cost-effective stormwater pollution control program to minimize pollutants, to the maximum extent practicable, in stormwater discharges from the permitted areas in Los Angeles County Flood Control District to the waters of the United States.

Federal, State, and Regional Regulations

14. The Water Quality Act of 1987 added Section 402(p) to the Federal Clean Water Act (CWA). This section requires the U.S. Environmental Protection Agency (EPA) to establish regulations setting forth NPDES requirements for stormwater discharges. The first phase of these requirements was directed at municipal separate storm sewer systems (MS4) serving a population of 100,000 or more and stormwater discharges associated with industrial activities, including construction activities. On November 16, 1990, EPA published these final regulations in the Federal Register under Part 122 Code of Federal Regulations. The second phase of these requirements covers other dischargers, including municipalities with a population of less than 100,000, for which the U.S. EPA Administrator or the State determines that the stormwater discharge contributes to a violation of a water quality

standard, or is a significant contributor of pollutants to waters of the United States. U.S. EPA published the final regulations on the second phase on December 8, 1999 in the Federal Register.

15. The CWA allows the EPA to delegate its NPDES permitting authority to states with an approved environmental regulatory program. The State of California is a delegated State. The Porter-Cologne Water Quality Control Act (California Water Code) authorized the State Water Resources Control Board (State Board), through the Regional Boards, to regulate and control the discharge of pollutants into waters of the State and tributaries thereto.

16. Section 6217(g) of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) requires coastal states with approved coastal zone management programs to address non-point pollution impacting or threatening coastal water quality. CZARA addresses five sources of non-point pollution: agriculture, silviculture, urban, marinas, and hydromodification. This NPDES permit addresses the management measures required for the urban category, with the exception of septic systems. The Regional Board addresses septic systems through the administration of other programs.

17. The State Water Resources Control Board adopted a revised Water Quality Control Plan for Ocean Waters of California (Ocean Plan) on July 23, 1997. The Ocean Plan contains water quality objectives for the coastal waters of California.

18. The Regional Board adopted an updated Water Quality Control Plan (Basin Plan) for the Los Angeles Region on June 13, 1994, *'Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*, (1994).' The Basin Plan, which is incorporated in this Order by reference, specifies the beneficial uses of receiving waters and contains both narrative and numerical water quality objectives for the receiving waters in the Los Angeles County Flood Control District.

19. The Regional Board has implemented a Watershed Management Approach to address water quality protection in the region. The objective of the Watershed Management Approach is to provide a comprehensive and integrated strategy towards water resource protection, enhancement, and restoration while balancing economic and environmental impacts within a hydrologically defined drainage basin or watershed. It emphasizes cooperative relationships between regulatory agencies, the regulated community, environmental groups, and other stakeholders in the watershed to achieve the greatest environmental improvements with available resources.

20. To implement the Watershed Management Approach, as well as facilitate compliance with this Order, the Los Angeles County Flood Control District is divided into five Watershed Management Areas (WMAs) as follows:

    a. Malibu Creek and Rural Santa Monica Bay WMA
    b. Ballona Creek and Urban Santa Monica Bay WMA
    c. Los Angeles River WMA
    d. San Gabriel River WMA

e. Dominguez Channel/Los Angeles Harbor WMA

To further facilitate compliance with this Order, permittees may form sub-watershed groups within the WMA.

Attachment A, shows the list of Permittees under each WMA.

21. To facilitate compliance with federal regulation, the State Water Resources Control Board (State Board) has issued two statewide general NPDES permits: one for stormwater from industrial sites [NPDES No. CAS000001, General Industrial Activity Stormwater Permit (GIASP)] and the other for stormwater from construction sites [NPDES No. CAS000002, General Construction Activity Stormwater Permit (GCASP)]. The GCASP was reissued on August 19, 1999. The GIASP was reissued on April 17, 1997. Facilities discharging stormwater associated with industrial activities and construction projects with a disturbed area of five acres or more are required to obtain individual NPDES permits for stormwater discharges, or be covered by these statewide general permits by completing and filing a Notice of Intent (NOI) with the State Board. The USEPA guidance anticipates coordination of the state-administered programs for industrial and construction activities with the local agency program to reduce pollutants in stormwater discharges to the MS4.

22. The State Board, on October 28, 1968, adopted Resolution No. 68-16, "Maintaining High Quality Water" which established an anti-degradation policy for State and Regional Boards.

23. The State Board, on June 17, 1999, adopted Order No. WQ 99-05, which specifies standard receiving water limitations language to be included in all municipal stormwater permits issued by the State and Regional Boards.

24. California Water Code (CWC) Section 13263(a) requires that waste discharge requirements issued by the Regional Board shall implement any relevant water quality control plans that have been adopted; shall take into consideration the beneficial uses to be protected and the water quality objectives reasonably required for that purpose; other waste discharges; and, the need to prevent nuisance.

25. California Water Code Section 13370 *et seq.* requires that waste discharge requirements issued by the Regional Boards comply with provisions of the Federal Clean Water Act and its amendments.

Other Findings

26. The Regional Board is the enforcing authority in the Los Angeles region for the two statewide general permits, described in Finding 21, which regulate discharges from industrial facilities and construction sites, and all NPDES storm water and non-storm water permits issued by the Regional Board. These industrial and construction sites are also regulated under local laws and regulations.

27. Studies indicate that facilities with paved surfaces subject to frequent motor vehicular traffic

(such as parking lots and retail gasoline stations), or facilities which perform vehicle repair, maintenance, or fueling (such as retail gasoline outlets with service bays) are potential sources of pollutants of concern in storm water. [References: Pitt *et al.*, *Urban Storm Water Toxic Pollutants: Assessment, Sources, and Treatability*, Water Environment Res., 67, 260 (1995); *Results of Retail Gas Outlet and Commercial Parking Lot Storm Water Runoff Study*, Western States Petroleum Association and American Petroleum Institute, (1994); Action Plan Demonstration Project, Demonstration of Gasoline Fueling Station Best Management Practices, Final Report, County of Sacramento (1993).]

28. A review of industrial waste/pretreatment records in Los Angeles County Flood Control District on illicit discharges indicate that automotive service facilities and food service facilities sometimes discharge polluted washwaters to the MS4. The pollutants of concern in such washwaters include food waste, oil and grease, and toxic chemicals. Other storm water/industrial waste programs in California have reported similar observations.

29. The objective of this Order is to protect the beneficial uses of receiving waters in Los Angeles County Flood Control District. To meet this objective, this Order requires implementation of BMPs intended to reduce pollutants in storm water and urban runoff such that ultimately their discharge will neither cause violations of water quality objectives nor create conditions of nuisance in receiving waters.

30. The Regional Board recognizes the challenges unique to regulating storm water discharges through municipal storm sewer systems, including intermittent and variable nature of discharges, difficulties in monitoring, and limited physical control over the discharge, and that it will require adequate time to implement and evaluate the effectiveness of best management practices required in this Order and to determine whether they will adequately protect the receiving water.

31. The SQMP required in this Order builds upon the foundation established in Order No. 90-079, consists of the components recommended in the USEPA guidance manual, and was developed with the cooperation of representatives from the regulated community and environmental groups. The SQMP includes provisions that promote customized initiatives, both on a countywide and watershed basis, in developing and implementing cost-effective measures to minimize discharge of pollutants to the receiving water. The various components of the SQMP, taken as a whole rather than individually, are expected to reduce pollutants in storm water and urban runoff to the maximum extent practicable.

32. The main focus of the SQMP is pollution prevention through education, public outreach, planning, and implementation of BMPs. Successful implementation of the provisions of the SQMP will require cooperation and coordination of all public agencies in each Permittee's organization, among Permittees, and the regulated community. To minimize cost, the Permittees are encouraged to utilize their existing organizational framework to implement the various activities required in this Order.

33. This Order provides the flexibility for the Permittees to petition the Regional Board Executive Officer to substitute a BMP or requirement under the SQMP with an alternative BMP, if they

can provide information and documentation on the effectiveness of the alternative, equal to or greater than the prescribed BMP in meeting the objectives of this Order.

34. This order contemplates that the Permittees are responsible for considering potential stormwater impacts when making planning decisions. However, neither this order nor any of its requirements are intended to restrict or control local land use decision-making authority.

Public Process

35. The Regional Board has notified the Discharger and interested agencies and persons of its intent to issue waste discharge requirements for this discharge, and has provided them with an opportunity to submit their written view and recommendations.

36. The Regional Board, in a public hearing, heard and considered all comments pertaining to the discharge and to the tentative requirements.

37. This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) Permit, pursuant to Section 402 of the Federal Clean Water Act, or amendments thereto, and shall take effect 50 days from permit adoption provided the Regional Administrator of the EPA has no objections.

38. This Order may be modified or alternatively revoked or reissued prior to its expiration date, in accordance with the procedural requirements of the federal NPDES program, and the California Water Code for the issuance of waste discharge requirements.

IT IS HEREBY ORDERED that the Los Angeles County Flood Control District, Los Angeles County, and the Cities of Agoura Hills, Alhambra, Arcadia, Artesia, Azusa, Baldwin Park, Bell, Bellflower, Bell Gardens, Beverly Hills, Bradbury, Burbank, Calabasas, Carson, Cerritos, Claremont, Commerce, Compton, Covina, Cudahy, Culver City, Diamond Bar, Downey, Duarte, El Monte, El Segundo, Gardena, Glendale, Glendora, Hawaiian Gardens, Hawthorne, Hermosa Beach, Hidden Hills, Huntington Park, Industry, Inglewood, Irwindale, La Cañada Flintridge, La Habra Heights, Lakewood, La Mirada, La Puente, La Verne, Lawndale, Lomita, Los Angeles, Lynwood, Malibu, Manhattan Beach, Maywood, Monrovia, Montebello, Monterey Park, Norwalk, Palos Verdes Estates, Paramount, Pasadena, Pico Rivera, Pomona, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Rosemead, San Dimas, San Fernando, San Gabriel, San Marino, Santa Fe Springs, Santa Monica, Sierra Madre, Signal Hill, South El Monte, South Gate, South Pasadena, Temple City, Torrance, Vernon, Walnut, West Covina, West Hollywood, Westlake Village, and Whittier, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act, as amended, and regulations and guidelines adopted thereunder, shall comply with the following:

PART 1. DISCHARGE PROHIBITION

A. Each Permittee shall, within its jurisdiction, effectively prohibit non-stormwater discharges into the MS4 (storm drain systems) and watercourses, except where such discharges:

1. Are covered by a separate individual or general NPDES permit, or granted an exemption by the Regional Board, the Executive Officer, or the State Water Resources Control Board; or

2. Meet one of the conditions below:

   a. Not identified as a significant source of pollutants:

      1. Flows from riparian habitats or wetlands;
      2. Diverted stream flows;
      3. Natural springs;
      4. Rising ground waters;
      5. Uncontaminated ground water infiltration [as defined at 40 CFR 35.2005(20)];
      6. Discharges or flows from emergency fire fighting activities; or

   b. Not identified as a significant source of pollutants, subject to conditions:

      7. Landscape irrigation;
      8. Drinking water line flushing;
      9. Discharges from potable water sources;
      10. Foundation drains;

11. Grading drains;
12. Footing drains;
13. Emergency floor drain;
14. Non-profit car washing;
15. Street washing;
16. Wash water runoff from the cleaning of fire fighting vehicles;
17. Air conditioning condensate;
18. Water from crawl space pumps;
19. Reclaimed and potable irrigation water;
20. Dechlorinated swimming pool discharges;
21. Individual residential car washing;
22. Sidewalk washing;
23. Lake dewatering;
24. Wash water runoff of blood and other human tissues from the cleaning of accident sites or accidental spills.

If any of the above categories of non-stormwater discharges (Part I, A.2.b) are determined to be a significant source of pollutants by the Regional Board Executive Officer, the discharge need not be prohibited if the Permittee implements appropriate BMPs to ensure that the discharge will not be a significant source of pollutants.

The Permittee(s) may, for any of the above non-stormwater categories, require BMPs deemed necessary to ensure that the discharge will not be a significant source of pollutants.

c. The Regional Board Executive Officer may authorize the discharge of additional categories of non-stormwater upon presentation of evidence in accordance with Part 1.A.4., and may include other categories of non-stormwater discharges under this subsection.

3. Discharges originating from federal, state, or other facilities which the Discharger is pre-empted by law from regulating, or for which the Discharger has no authority to enforce the requirements of this Order.

4. A Permittee may identify and describe additional categories of non-storm water discharges to be considered by the Executive Officer for exemption from the Discharge Prohibitions. The criteria to be considered for a request for exemption include one or more of the following:

   a. Documentation that the discharge is not a significant source of pollutants to receiving waters or does not cause impairment of beneficial uses of receiving waters;

b. Special circumstances that have been defined in which the discharge has been found not to be a significant sources of pollutants to, or does not cause impairment of beneficial uses of receiving waters;

c. Specific BMPs, where determined feasible, that have been identified to reduce pollutants in the discharge to the maximum extent practicable and minimize adverse impacts of such source, with an implementation schedule; or

d. Established procedures to ensure BMP implementation, including an implementation schedule, performance standards, monitoring and record keeping.

The exemption request for additional non-storm water discharges may be submitted to the Executive Officer, beginning with the first Annual Report. The exemption becomes effective upon approval by the Executive Officer.

If a presentation is made in writing with supporting documentation by a Permittee to the Executive Officer, and if the Executive Officer does not respond in writing within 60 days, then addition to the categorical exempt discharge may be considered approved.

Compliance with this Order through timely development and implementation of programs described herein shall constitute compliance with this prohibition.

PART 2. RECEIVING WATER LIMITATIONS

A. Discharges from the MS4 that scientific studies have demonstrated will cause or contribute to the exceedance of water quality objectives are prohibited.

B. Discharges from the MS4 of stormwater, or non-stormwater, for which a Discharger is responsible, shall not cause nuisance, continuing or recurring impairment of beneficial uses, or exceedances of water quality objectives in the receiving waters.

C. The Discharger shall comply with Parts A and B of this section through timely implementation of control measures and other actions to reduce pollutants to the maximum extent possible in the discharges in accordance with the SQMP and other requirements of this permit, including any modifications. The SQMP shall be designed to achieve compliance with receiving water limitations. If exceedance(s) of applicable water quality objectives persist, notwithstanding implementation of the SQMP and other requirements of this permit, the Permittee(s) shall assure compliance with discharge prohibitions and receiving water limitations by complying with the following procedure:

1. Upon a determination by either the Permittee(s) or the Regional Board, that discharges are causing or contributing to an exceedance of an applicable water quality objectives, the Permittee(s) shall promptly notify and thereafter submit a report to the Regional Board that describes BMPs that are currently being implemented, and additional BMPs that will be implemented, to prevent or reduce any pollutants that are causing or contributing to the exceedances of water quality objectives. This report may be included with the Annual Stormwater Report and Assessment, unless the Regional Board directs an earlier submittal. The report shall include a reasonable implementation schedule of necessary additional BMPs. The Regional Board may require modifications to the report within 30 days, in consultation with the Discharger.

2. Submit any modifications to the report required by the Regional Board within 90 days of notification.

3. Within 90 days following the approval of the report, the Permittee(s) shall revise the SQMP and monitoring program to incorporate the approved, modified suite of BMPs, implementation schedule, and any additional monitoring required.

4. Implement the revised SQMP and monitoring program according to the approved schedule.

D. So long as the Permittee(s) complies with the procedures set forth in Part C above and is implementing the revised SQMP, the Permittee(s) does not have to repeat the procedure for continuing or recurring exceedances of the same water quality standard(s) unless directed by the Regional Board to develop additional BMPs.

E. Timely and complete implementation by a Permittee(s) of the stormwater management programs prescribed in this Order shall satisfy the requirements of this section and constitute compliance with receiving water limitations.

PART 3. STORMWATER QUALITY MANAGEMENT PLAN IMPLEMENTATION, MONITORING, AND REPORTING

A. Responsibilities of the Principal Permittee

The Principal Permittee will coordinate and facilitate activities necessary to comply with the requirements of this Order, but is not responsible for ensuring compliance of any individual Permittee. The Los Angeles County Flood Control District is hereby designated as the Principal Permittee, and as such shall:

1. Coordinate permit activities among Permittees and negotiate NPDES requirements with the Regional Board.

All Permittees will be given the opportunity to have an active role in and provide input for the negotiation of permit requirements. However, formal negotiation with the Regional Board will be conducted by the Principal Permittee and the watershed Executive Advisory Committee (EAC) representative(s).

2. Provide personnel and fiscal resources for the necessary update of the WMAPs and their components;

3. Convene the Watershed Management Committees (WMCs) constituted pursuant to Part C, below, upon designation of representatives;

4. Provide technical and administrative support for committees that will be organized to implement the SQMP and WMAPs;

5. Implement the Countywide Monitoring Program required in this Order;

6. Provide personnel and fiscal resources for the preparation and submittal to the Regional Board of annual reports and summaries of other reports required under the SQMP; and

7. Comply with the "Responsibilities of the Permittees" in Part B, below;

B. Responsibilities of the Permittees

Each Permittee is only responsible for the implementation of the appropriate stormwater management program developed pursuant to the requirements of this Order, and not for the implementation of the provisions applicable to the Principal Permittee or other Permittees. A Permittee is required to comply only with the requirements of this Order applicable to discharges which originate from places within its boundaries over which it has authority to enforce the requirements of this Order. Each Permittee shall, within its geographic jurisdiction:

1. Comply with the requirements of the SQMP and its amendments;

2. Coordinate among its internal departments and agencies, as appropriate, to facilitate the implementation of the requirements of the SQMP applicable to such Permittee in an efficient and cost-effective manner;

3. Participate in the update, if necessary, of the WMAPs;

4. Appoint a technically knowledgeable representative to the appropriate WMC;

5. Implement the SQMP upon approval by the Executive Officer; and,

6. Work with other agencies, to the extent necessary, and submit a report to the Executive Officer on recommendations to resolve any conflicts identified between the provisions of the SQMP and WMAPs and the requirements of other regulatory agencies, if the Permitee considers it necessary.

C. Watershed Management Committees (WMCs)

1. Each WMC shall be comprised of a voting representative from each Permittee in the Watershed Management Area (WMA).

2. The WMC's chair and secretary shall be chosen by the WMC upon permit adoption and on an annual basis, thereafter. In the absence of volunteer Permittee(s) for the positions, the Principal Permittee shall assume those roles until the WMC chooses members of the committee for the positions.

3. Each WMC shall:

a. Facilitate cooperation and exchange of information among Permittees;

b. Establish goals and objectives for the WMA;

c. Prioritize pollution control efforts based on beneficial use impairment;

d. Develop and/or update, on an annual basis, priority project list for the WMA;

e. Assess the effectiveness of, prepare revisions for, and recommend appropriate changes to the WMAP including the SQMP;

f. Conduct joint WMC meetings at least four times per year and as necessary.

g. Identify, as part of the Industrial/Commercial Source Identification program, additional SIC industrial/commercial groups selected as priority to be included in the database described in the SQMP. The following criteria shall be considered in the identification process:

i. Extent of exposure of the industrial/commerical activity to stormwater;

ii. Types and quality of non-stormwater discharges;

iii. Similarity of industrial/commercial activity to industrial activity regulated under the USEPA Phase I facilities;

iv. Types of chemicals and wastes generated that can contaminate stormwater;

v. Existence of duplicate regulatory programs with other agencies that emphasize waste management and minimize exposure of the industrial/commercial activity to stormwater;

vi. Number of facilities in the WMA;

vii. Professional understanding of the industrial/commercial sector's waste management practices;

viii. Experience of local agency industrial waste inspection programs; and

ix. Any other information that indicates a significant potential for contamination of stormwater.

D. Executive Advisory Committee (EAC)

1. The EAC shall be attended by one representative from Malibu Creek and by two representatives from each of the other watersheds, along with representatives from the City of Los Angeles, and the Los Angeles County Flood Control District.

2. The Committee shall facilitate program compliance in each watershed and enhance consistency among permittees.

E. General Requirements

1. The Permittees shall, at a minimum implement the elements of the SQMP that are consistent with the terms of this permit.

   Additionally, modifications to the SQMP made during the term of the permit including those made in accordance with Part 3.B. of this permit shall be implemented.

2. The SQMP shall, at a minimum, comply with applicable requirements of 40 CFR 122.26(d)(2). The SQMP shall be implemented so as to reduce the discharges of pollutants in stormwater to the maximum extent practicable.

3. Each Permittee shall be responsible for implementation of the relevant portions of the SQMP within its jurisdiction. The Principal Permittee shall be responsible for program coordination as described in Part 3.A, as well as,

compliance with the relevant portions of the permit within its jurisdiction.

F. WMAP Modifications

The initial SQMP, as delineated in the WMAPs may need to be modified, revised, or amended periodically to respond to changed conditions and to incorporate more effective approaches to pollutant controls. Minor changes may be made at the direction of the Executive Officer. Minor changes requested by the Permittees shall become effective upon written approval of the Executive Officer. If proposed changes involve a major revision in the overall scope of the program, such changes must be approved by the Regional Board as amendments to this Order.

Modifications to the WMAP may be made in the following manners:

1. The Regional Board Executive Officer may approve changes to the WMAPs:

   a. Upon petition by the Permittee(s) or interested parties, and after providing for, and considering public comments;

   b. Upon a Permittee petition to the Executive Officer to:

      i. Substitute any Best Management Practice (BMP) or Program identified in the SQMP, if the Permittee can document that:

         (a) The proposed alternative BMP or program will meet or exceed the objective of the original BMP or program in the reduction of stormwater pollutants; or

         (b) The fiscal burden of the original BMP or program is substantially greater than the proposed alternative and does not achieve a substantially greater improvement in stormwater quality; and,

         (c) The proposed alternative BMP or program will be implemented within a similar period of time.

      ii. Eliminate any BMP or program identified in the SQMP, if the Permittee can document that:

         (a) The BMP or program is not technically feasible and no substitute is available; or

         (b) The cost of implementation outweighs the pollution control benefits; or

         (c) The BMP or program is not applicable in the

Permittee's jurisdiction.

The Executive Officer may approve or disapprove the petition in accordance with Part 6 D; or,

2. The Permittee(s) shall modify the WMAPs at the direction of the Regional Board Executive Officer, to incorporate applicable regional provisions approved by the Regional Board Executive Officer in plans for watersheds shared by the Permittee(s) with other MS4 programs.

G. Upon Administrative Review

The administrative review process formalizes the procedure for review and acceptance of reports and documents submitted to the Regional Board under this Order. In addition, it provides a method to resolve any differences in compliance expectations between the Regional Board and Permittees, prior to initiating enforcement action.

1. Stormwater program documents, including progress reports, guidelines, checklists, BMPs, databases, program summaries, and implementation and compliance schedules, developed by the Principal Permittee or a Permittee under the provisions of this Order, shall be submitted to the Executive Officer of the Regional Board, where required for approval. The process is as follows:

   a. For documents that require Executive Officer's approval, the Executive Officer will notify the Principal Permittee and/or Permittee of the results of the review and approval or disapproval within 120 days. If the Executive Officer has not responded within 120 days following submittal, the Permittee shall notify the Regional Board of its intent to implement the program components as submitted. If after 10 days the Executive Officer has not responded, the Permittee will implement the submitted program and the Executive Officer may not make modifications; and,

   b. Documents that require formal Regional Board approval will undergo public review and comment before Board consideration at a public meeting.

2. If the Executive Officer determines that a Permittee's stormwater program is insufficient to meet the provisions of this Order, the Executive Officer shall send a "Notice of Intent to Meet and Confer (NIMC)" to the Permittee, with specific information in support of the determination. The NIMC shall include a timeframe by which the Permittee must meet with Regional Board staff. The processes are as follows:

a. The Permittee, upon receipt of an NIMC, shall meet and confer with Regional Board staff to demonstrate that the Permittee's program is sufficient to meet the requirements of this Order; and, if not, seek clarification on the steps to be taken to completely meet the provisions of this Order. The meet and confer period will conclude with either a written notice of program sufficiency from the Excutive Officer to the Permittee, or the submittal to and acceptance by the Executive Officer of a written "Stormwater Program Compliance Amendment (SPCA)", prepared by the Permittee, which shall include implementation deadlines. The Executive Officer may terminate the meet and confer period after a reasonable period due to a lack of progress on issues and may order submittal of the SPCA by a specified date. Failure to submit an acceptable SPCA by the specified date shall constitute a violation of this Order;

b. The Executive Officer will approve or reject the submitted SPCA or an amended SPCA within 120 days. Rejection of an SPCA by the Executive Officer shall state the reasons for the failure to approve the SPCA. A Permittee that receives a rejection of an SPCA shall have 120 days to remedy the specified deficiency and resubmit the SPCA. If the Executive Officer has not responded within 120 days following submittal of an SPCA, the Permittee shall notify the Executive Officer in writing following the notification of its intent to implement the SPCA as submitted. If after 10 days the Executive Officer has not responded, the Permittee will implement the submitted SPCA and the Executive Officer may not make modifications;

c. The Permittee shall comply with the terms of the SPCA. The Permittee shall submit reports to the Executive Officer on the progress made under the SPCA. The frequency of the progress report submittal shall be quarterly unless otherwise prescribed by the Executive Officer. Failure to comply with the terms and conditions of the SPCA shall constitute a violation of this Order and shall be a cause for enforcement action by the Regional Board; and,

d. The Executive Officer shall not take enforcement action against a Permittee until the Executive Officer has notified the Permittee in writing that the Administrative Review Process has been exhausted and that the Executive Officer has determined that a violation exists and it warrants enforcement.

H. Legal Authority

1. Permittees shall possess the necessary legal authority to prohibit non-stormwater discharges, to the maximum extent practicable, to the storm drain system, including, but not limited to:

a. A prohibition on illicit discharges and illicit connections and a requirement for removal of illicit connections;

i. Prohibit the discharge of wash waters to the MS4 when gas stations, auto repair garages, or other types of automotive service facilities are cleaned;

ii. Prohibit the discharge of runoff to the MS4 from mobile auto washing, steam cleaning, mobile carpet cleaning, and other such mobile commercial and industrial operations;

iii. Prohibit the discharge of runoff to the MS4 from areas where repair of machinery and equipment which are visibly leaking oil, fluid or antifreeze, is undertaken;

iv. Prohibit the discharge of runoff to the MS4 from storage areas of materials containing grease, oil, or other hazardous substances, and uncovered receptacles containing hazardous materials, unless such containers are new and unopened with a visibly clean exterior;

v. Prohibit the discharge of chlorinated swimming pool water and filter backwash to the MS4;

vi. Prohibit the discharge of runoff from the washing of toxic materials to the MS4;

vii. Prohibit washing impervious surfaces in industrial/commercial areas that results in a discharge of runoff to the MS4; and

viii. Prohibit the discharge from washing out of concrete trucks, pumps, tools, and equipment to the MS4.

b. Control spills, dumping, or disposal of materials into the MS4, such as;

i. Litter, landscape debris and construction debris;

ii. Any state or federally banned pesticide, fungicide or herbicide;

iii. Food wastes; and

iv. Fuel and chemical wastes, animal wastes, garbage,

batteries, and other materials that have potential adverse impacts on water quality.

c. A requirement for compliance with conditions in ordinances, permits, contracts, or orders; and,

d. The ability to carry out all inspection, surveillance and monitoring procedures, within the Permitttee's legal jurisdiction, necessary to determine compliance and non-compliance with permit conditions, including the prohibition of illicit discharges to the MS4.

I. Annual Stormwater Program Report, Assessment, and Budget Summary

1. The Discharger shall submit, by October 15 of each year beginning the Year 2002, an Annual Stormwater Program Report, Assessment, and Budget Summary documenting the status of the general program and individual tasks contained in the WMAPs, in accordance with the requirements identified in the Monitoring and Reporting Program Part I.A of this order. The Annual Stormwater Program Report, Assessment, and Budget Summary shall cover the previous fiscal year from July 1 through June 30, and shall include the information necessary to assess the Discharger's compliance status relative to this Order, and the effectiveness of implementation of permit requirements on stormwater quality. The Annual Stormwater Program Report, Assessment, and Budget Summary shall include any proposed changes to the WMAPs.

2. Stormwater Management Program Budget

a. The Discharger shall prepare annually a budget summary on resources applied to the stormwater management program using the form attached (Attachment C). This budget summary shall include an annual summary identifying the stormwater budget for the following year, using estimated percentages and written explanations where necessary, for the specific categories noted below:

i. Program management
ii. Illicit connection/illicit discharge
iii. Development planning/development construction
iv. Public Agency Activities
v. Public Information and Participation
vi. Monitoring Program
vii. Other

Permittees, in addition to the budget summary, may report supplemental dedicated budgets, if any, for the same categories.

J. Stormwater Quality Monitoring Report

1. The Principal Permittee shall submit a Stormwater Quality Monitoring Report on October 15, 2002 and annually on October 15 thereafter, in accordance with the requirements identified in the Monitoring and Reporting Program Part I.B of this order. The report shall include:

   a. Status of implementation of the stormwater quality monitoring program as described in the attached Monitoring and Reporting Program;

   b. Results of the stormwater quality monitoring program; and

   c. A general interpretation of the significance of the results, to the extent that data allows.

K. Stormwater Quality Monitoring Program Modifications

1. The Regional Board Executive Officer or the Regional Board consistent with 40 CFR 122.41 may approve changes to the Los Angeles County Flood Control District Stormwater Quality Monitoring Program, after providing the opportunity for public comment, either:

   a. By petition of the Permittee or by petition of interested parties, after the submittal of the Annual Stormwater Quality Monitoring Program Report. Such petition shall be filed not later than 60 days after the Annual Monitoring Program Report submittal date; or

   b. As deemed necessary by the Regional Board Executive Officer following notice to the Permittee.

PART 4. SPECIAL PROVISIONS

Requirements of the permit shall take effect 60 days from permit adoption provided the US EPA Regional Administrator has no objections unless new permit requirements require additional resources and budgeting, wherein effective date will be 90 days after the next budget cycle.

Implementation Plans for any future watershed based requirement modifications, will be formulated and added to the SQMP at that time.

All requirements listed in the SQMP are to be applied. The following special provisions were either extracted from the SQMP or are additional requirements and are only presented hereafter for emphasis because of their importance.

A. Public Information and Participation

1. Programs for the General Public

   a. The 888-CLEAN-LA hotline will serve as the general public reporting contact for reporting clogged catch basin inlets and illicit discharges/dumping, and general stormwater management information. Each Permittee may establish its own hotline if preferred. Permittees shall include this information, updated when necessary, in public information, and the government pages of the telephone book as they are developed/published.

   b. Permittees shall mark storm drain inlets with a legible "no dumping" message. In addition, signs with language prohibiting illegal dumping must be posted at designated public access points to creeks, other relevant water bodies, and channels under Permittee's jurisdiction.

   c. Each Permittee shall conduct educational activities within its jurisdiction and participate in countywide events to the extent possible.

   d. Each Permittee shall distribute outreach materials to the general public and school children at appropriate public counters and events. Outreach material shall include information such as proper disposal of litter, green waste, and pet waste, proper vehicle maintenance techniques, proper lawn care, and water conservation practices.

2. Programs for Industrial/Commercial Businesses

   a. Permittees shall implement an industrial/commercial educational site visit program.

b. Permittees shall visit automotive service and food service facilities as outlined in the SQMP in its jurisdiction once every two years. During site visits, Permittees shall:

i. Consult with a representative of the facility to explain applicable stormwater regulations;

ii. Distribute and discuss applicable BMP and educational materials; and,

iii. Conduct a site walk-through to verify for, at a minimum, evidence of BMP implementation.

c. Permittees shall revisit automotive and food service facilities where evidence of illicit discharge is found within six months of the inspection. If necessary, Permittees will begin enforcement action to remove sources of illicit discharges.

d. Based on Pollutants of Concern source identification, additional target businesses may be identified to be included in the site visit program. Each Permittee shall visit a maximum of 125 such businesses twice during the term of this permit. Permittees shall report on the types and proposed actions to be taken in regard to the additional target businesses in annual reports.

e. Permittees shall provide an annual update of the visited automotive service, food service, and other targeted facilities to the Regional Board in the annual report. The database shall include at a minimum; facility name, site address, applicable SIC code(s), and NPDES stormwater permit coverage.

f. Permittees shall train their employees in targeted positions (whose jobs or activities directly affect stormwater quality, or those who respond to questions from the public), including inspection staff, on the requirements of the SQMP within one year from the date of the permit adoption, and annually thereafter, as necessary.

B. Programs for Development Planning

1. The Discharger shall implement the approved Standard Urban Stormwater Mitigation Plan (SUSMP) (See SQMP, Development Planning). The SUSMP addresses conditions and requirements for discretionary development and redevelopment projects. Appropriate elements of the SUSMP will be included as project requirements.

2. Permittees shall make appropriate modifications to their internal planning

procedures for preparing/reviewing CEQA documents, and for linking stormwater quality mitigation conditions to legal discretionary project approvals.

3. Permittees shall train their employees in targeted positions (whose jobs or activities are engaged in development planning) on the requirements of the SUSMP within one year from the date of the permit adoption, and annually thereafter, as necessary.

4. The Permittee shall include watershed and stormwater management considerations in the appropriate elements of the Permittee's General Plan whenever these elements are significantly rewritten. Appropriate elements include, but are not limited to, water quality protection, development goals and policies, open space goals and policies, preservation of and integration with natural features, and water conservation policies.

C. Programs for Development Construction

1. Permittees shall require the preparation, submittal, and implementation of a Local Stormwater Pollution Prevention Plan (Local SWPPP) prior to issuance of a grading permit for priority construction projects unless the project falls under the requirements of the State's General Construction Activities Permit.

2. Permittees shall prepare and implement a Local SWPPP on Permittee's construction projects, as required in Part 4.C.1.

3. The Local SWPPP shall include appropriate construction site BMPs selected from documents such as the California Stormwater BMP Handbook, the Caltrans Stormwater Quality Handbook, EPA database and American Society of Civil Engineers (ASCE) database. In addition, Permittees shall ensure the following minimum requirements are met, to the maximum extent practicable, at construction sites regardless of size:

   a. Sediments generated on the project site shall be retained using structural drainage controls;

   b. Construction-related materials, wastes, spills, or residues shall be retained on project sites;

   c. Non-stormwater runoff from equipment and vehicle washing and any other activity shall be contained at project sites;

   d. Erosion from slopes and channels will be minimized, by implementing BMPs, including, but not limited to, limiting grading scheduled during the wet season, inspecting graded areas during

rain events, planting and maintaining of vegetation on slopes, and covering slopes susceptible to erosion.

4. Local SWPPPs must include the rationale used for selecting or rejecting BMPs. The project architect, engineer of record, or authorized qualified designee, must sign a statement on the submitted Local SWPPP to the effect:

"As the architect/engineer of record, I have selected appropriate BMPs to effectively minimize the negative impacts of this project's construction activities on stormwater quality. The project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activities."

The landowner shall sign a statement to the effect:

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/or inaccurate information, failing to update the Local SWPPP to reflect correct conditions, or failing to properly and/or adequately implement the Local SWPPP may result in revocation of grading and/or other permits or other sanctions provided by law."

The Local SWPPP certification shall be signed by the landowner as follows:

i. For a corporation: by a responsible corporate officer which means (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of the construction activity if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

ii. For a partnership or sole proprietorship: by a general partner or the proprietor; or

iii. For a municipality or other public agency: by an elected official, a ranking management official (e.g., County Administrative Officer, City Manager, Director of Public

Works, District Engineer, City Engineer, District Manager), or the manager of the construction activity if authority to sign stormwater quality plans has been assigned or delegated to the manager in accordance with established agency policy.

5. Permittees shall require proof of filing a Notice of Intent for coverage under the State General Construction Activity Stormwater Permit and a State SWPPP prior to issuing a grading permit for all projects requiring coverage under the state general permit.

6. Permittees shall inspect sites with Local SWPPP and Wet Weather Erosion Control Plan (WWECP) for stormwater quality requirements during routine inspection a minimum of once during the wet season. For inspected sites that have not adequately implemented their local SWPPP, a follow-up inspection to ensure compliance will take place within 2 weeks.

7. Permittees shall discuss stormwater controls and provide stormwater control educational materials targeted to the construction community when requested by the public and/or inspectors.

8. Permittees shall train employees in targeted positions (whose jobs or activities are engaged in construction activities including construction inspection staff) on the requirements of the SQMP within one year from the date of adoption of the permit, and annually thereafter, as necessary.

D. Public Agency Activities

Corporation Yards

1. Permittees shall prohibit the discharge of untreated stormwater runoff to the storm drain system from toxic or hazardous material storage areas no later than one year from the adoption of the permit, where practicable.

2. Permittees shall prohibit the discharge of untreated stormwater runoff to the storm drain system from new fueling areas and new repair/maintenance areas for vehicle maintenance and repair facilities no later than one year from the adoption of the permit.

A public vehicle maintenance or material storage facility is a Permittee-owned or operated facility or a portion thereof that:

a. Conducts industrial activity, operates equipment, handles materials, and provides services similar to Federal Phase 1 facilities;

b. Performs fleet vehicle maintenance on ten or more vehicles per day including repair, maintenance, washing, and fueling;

c. Performs maintenance and/or repair of heavy industrial machinery/equipment; and

d. Stores chemicals, raw materials, or waste materials in quantities that require a hazardous materials business plan or a Spill Prevention, Control, and Counter-measures (SPCC) plan.

3. Permittees shall require that all vehicle/equipment wash areas must be self-contained; or equipped with a clarifier, or other pretreatment facility properly connected to a sanitary sewer. The provision does not apply to fire fighting vehicles.

Other Facilities

4. The Permittees shall perform maintenance on the MS4 as outlined in the SQMP.

5. Permittees shall conduct street sweeping on curbed public streets in their permitted area according to the following schedule:

   a. Average once every 4 weeks with a minimum of 12 times per year; and

   b. Where feasible, more frequently in areas generating significant refuse.

6. Permittees shall avoid street saw cutting and paving during storm events or if the runoff is sufficient to carry the saw cutting or paving debris (except during emergency conditions).

7. Permittees shall prohibit discharge of polluted stormwater runoff from temporary or permanent street maintenance stockpiled material and waste storage areas.

8. There shall be no application of pesticides or fertilizers during or after a rain event that results in runoff.

   Permittees shall ensure that staff applying pesticides are either certified by the California Department of Food and Agriculture, or are under the direct supervision of a certified pesticide applicator.

9. Permittees shall train their employees in targeted positions (whose jobs and activities affect stormwater quality) regarding the requirements of the SQMP within one year from the adoption of the permit, and annually thereafter, as necessary.

10. Permittees shall conduct trash collection along, or in improved open channels within their jurisdiction.

11. The Discharger shall encourage the establishment of voluntary programs for the collection of trash in natural stream channels.

E. Programs for Illicit Connections and Illicit Discharges

1. Refer to Part 1.A.2. for conditions of illicit discharges.

2. Permittees shall investigate the cause, determine the nature and estimated amount of reported illicit discharge/dumping incidents, and refer documented non-stormwater discharges/connections or dumping to an appropriate agency for investigation, containment and cleanup. If the source of the illicit discharge has been identified, appropriate action including issuance of an enforcement order that will result in cessation of the illicit discharge, and/or elimination of the illicit connection, shall take place after the Permittee gains knowledge of the discharge/connection.

3. Each Permitee shall train its employees in targeted positions, as defined by the SQMP, on how to identify and report illicit discharges within one year from the date of the permit adoption, and annually thereafter, as necessary.

4. Automotive, food facility, construction and Permittee facility site visits shall include distribution of educational material that describes illicit discharges and provides a contact number for reporting illicit discharges.

5. New information developed for Phase I industrial facility educational material shall include information describing illicit discharges. The information shall include: types of discharges prohibited, how to prevent illicit discharges, what to do in the event of an illicit discharge, and the array of enforcement action the facility may be subjected to, including penalties that can be assessed.

PART 5. DEFINITIONS

40 CFR: Title 40 of the Code of Federal Regulations, which is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government.

Adverse Impact: A detrimental effect upon water quality or beneficial uses caused by a discharge or loading of a pollutant or pollutants. See also "Impact".

Authorized Discharge: Any discharge that is authorized pursuant to an NPDES permit or meets the conditions set forth in this Order.

BMP: See Best Management Practice

Basin Plan: Refers to the Water Quality Control Plan, Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, adopted by the Regional Board on June 13, 1994 and subsequent amendments.

Beneficial Uses: Existing or potential uses of receiving waters in the permit area as designated by the Regional Board in the Basin Plan.

BAT/BCT Criteria: Treatment-based standards for reducing the discharge of pollutants, as defined in 40 CFR subchapter N, for specific categories of industrial facilities subject to stormwater effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards. Effluent limitations have been defined in 40 CFR for the reduction of toxic pollutants using Best Available Technology Economically Achievable (BAT) and for the reduction of conventional pollutants using Best Conventional Pollutant Control Technology (BCT).

Best Management Practice (BMP): Activities, practices, facilities, and/or procedures that when implemented to their maximum efficiency will prevent or reduce pollutants in discharges. Examples of BMPs may include public education and outreach, proper planning of development projects, proper clean out of catch basin inlets, and proper sludge or waste handling and disposal, among others.

Bioaccumulate: The build up of a substance in the tissues of an organism to a higher concentration than in the surrounding environment, generally as a result of the organism's ingestion and internal storage of the substance over time.

Biostimulatory: An agent, action, or condition that arouses, elicits or accelerates physiological or organic activity. For example, the introduction of excessive nutrients to an aquatic system has a biostimulatory effect which manifests itself as excessive growth of algae in the aquatic systems. As the algae decomposes, dissolved oxygen in the water column is depleted, potentially leading to excessively low dissolved oxygen levels which can lead to suffocation of aquatic life, i.e., fish kills.

CFR: See Code of Federal Regulations.

CRWQCB: The California Regional Water Quality Control Board, Los Angeles Region. See also Regional Board.

California Storm Water Best Management Practice Handbooks: The technical manuals prepared under direction of the Storm Water Quality Task Force, representing California members of the American Public Works Association (APWA). Comprising three volumes—Municipal, Industrial, and Construction—they provide guidance for selecting BMPs to reduce pollutants in storm water discharges. These manuals are currently available from Blue Print Service, 1700 Jefferson Street, Oakland, CA 94612, (510) 444-6771 or Fax (510) 444-1262.

Clean Water Act (CWA): The Federal Water Pollution Control Act enacted in 1972 by Public Law 92-500 and amended by the Water Quality Act of 1987. The Clean Water Act prohibits the discharge of pollutants to Waters of the United States unless said discharge is in accordance with an NPDES permit. The 1987 amendments include guidelines for regulating municipal, industrial, and construction stormwater discharges under the NPDES program.

Code of Federal Regulations: A codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government.

Construction Activity: Clearing, grading, or excavation that results in soil disturbance. Construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility, nor does it include emergency construction activities required to immediately protect public health and safety.

Control: To minimize, reduce or eliminate by technological, legal, contractual or other means, the discharge of pollutants from an activity or activities.

Corporation Yards: Any Permittee-owned and/or operated facility that is: used for vehicle or equipment maintenance, repair, washing, or fueling; and/or is required to prepare a hazardous materials business plan.

Dechlorinated Swimming Pool Discharges: Swimming pool discharges which have no measurable chlorine and do not contain any detergents, wastes, or additional chemicals not typically found in swimming pool water. The term swimming pool discharges does not include swimming pool filter backwash.

Discharge: Any release, spill, leak, pump, flow, escape, dumping, or disposal of any liquid, semi-solid or solid substance.

Discharger: A joint reference to the Los Angeles County Flood Control District and 83 incorporated cities within the County covered by this permit.

Disposal: Affirmative act in the placement of wastes or other materials to be thrown out or thrown away.

Disturbed Area: Area altered as a result of clearing, grading, and/or excavation of earth.

Do-it-yourselfers: Any person or persons who repair or maintain their own vehicle(s) and/or home(s).

Effectiveness: A direct or indirect measure or indicator of how well a program, plan, or best management practice achieves its intended purpose. Measures or indicators of effectiveness include, but are not limited to, detailed accounting of program accomplishments, funds expended, staff hours utilized, field surveys, amount of pollutants reduced, biosurveys, and quantitative data from water quality and sediment sampling.

Erosion: The wearing away of land surface primarily by wind or water. Erosion occurs naturally as a result of weather or runoff but can be intensified by clearing, grading, or excavation of the land surface.

Exceedance: Concentrations found above the standard in comparison.

Executive Advisory Committee (EAC): A committee composed of representatives of the Los Angeles County Flood Control District, the City of Los Angeles, and the six Watershed Management Areas.

Executive Officer: The Executive Officer of the California Regional Water Quality Control Board, Los Angeles Region, or an authorized representative.

Food Distribution Industry: Establishments primarily engaged in the warehousing and storage of perishable goods under refrigeration described by SIC 4222, and establishments primarily engaged in retail selling of food for home preparation and consumption described by SIC Major Group 54.

Food Service Industry: Establishments primarily engaged in the retail sale of prepared food and drinks for on-premise consumption or immediate consumption described by SIC 5812

GCASP: See General Construction Activity Storm Water Discharge Permit.

GIASP: See General Industrial Activity Storm Water Discharge Permit.

General Construction Activity Storm Water Discharge Permit (GCASP). The NPDES permit adopted by the State Water Resources Control Board which authorizes the discharge of stormwater under certain conditions.

General Industrial Activity Storm Water Discharge Permit (GIASP). The NPDES permit adopted by the State Water Resources Control Board which authorizes the discharge of stormwater under certain conditions.

Good Housekeeping Practice: A common practice related to the storage, use, or cleanup of materials, performed in a manner that minimizes the discharge of pollutants. Examples include purchasing only the quantity of materials to be used at a given time, use of alternative and less harmful products, cleaning up spills and leaks, and storing materials in a manner that will contain any leaks or spills.

Hazardous Material: Any material defined as hazardous by Chapter 6.95 of the California Health and Safety Code.

Hazardous Substance: Any substance designated pursuant to 40 CFR 302. This also includes unlisted hazardous substances which is a solid waste, as defined in 40 CFR 261.2, which is not excluded from regulation as a hazardous waste under 40 CFR 261.4(b), is a hazardous substance under section 101(14) of the CWA if it exhibits any of the characteristics identified in 40 CFR 261.20 through 261.24.
Examples of hazardous substances include any substance or chemical product for which one or more of the following applies:

#A material safety data sheet (MSDS) is required
#The substance is listed as radioactive by the Nuclear Regulatory Commission
#The substance is listed as hazardous by the U.S. Department of Transportation
#The material is listed in Labor Code §6382(b).

Hazardous Waste: A 'Hazardous Substance' or 'Hazardous Material' which is to be discharged, discarded, recycled, or processed.

IPM: See Integrated Pest Management.

Illicit Connection: Any human-made conveyance that is connected to the storm drain system without a permit, excluding roof-drains and other similar type connections. Examples include channels, pipelines, conduits, inlets, or outlets that are connected directly to the storm drain system.

Illicit Discharge: Any discharge to the storm drain system that is prohibited under local, state or federal statutes, ordinances, codes or regulations. This includes all non-stormwater discharges except discharges pursuant to an NPDES permit and discharges that are exempted or conditionally exempted in accordance with Section II of this Order.

Illicit Disposal: Any disposal, either intentionally or unintentionally, of material(s) or waste(s) that can pollute stormwater or urban runoff.

Impact: Any actual or potential effect caused either directly or indirectly by the discharge of pollutants.

Impervious Surface: Surface that prevents or significantly reduces the entry of water into the underlying soil, resulting in runoff from the surface in greater quantities and/or at an increased rate when compared to natural conditions prior to development. Examples of places that commonly exhibit impervious surfaces include parking lots, driveways, roadways, storage areas, and rooftops. The imperviousness of these areas commonly results from paving, compacted gravel, compacted earth, and oiled earth.

In Consultation With: The Principal Permittee and Permittees work cooperatively towards the development of programs.

Industrial Activity: The term "industrial activity" is defined in 40 CFR 122.26(b)(14) and refers to 11 categories of activities required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges associated with "industrial activity" as required by 40 CFR 122.26(c). See Phase I Facilities.

Industrial/Commercial Facility: Any facility involved and/or used in either the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services. This category of facility includes, but is not limited to, any facility defined by the Standard Industrial Classifications (SIC). Facility ownership (federal, state, municipal, private) and profit motive of the facility are not factors in this definition.

Integrated Pest Management (IPM): Pest management practice that considers the whole ecosystem when determining potential pest control strategies. IPM emphasizes use of a hierarchy of controls, with a preference for mechanical controls (e.g., mowing) and biological controls (e.g., beneficial insects, pheromones) before chemical controls (e.g., pesticides).

Jurisdiction: The geographic area within the Permittee's boundaries that are required under this Order to be under the Permittee's regulatory control. The term is not intended to include facilities which the Permittee is preempted or otherwise precluded from regulating, such as federal and state facilities, school districts, and similar governmental (non-municipally owned or operated) entities.

Legal Authority: The ability of a Permittee to impose and enforce statutes, ordinances, and regulations to require control of pollutant sources and regulate the discharge of pollutants to the storm drain system, and to enter into interagency agreements, contracts, and memorandums of understanding. These powers are granted to the Permittees by the Constitution of the State of California and the General Laws of the State (for General Law Cities/Counties) or individual constitutions (for Charter Cities/Counties). These powers are promulgated by the Permittee through their municipal codes, ordinances, and statutes duly adopted by their governing body.

Local Stormwater Pollution Prevention Plan (Local SWPPP): A SWPPP if the project is not subject to the General Construction Permit, otherwise, a state SWPPP is required.

MS4: See Municipal Separate Storm Sewer System

Maximum Extent Practicable (MEP): The standard for implementation of stormwater management programs to reduce pollutants in stormwater. MEP refers to stormwater management programs taken as a whole. It is the maximum extent possible taking into account equitable consideration and competing facts, including, but not limited to: the gravity of the problem, public health risk, societal concern, environmental benefits, pollutant removal effectiveness, regulatory compliance, public acceptance, implementability, cost and technical feasibility. Section 402(p)(3)(B)(iii) of the Clean Water Act requires that municipal permits "...shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management

practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

Municipal Activities: all activities performed by the Permittee or performed by a contractor hired by the Permittee.

Municipal Separate Storm Sewer System (MS4): See Storm Drain System.

NPDES: See National Pollutant Discharge Elimination System

National Pollutant Discharge Elimination System (NPDES): A permit issued by the USEPA, SWRCB, or CRWQCB pursuant to the Clean Water Act that authorizes discharges to waters of the United States and requires the reduction of pollutants in the discharge.

Non-Stormwater Discharge: Any discharge to a municipal storm drain system that is not composed entirely of stormwater.

Notice of Intent to Meet and Confer (NIMC): A letter sent to a Permittee or Permittees by the Regional Board Executive Officer as an invitation to discuss the implementation of requirements under this Order and is made when it is suspected that a Permittee or Permittees has/have an insufficient program based upon performance and submittals made under this Order. The NIMC is a part of the Administrative Review section of this Order and provides an opportunity for the Permittee(s) to meet with Regional Board staff to clarify any potential misunderstandings prior to, or in lieu of the Regional Board taking enforcement action for "non-compliance".

Nuisance: Anything which meets all of the following requirements: (1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; (2) affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; (3) occurs during, or as a result of, the treatment or disposal of wastes.

Permittee(s): Any agency named in the NPDES stormwater permit as being responsible for permit conditions within its jurisdiction. Permittees to the NPDES stormwater permit presently include the Los Angeles County Flood Control District, Los Angeles County, and the cities of Agoura Hills, Alhambra, Arcadia, Artesia, Azusa, Baldwin Park, Bell, Bellflower, Bell Gardens, Beverly Hills, Bradbury, Burbank, Calabasas, Carson, Cerritos, Claremont, Commerce, Compton, Covina, Cudahy, Culver City, Diamond Bar, Downey, Duarte, El Monte, El Segundo, Gardena, Glendale, Glendora, Hawaiian Gardens, Hawthorne, Hermosa Beach, Hidden Hills, Huntington Park, Industry, Inglewood, Irwindale, La Canada Flintridge, La Habra Heights, Lakewood, La Mirada, La Puente, La Verne, Lawndale, Lomita, Los Angeles, Lynwood, Malibu, Manhattan Beach, Maywood, Monrovia, Montebello, Monterey Park, Norwalk, Palos Verdes Estates, Paramount, Pasadena, Pico Rivera, Pomona, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Rosemead, San Dimas, San Fernando, San Gabriel, San Marino, Santa Fe Springs, Santa Monica, Sierra Madre, Signal Hill, South El Monte, South Gate, South Pasadena, Temple City, Torrance, Vernon, Walnut, West Covina, West Hollywood, Westlake Village, and Whittier.

Pervious: Natural or man-made surfaces that allow the entry of water into the underlying soil, resulting in less runoff from the surface when compared to impervious surfaces. Examples of pervious surfaces include vegetated areas, most undeveloped areas, uncompacted earth surfaces, and lattice type modular pavements.

Phase I Facilities: This term refers to categories of facilities which are required to obtain a National Pollutant

Discharge Elimination System (NPDES) permit for stormwater discharges associated with "industrial activity" as required by 40 CFR 122.26(c). The term "industrial activity" is defined in 40 CFR 122.26(b)(14) and in general refers to 11 categories of activities. These categories include:

i. FACILITIES SUBJECT TO STORM WATER EFFLUENT LIMITATIONS GUIDELINES, NEW SOURCE PERFORMANCE STANDARDS, OR TOXIC POLLUTANT EFFLUENT STANDARDS (40 CFR SUBCHAPTER N). Currently, categories of facilities subject to storm water effluent limitations guideline are Cement Manufacturing (40 CFR Part 411), Feedlots (40 CFR Part 412), Fertilizer Manufacturing (40 CFR Part 418), Petroleum Refining (40 CFR Part 419), Phosphate Manufacturing (40 CFR Part 422), Steam Electric (40 CFR Part 423), Coal Mining (40 CFR Part 434), Mineral Mining and Processing (40 CFR Part 436), Ore Mining and Dressing (40 CFR Part 440), and Asphalt Emulsion (40 CFR Part 442). The fact sheet accompanying this general permit contains additional information pertaining to facilities subject to new source performance standards or toxic pollutant effluent standards.

ii. MANUFACTURING FACILITIES: Standard Industrial Classifications (SICs) 24 (except 2411 and 2434), 26 (except 265 and 267), 28 (except 283 and 285) 29, 311, 32 (except 323), 33, 3441, and 373.

iii. OIL AND GAS/MINING FACILITIES: SICs 10 through 14 including active or inactive mining operations (except for areas of coal mining operations meeting the definition of a reclamation area under 40 CFR 434.11(l) because of performance bond issued to the facility by the appropriate Surface Mining Control and Reclamation Act (SMCRA) authority has been released, or except for areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge stormwater contaminated by contact with or that has come into contact with any overburden, raw material, intermediate products, finished products, by products, or waste products located on the site of such operations. Inactive mining operations are mined sites that are not being actively mined, but which have an identifiable owner/operator. Inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined material, or sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim.

iv. HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL FACILITIES: Includes those operating under interim status or a general permit under Subtitle C of the Federal Resource Conservation and Recovery Act (RCRA).

v. LANDFILLS, LAND APPLICATION SITES, AND OPEN DUMPS: Sites that receive or have received industrial waste from any of the facilities covered by this general permit, sites subject to regulation under Subtitle D of RCRA, and sites that have accepted waste from construction activities (construction activities include any clearing, grading, or excavation that results in disturbance of five acres or more).

vi. RECYCLING FACILITIES: SICs 5015 and 5093. These codes include metal scrap yards, battery reclaimers, salvage yards, motor vehicle dismantlers and wreckers, and recycling facilities that are engaged in assembling, breaking up, sorting, and wholesale distribution of scrap and waste material such as bottles, wastepaper, textile wastes, oil waste, etc.

vii. STEAMELECTRIC POWER GENERATING FACILITIES: Includes any facility that generates steam for electric power through the combustion of coal, oil, wood, etc.

viii. TRANSPORTATION FACILITIES: SICs 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication) or other operations identified herein that are associated with industrial activity.

ix. SEWAGE OR WASTEWATER TREATMENT WORKS: Facilities used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including lands dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of one million gallons per day or more, or required to have an approved pretreatment program under 40 CFR Part 403. Not included are farm lands, domestic gardens, or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the CWA.

xi. MANUFACTURING FACILITIES WHERE MATERIALS ARE EXPOSED TO STORM WATER: SICs 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 3441), 35, 36, 37 (except 373), 38, 39, and 4221-4225.

Note: Category x, Construction activity, is covered by a separate general permit.

Pollutant: Those "pollutants" defined in Section 502(6) of the federal Clean Water Act (33 U.S.C.§1362(6)), or incorporated into California Water Code §13373. Examples of pollutants include, but are not limited to the following:

#Commercial and industrial waste (such as fuels, solvents, detergents, plastic pellets, hazardous substances, fertilizers, pesticides, slag, ash, and sludge);

#Metals such as cadmium, lead, zinc, copper, silver, nickel, chromium, and non-metals such as phosphorus and arsenic;

#Petroleum hydrocarbons (such as fuels, lubricants, surfactants, waste oils, solvents, coolants, and grease);

#Excessive eroded soils, sediment, and particulate materials in amounts which may adversely affect the beneficial use of the receiving waters, flora or fauna of the State;

#Animal wastes (such as discharge from confinement facilities, kennels, pens, recreational facilities, stables, and show facilities);

#Substances having characteristics such as pH less than 6 or greater than 9, or unusual coloration or turbidity, or excessive levels of fecal coliform, or fecal streptococcus, or enterococcus;

The term "Pollutant" shall not include uncontaminated stormwater, potable water or reclaimed water generated by a lawfully permitted water or wastewater treatment facility.

The term "Pollutant" also shall not include any substance identified in this definition, if through compliance with the best management practices available, the discharge of such substance has been eliminated to the maximum extent practicable. In an enforcement action, the burden shall be on the person who is the subject of such action to establish the elimination of the discharge to the maximum extent practicable through compliance with the best management practices available.

Pollutant Loading: The quantity of a pollutant found in stormwater and/or non-stormwater often expressed in mass per unit of time. Pollutant loadings are commonly expressed in units of tons/year or pounds/year.

Pollutants of Concern: Constituents identified in the annual monitoring report as being "Constituents of Concern" or "Pollutants of Concern".

Pollution Prevention: Includes any planning, schedules of activities, prohibitions of practices, implementation of maintenance procedures, public education, and other management practices, to prevent or reduce pollutants in stormwater / urban runoff discharges.

Polluted Stormwater Runoff: Stormwater runoff that contains any pollutants that could impair the beneficial use of a receiving water body.

Potable Water Sources: Flows from drinking water storage, supply and distribution systems including flows

from system failures, pressure releases, system maintenance, well development, pump testing, fire hydrant flow testing; and flushing and dewatering of pipes, reservoirs, vaults, and wells.

Principal Permittee: The agency named in the NPDES stormwater permit to serve as permit coordinator, responsible for general administration of the permit, and coordinating cooperation by other Permittees, including but not limited to the implementation of local self-monitoring programs and BMPs, and preparation and submittal of reports required by the permit. The Principal Permittee under this Order is the Los Angeles County Flood Control District.

Priority Catch Basins: Catch basins that appear on the list of Priority Catch Basins generated through the Public Agency Model Program.

Proper Disposal: The act of disposing of material(s) in a lawful manner and which ensures the protection of water quality and beneficial uses of receiving waters.

Public Agency Vehicle Maintenance/Material Storage Facility: Any Permittee-owned and/or operated facility that is: used for vehicle or equipment maintenance, repair, washing, or fueling; and/or is required to prepare a hazardous materials business plan. (See Corporation Yard)

Receiving Water Objectives: Objectives of the California Ocean Plan, the Los Angeles Basin Plan, and the California Toxics Rule.

Receiving Waters: All surface water bodies within the permit area that are identified in the Basin Plan.

Redevelopment: Projects creating or adding 5,000 square feet or more of impervious surface on an already developed site.

Regional Board: The Governing Board of the California Regional Water Quality Control Board State agency with primary responsibility for the coordination and control of water quality. This means the California Regional Water Quality Control Board, Los Angeles Region. The Los Angeles Region is comprised of all basins draining into the Pacific Ocean between the southeasterly boundary, located in the westerly part of Ventura County, of the watershed of Rincon Creek and a line which coincides with the southeasterly boundary of Los Angeles County Flood Control District from the ocean to San Antonio Peak and follows thence the divide between San Gabriel River and Lytle Creek drainage to the divide between Sheep Creek and San Gabriel River drainage.

Reportable Quantity: Quantity of a hazardous substance, as set forth in 40 CFR 302, which requires notification pursuant to 40 CFR 302 in the event of that quantity release.

Runoff: Means any runoff including stormwater and dry-weather flows from a drainage area that reaches a receiving water body or sub-surface. During dry weather it is typically comprised of many base flow components either contaminated with pollutants or uncontaminated.

SIC: See Standard Industrial Classification.

SPCA: See Storm Water Program Compliance Amendment

SQMP: See Stormwater Quality Management Plan.

SWRCB: State Water Resources Control Board

Secondary Containment: Structures, usually dikes or berms, surrounding tanks or other storage containers to catch spilled or leaked materials to prevent their discharge to the MS4.

Sediment: Organic or inorganic material that is carried by or suspended in water and settles to form deposits in the storm drain system or receiving waters.

Source Minimization: Planning or operational practices that reduce the amount of materials stored at a site.

Standard Industrial Classification (SIC): The statistical classification standard, organized by industry, underlying all establishment-based federal economic statistics. The SIC of a particular industry is determined using the latest Standard Industrial Classification Manual as prepared by the Executive Office of the President, Office of Management and Budget.

State Storm Water Pollution Prevention Plan (SWPPP): A plan required by and for which contents are specified in the State of California General Permit for Storm Water Discharges Associated with Industrial Activities, and the General Permit for Storm Water Discharges Associated with Construction Activities. The purpose of the plan is to help identify the sources of pollution that affect the quality of stormwater discharges from a site and to describe and ensure the implementation of practices to reduce pollutants in stormwater discharges.

Storm Drain System: Streets, gutters, conduits, natural or artificial drains, channels and watercourses, or other facilities that are owned, operated, maintained or controlled by any Permittee and used for the purpose of collecting, storing, transporting, or disposing of stormwater.

Stormwater: Water which originates from atmospheric moisture (rainfall or snowmelt) and that falls onto land, water, or other surfaces.

Stormwater Management Plan: This is the sum of all requirements of this Order. This in not to be confused with the SQMP.

Stormwater Pollution Prevention Plan (SWPPP): A plan describing proposed design, placement, and implementation of BMPs.

Stormwater Program Compliance Amendment (SPCA): The SPCA is a report prepared by a Permittee if directed to by the Regional Board Executive Officer for insufficient submittals made under this Order. The SPCA is a part of the Administrative Review section of this Order and will include additions and enhancements to the jurisdiction's stormwater program with enforceable implementation deadlines.

Stormwater Quality Management Plan (SQMP): The five Model Programs collectively developed by the Permittees in accordance with provisions of the NPDES Permit Order Number 96-054, to comply with applicable federal and state laws.

Stormwater Runoff: That part of precipitation (rainfall or snowmelt) which travels via flow across a surface to the storm drain system or receiving waters. Examples of this phenomenon include: the water that flows from a building's roof when it rains (runoff from an impervious surface); the water that flows into streams when snow on the ground begins to melt (runoff from a semi-pervious surface); and the water that flows from a vegetated surface when rainfall is in excess of the rate at which it can infiltrate into the underlying soil (runoff from a pervious surface). When all other factors are equal, runoff increases as the perviousness of a surface decreases.

Standard Urban Stormwater Mitigation Plan: A plan, to be submitted prior to the submittal of an application for the first planning or building approval for a new development project, that sets forth stormwater pollution controls to be incorporated into development projects. The plan shall:

#be designed to reduce the runoff volume from the site and the pollutant load contributed by the site through incorporation of design elements and practices that address each of the following goals:

#maximize, to the extent practicable, the percentage of permeable surfaces in order to allow more percolation,

#minimize, to the extent practicable, the amount of runoff directed to impermeable areas to the storm drain system,

#maximize, to the extent practicable, stormwater filtration and storage for reuse through the use of sediment traps, cisterns or other means,

#minimize, to the extent practicable, parking lot pollution through the use of porous materials to allow percolation of stormwater, through the installation of appropriate treatment controls, or through other means.

Street Washing: The practice of washing of streets and sidewalks using water or other cleaning fluids.

Toxic Materials: For the purposes of this Order, toxic materials means any material(s) or combination of materials which directly or indirectly cause(s) either acute or chronic toxicity in the water column.

Toxic Pollutant: Those pollutants, or combinations of pollutants, defined in Section 502(13) or 307(a)(1) of the federal Clean Water Act (33 U.S.C.§1362(13)).

Undesirable Coloration: See "Color" in the Water Quality Control Plan, Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (page 3-9) June 13, 1994.

USEPA: United States Environmental Protection Agency

Waste Minimization: Operational practices that reduce the amount of waste materials generated. Practices may include recycling and reuse.

Watershed Management Area (WMA): Any one of the general watershed areas covered by this NPDES stormwater permit consisting of: Malibu Creek and other rural areas discharging to Santa Monica Bay, Dominguez Channel/Los Angeles Harbor, San Gabriel River, Los Angeles River, and Ballona Creek and other urban areas discharging to the Santa Monica Bay watersheds.

Watershed Management Area Plan (WMAP): A plan for implementation of permit requirements that is based on the Stormwater Quality Management Plan (SQMP) but further addresses specific issues, pollutants of concern, and BMPs that are unique to the specific Watershed Management Area.

Watershed Management Committee (WMC): A committee composed of representatives from each Permittee in a Watershed Management Area. Duties include establishing goals and objectives for the Watershed; prioritizing pollution control efforts; developing a specific Watershed Management Plan; coordinating and facilitating annual reports for the watershed; and facilitating compliance by Permittees in the watershed.

PART 6. STANDARD PROVISIONS

A. Should the Discharger discover that it failed to submit any relevant facts or that it submitted incorrect information in a report, it shall promptly submit the missing or correct information.

B. The Discharger shall report all instances of non-compliance not otherwise reported at the time monitoring reports are submitted.

C. This Order includes the attached Monitoring and Reporting Program, and Standard Urban Stormwater Mitigation Plan, which are a part of the permit and must be complied with in the same manner as with the rest of the requirements in the permit.

D. Public Review

1. All documents submitted to the Regional Board in compliance with the terms and conditions of this Permit shall be made available to members of the public pursuant to the Freedom of Information Act (5 U.S.C. Section 552 (as amended) and the Public Records Act (California Government Code Section 6250 *et seq.*)).

2. All documents submitted to the Executive Officer for approval shall be made available to the public for a 30-day period to allow for public comment.

E. Duty to Comply [40 CFR 122.41(a)]

1. The Discharger must comply with all the terms, requirements, and conditions of this Order. Any violation of this Order constitutes a violation of the Clean Water Act, its regulations and the California Water Code, and is grounds for enforcement action, Order termination, Order revocation and reissuance, denial of an application for reissuance; or a combination thereof.

2. A copy of these waste discharge specifications shall be maintained by the Discharger so as to be available during normal business hours to Discharger employees and members of the public.

3. Any discharge of wastes at any point(s) other than specifically described in this Order is prohibited, and constitutes a violation of the Order.

F. Duty to Mitigate [40 CFR 122.41(d)]

The Discharger shall take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.

G. Inspection and Entry [40 CFR 122.41(i)]

The Regional Board, USEPA, and other authorized representatives shall be allowed:

1. Entry upon premises where a regulated facility is located or conducted, or where records are kept under conditions of this Order;

2. Access to copy any records that are kept under the conditions of this Order;

3. To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and,

4. To photograph, sample, and monitor for the purpose of assuring compliance with this Order, or as otherwise authorized by the Clean Water Act and the California Water Code.

H. Proper Operation and Maintenance [40 CFR 122.41(e)]

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment (and related appurtenances) that are installed or used by the Discharger to achieve compliance with this Order. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar system that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order.

I. Signatory Requirements [40 CFR 122.41(k)]

Except as otherwise provided in this Order, all applications, reports, or information submitted to the Regional Board shall be signed by the Director of Public Works, City Engineer, or authorized designee under penalty of perjury.

J. Permit Action [40 CFR 122.41(f)]

1. This Order may only be modified, revoked, or reissued, prior to the expiration date, by the Regional Board, in accordance with the procedural requirements of the Water Code and Title 23 of the California Code of Regulations for the issuance of waste discharge requirements, and upon prior notice and hearing, to:

   a. Address changed conditions identified in the required reports or other sources deemed significant by the Regional Board;

   b. Incorporate applicable requirements or statewide water quality control plans adopted by the State Board or amendments to the Basin Plan;

c. Comply with any applicable requirements, guidelines, and/or regulations issued or approved pursuant to CWA Section 402(p);

d. Consider any other federal or state laws or regulations that became effective after adoption of this Order ; and/or,

e. Address any amendments under the Clean Water Act.

2. After notice and opportunity for a hearing, this Order may be terminated, revoked and reissued, or modified for cause, including, but not limited to:

a. Violation of any term or condition contained in this Order;

b. Obtaining this Order by misrepresentation, or failure to disclose all relevant facts; or,

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

3. The filing of a request by the Discharger for a modification, revocation and re-issuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

4. This Order may be modified to make corrections or allowances for changes in the permitted activity listed in this section, following the procedures at 40 CFR Part 122.63, if processed as a minor modification.

K. Severability

The provisions of this permit are severable; and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected.

L. Duty to Provide Information [40 CFR 122.41(h)]

The Discharger shall furnish, within a reasonable time, any information the Regional Board or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Discharger shall also furnish to the Regional Board, upon request, copies of records required to be kept by this Order.

M. Ninety-Six Hour Reporting[1]

1. The Discharger shall report any noncompliance than may endanger health or the environment. Any information shall be provided orally within 96 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within 10 working days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

2. The Executive Officer may waive the required written report on a permittee-by-permittee basis.

N. Bypass [40 CFR 122.41(m)][2]

Bypass (the intentional diversion of waste streams from any portion of a treatment facility) is prohibited unless it is to facilitate maintenance of stormwater BMPs. The Regional Board may take enforcement action against the Discharger for bypass unless:

1. Bypass was unavoidable to prevent loss of life, personal injury or severe property damage. (Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production);

2. There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated waste, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that could occur during normal periods of equipment downtime or preventive maintenance;

3. The Discharger submitted a notice at least ten days in advance of the need

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[1]This provision applies to incidents where effluent limitations (numerical or narrative) as provided in this Order or in the SQMP are exceeded, and which endanger public health or the environment.

[2]This provision applies to the operation and maintenance of stormwater controls and BMPs as provided in this Order or in the SQMP.

for a bypass to the Regional Board; or,

4. The Discharger may allow a bypass to occur that does not cause effluent limitations to be exceeded, but only if it is for essential maintenance to assure efficient operation. In such a case, the above bypass conditions are not applicable.

O. Upset [40 CFR 122.41(n)][3]

1. A Discharger that wishes to establish the affirmative defense of an upset in an action brought for noncompliance shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset;

   b. The permitted facility was being properly operated by the time of the upset;

   c. The Discharger submitted notice of the upset as required; and,

   d. The Discharger complied with any remedial measures required.

2. No determination made before an action for noncompliance, such as during administrative review of claims that noncompliance was caused by an upset, is final administrative action subject to judicial review.

3. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof.

P. Property Rights [40 CFR 122.41(g)]

This Order does not convey any property rights of any sort, or any exclusive privilege.

Q. Enforcement

1. Violation of any of the provisions of the NPDES permit or any of the provisions of this Order may subject the violator to any of the penalties described herein, or any combination thereof, at the discretion of the prosecuting authority; except that only one kind of penalty may be applied for each kind of violation. The Clean Water Act provides the following:

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[3] *Supra.* See footnote number 2.

Criminal Penalties

a. *Negligent Violations*
The CWA provides that any person who negligently violates permit conditions implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both.

b. *Knowing Violations*
The CWA provides that any person who knowingly violates permit conditions implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

c. *Knowing Endangerment*
The CWA provides that any person who knowingly violates permit conditions implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act and who knows at that time he is placing another person in imminent danger of death or serious bodily injury is subject to a fine of not more than $250,000, or by imprisonment for not more than 15 years, or both.

d. *False Statement*
The CWA provides that any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under the Act or who knowingly falsifies, tampers with, or renders inaccurate, any monitoring device or method required to be maintained under the Act, shall upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years, or by both. If a conviction is for a violation committed after a first conviction of such a person under this paragraph, punishment shall be by a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or by both. (See section 309(c)(4) of the Clean Water Act.)

Civil Penalties

e. The CWA provides that any person who violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed $27,500 per day for each violation.

2. The California Water Code provides that any person who violates a waste

discharge requirement provision of the California Water Code is subject to civil penalties of up to $5,000 per day, $10,000 per day, or $25,000 per day of violation; or when the violation involves the discharge of pollutants, is subject to civil penalties of up to $10 per gallon per day or $25 per gallon per day of violation; or some combination thereof, depending on the violation or combination of violations.

R. Need to Halt or Reduce Activity not a Defense [40 CFR 122.41(c)]

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order.

S. Regional Board Order No. 96-054 is hereby rescinded.

T. This Order expires five years from permit adoption. The Discharger must submit a Report of Waste Discharge (ROWD) in accordance with Title 23, California Code of Regulation, not later than 180 days in advance of such date as application for reissuance of waste discharge requirements.

I, Dennis A. Dickerson, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on date of permit adoption.

_____

Dennis A. Dickerson
Executive Officer

stormwater management programs. The obligation of the Principal Permittee with respect to the receiving waters study could consist of the following:

i. Plume Study: The Principal Permittee would support a plume study to evaluate the dispersion, fate, and transport of stormwater pollutants in Dominguez Channel, Los Angeles River, and San Gabriel River.

ii. Benthic Study: The Principal Permittee would support a study to assess impacts of stormwater on the marine benthic community near the mouths of Dominguez Channel, Los Angeles River, and San Gabriel River. If it is the consensus of project scientists that a third year of benthic study is advisable to meet the goals of the receiving waters study, the Principal Permittee would consider further contribution.

iii. Toxicity Study: The Principal Permittee would support a study to evaluate sediment and water column toxicity on appropriate marine species in Dominguez Channel, Los Angeles River, and San Gabriel River. If it is the consensus of the project scientists that a third year of toxicity studies is advisable to meet the goals of the receiving waters study, the Principal Permittee would consider further contribution.

b. Santa Monica Bay

i. Plume Study: To study the persistence of stormwater plumes;

ii. Toxicity: Toxicity Identification Evaluations (TIEs) on species to find the impacts of constituents other than metals; and,

iii. Sediments: Fate of sediments in the Bay.

c. Project Design: The receiving waters studies shall initially contain the elements established in II.A.7.a and b. However, the scientists conducting the receiving waters studies may alter the parameters of the second and (if necessary) the third year of the receiving waters studies so as to meet the objectives of each study. Such alterations may include changing of sampling locations, use of different sampling techniques, or other pertinent redirection of resources. The Principal Permittee shall notify the Executive Officer of any revisions to the second and (if necessary) third years of the receiving waters studies for review and approval.

CONSTITUENT	EPA TEST METHOD	BALLONA CREEK	MALIBU CREEK	LOS ANGELES RIVER	SAN GABRIEL RIVER
Dissolved Copper	A220.1	X		X	
Total Copper	A220.1	X	X	X	X
Dissolved Iron	A236.1			X	
Total Iron	A236.1	X	X	X	X
Dissolved Lead	A239.2	X	X	X	X
Total Lead	A239.2			X	
Total Mercury	A245.1	X	X	X	X
Dissolved Nickel	A249.2			X	
Total Nickel	A249.2	X	X	X	
Dissolved Zinc	A289.1	X	X	X	X
Total Zinc	A289.1	X		X	
Bis(2-ethylhexyl)phthalate	625M	X	X	X	X
PAHs	625M	X	X	X	X
Diazinon	507	X	X	X	X
Chlorpyrifos	507	X	X	X	X

X = Requires analysis

6. If a constituent is not detected at the method detection limit for its respective test method listed in Table 2 above in more than 25 percent of the first ten sampling events or on a rolling basis using ten consecutive sampling events, it will not be further analyzed unless the observed occurrences show concentrations greater than ten times the detection limit and are cause for concern.

7. Receiving Waters Studies

a. San Pedro Bay

The Principal Permittee, in conjunction with other Permittee(s), could partially fund a study of receiving waters impacted by stormwater, subject to revisions as set forth below in II.A.7.c. The purpose of the study will be to study the impacts, if any, of stormwater/non-stormwater discharges on the beneficial uses of San Pedro Bay and to assist the Permittees in developing

CONSTITUENT	EPA TEST METHOD	BALLONA CREEK	MALIBU CREEK	LOS ANGELES RIVER	SAN GABRIEL RIVER
Sulfate	B429	X	X	X	X
Alkalinity	A310.1	X	X	X	X
Hardness	A130.2	X	X	X	X
COD	A410.4	X	X	X	X
pH	A150.1	X	X	X	X
Specific Conductance	A120.1	X	X	X	X
Total Dissolved Solids	A160.1	X	X	X	X
Turbidity	A180.1	X	X	X	X
Total Suspended Solids	A160.2	X	X	X	X
Volatile Suspended Solids	160.4	X	X	X	X
MBAS	A425.1	X			
Total Organic Carbon	A415.1	X	X	X	X
BOD	A405.1	X	X	X	X
Dissolved Phosphorus	A365.2	X	X	X	X
Total Phosphorus	A365.2	X	X	X	X
NH3-N	A350.3	X			
Nitrate-N	C4110B	X	X	X	X
Nitrite-N	C4110B	X		X	X
TKN	A351.4	X	X	X	X
Dissolved Aluminum	A202.2			X	
Total Aluminum	A202.2	X	X	X	X
Dissolved Barium	A208.2	X	X	X	X
Total Barium	A208.2	X	X	X	X
Dissolved Boron	A212.3	X	X	X	X
Total Boron	A212.3	X	X	X	X
Dissolved Cadmium	A213.2	X	X	X	X

Multifamily Residential	Bond Issue Project 404	Ammonia, ammonia nitrogen, nitrite nitrogen, TSS, PAH, diazinon, chlorpyrifos
Mixed Residential	Bond Issue Project 156	Ammonia, nitrate, total zinc, PAH, diazinon, chlorpyrifos

Mass Emissions

4. The Principal Permittee shall monitor a total of four mass emission stations. Monitoring shall not exceed five storm events per station for each storm season. Composite samples may also be taken at Coyote Creek.

5. Samples for mass emission station monitoring may be taken at the same locations and with the same type of automatic sampler used under Order 96-054, as well as through grab sampling. The samplers shall be set to monitor storms totaling 0.25 inches or greater of rainfall. The minimum required constituents to be analyzed for samples taken at mass emission stations are listed in Table 2 below.

Table 2
Mass Emissions Constituents

CONSTITUENT	EPA TEST METHOD	BALLONA CREEK	MALIBU CREEK	LOS ANGELES RIVER	SAN GABRIEL RIVER
Cyanide	A335.2	X	X	X	X
TPH	A418.1			X	
Oil and Grease	A413.1			X	
Indicator Bacteria	Varies	X	X	X	X
Ammonia	A350.3	X		X	
Calcium	A215.2	X	X	X	X
Magnesium	C3500MgD	X	X	X	X
Potassium	A258.1	X	X	X	X
Sodium	A273.1	X	X	X	X
Bicarbonate	A310.1	X	X	X	X
Chloride	B429	X	X	X	X
Flouride	B429	X	X	X	X
Nitrate	B429	X	X	X	X

CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD - LOS ANGELES REGION
320 W. 4TH STREET, SUITE 200
LOS ANGELES, CA 90013

II. Monitoring Requirements

A. The Discharger shall implement the Countywide Monitoring Plan as follows.

Land Use

1. The Principal Permittee shall monitor a total of 200 station events per storm season at land use stations, provided there are sufficient storm events during the season. A station event is defined as one sampling event per station.

2. All samples for land use station monitoring may be taken at the same locations and with the same type of automatic sampler used under Order 96-054. The samplers shall be set to monitor storms totaling 0.25 inches or greater of rainfall.

3. The land use stations shall be monitored during the term of this Order or until such time that event mean concentrations (EMC) are derived, at the 25% error rate, for the following constituents at their respective sites:

Table 1
Land Use Constituents

LAND USE TYPE	LOCATION	CONSTITUENTS
Retail/Commercial	Santa Monica Pier Drain	Ammonia, total and dissolved copper, nitrate, total lead, total suspended solids (TSS), PAH, diazinon, chlorpyrifos
Vacant	Sawpit Wash	Total kjeldahl nitrogen (TKN), TSS, PAH, diazinon, chlorpyrifos
High Density Single Family Residential	Bond Issue Project 620	Total lead, PAH, diazinon, chlorpyrifos
Transportation	Dominguez Channel	PAH, diazinon, chlorpyrifos
Light Industrial	Bond Issue Project 1202	Total copper, PAH, diazinon, chlorpyrifos
Education	Bond Issue Project 474	Total copper, total zinc, TSS, PAH, diazinon, chlorpyrifos

6. Programs for Public Agency Activities

   a. The discharger shall provide a summary, which at a minimum, includes an estimate of the quantity of trash removed from catch basin inlets;

   b. A summary of the total tonnage of debris that were removed annually by street sweeping and the total miles of curbed streets within the permittee's juridiction;

   c. Evaluate the training provided to field road maintenance personnel.

B. The discharger shall submit a Stormwater Monitoring Report on October 15, 2002, and annually on October 15, thereafter. The report shall include:

1. Status of implementation of the monitoring program;
2. Results of the monitoring program;
3. A general interpretation of the results; and,
4. Both tabular and graphical summaries of the monitoring data obtained during the previous year.

C. All applications, reports, or information submitted to the Regional Board shall be signed and certified pursuant to EPA regulations 40 CFR 122.22 (b). Each report shall contain the following completed declaration:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
>
> Executed on the _____day of _____, 20___,
>
> at _____.
>
> (Signature)_____(Title)_____";

Permittee submittals to the Principal Permittee shall also be signed and certified pursuant to EPA regulations 40 CFR 122.22 (b).

D. The Discharger shall mail the original of each annual report to:

2. Public Information and Participation

   a. Programs for Residents

      i. Description of activities on distributing brochures, community outreach efforts, public communication efforts and educational programs in schools including an estimate of the number of impressions per year made on the general public about stormwater quality via print, local TV access, local radio presentations, meetings or other appropriate media.

3. Programs for Development Planning

   a. The status of significant rewrite of the Permittees' General Plan;

   b. A summary of the accomplishments of the program.

4. Programs for Development Construction

   a. Number of exempt construction projects, non-priority projects, and priority projects requiring coverage under the General Construction Activity Permit;

   b. Number and type of enforcement actions, applicable to stormwater enforcement, taken at construction sites during the past year.

5. Programs for Illicit Connection and Illicit Discharge Control

   a. Number of reports of illicit discharges that Permittees responded to, percentage that were identified as actual illicit discharges, and percentage of the actual illicit discharges where the incident was either cleaned up, referred to another responsible agency and/or follow up/education with the discharger was conducted;

   b. Number of illicit connections investigated in the past year

   c. Number of illicit connections eliminated in the past year;

   d. Number and type of enforcement actions for stormwater illicit connections taken in the past year;

   e. A summary from records on illicit discharges and connections which includes type of material, type of source, date of initial inspection, enforcement action taken, date of follow-up inspection, date of conclusion/cleanup/removal/ follow-up/education.

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. CIXXX

FOR

STORMWATER MANAGEMENT/URBAN RUNOFF DISCHARGES
FOR
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT,
COUNTY OF LOS ANGELES, AND THE CITIES OF LOS ANGELES COUNTY

NPDES PERMIT NO. CASXXXXXX

I. Program Reporting Requirements

A. The Permittees shall submit, by October 15 of each year beginning the year 2002, an Annual Stormwater Program Report, Assessment, and Budget Summary documenting the status of the general program and individual tasks contained in the WMAPs.

The Permittees shall submit standard annual reporting forms to the Principal Permittee or Regional Board including information on items 1-6 below.

The Annual Stormwater Program Report, Assessment, and Budget Summary shall include any proposed changes to the WMAPs. The Annual Stormwater Program Report, Assessment, and Budget Summary shall cover the previous fiscal year from July 1 through June 30. At a minimum, the annual report will include the following:

1. Program Management

   a. Status of compliance with permit requirements including implementation dates for all time-specific deadlines. If permit deadlines are not met, the Discharger shall report the reasons why the requirement was not met and how the requirements will be met in the future, including projected implementation date.

d. Study Reports: The Principal Permittee shall require the project scientists conducting the study to prepare an annual report covering study activities of the previous year, and any interim/final assessments. Such reports shall be submitted by the Principal Permittee to the Executive Officer with the Annual Monitoring Report.

e. Principal Permittee Responsibilities: The commitments of the Principal Permittee toward performance of a receiving waters studies could be: providing funding, and submittal of progress and final reports.

8. River Toxicity Studies: The Principal Permittee would take two storm weather and two dry weather water samples in the Los Angeles River, Coyote Creek, and Dominguez Channel. Toxicity Identification Evaluations shall be conducted for a full range of constituents on appropriate freshwater species.

   Wet weather Toxicity Identification Evaluations shall be conducted for a full range of constituents on appropriate freshwater species on the San Gabriel River.

9. Bacteria: The Principal Permittee shall participate in the Southern California Coastal Waters Research Project's development and calibration of water quality models in an effort to characterize the presence and persistence of indicator bacteria in dry and wet weather.

   The Principal Permittee could participate in similar studies initiated for other parts of the County where indicator bacteria impair beneficial uses.

10. Contaminated Sediments: The Principal Permittee could participate in the Corps of Engineers' Sediment Control Management Plan and the Coastal Commission Sediment Task Force.

11. Aerial deposition: The Principal Permittee could fund, in whole or in part, a study of the receiving water impacts due to aerial deposition on inland watersheds.

- Co-participation with the Southern California Coastal Water Research Project pathogen modeling study; and with the Coastal Commission and the U.S. Army Corp to manage contaminated sediments

Deficiencies

The proposed monitoring program is deficient as follows:

- **Trash monitoring**: Does not implement a baseline trash-monitoring program for watersheds not presently listed for impairment from trash.

- **Treatment Control BMP Effectiveness**: Does not evaluate the effectiveness of structural and treatment control BMPs at critical sources and as watershed improvement projects.

Possible Advancements

- Source Identification Strategy: Submit strategies for source identification and reduction of zinc and copper in the Ballona Creek watershed and nutrients in the Malibu watershed, and for pollutants scheduled in respective watersheds within the next 5 years for Total Maximum Daily Load (TMDL) development.

- New Development Controls: Conduct a study to measure the effectiveness of new development and redevelopment standards in improving the quality of storm water discharges.

- Coordination: Coordinate the monitoring program with the California Department of Transportation (Caltrans), the Santa Monica Bay Restoration Program, and the Southern California Coastal Water Research Project (SCCWRP) Regional Monitoring Program.

IX. Miscellaneous

Small Municipality Temporary Delay: Municipalities with a population of less than 100,000 (1990 census), who availed themselves of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 temporary delay provisions for publicly operated Phase 1 industrial facilities and construction projects, will be required to obtain coverage for storm water discharges no later than March 10, 2003.

Administrative Review Procedure: The Administrative Review procedure followed in the current permit term is likely to be revised significantly, with 'Notice of Intent to Meet and Confer' and other administrative review provisions eliminated. The USEPA has commented that MS4 permits should not include such administrative steps that restrain the ability of the permitting authority to enforce the federal Clean Water Act.

- Tracking database: Develop a construction inspection and enforcement tracking system, similar to the one for the industrial program. A standardized database may be created to identify projects subject to the construction program requirements and inspection and enforcement fields attached. The database will also enable measuring the performance and progress.

- Program detail: Provide detail on compliance inspection, follow-up procedures, fate of self-inspection forms, use of building code violation forms for storm water violations, and guidelines on sanctions.

- Preference: Emphasize the use of erosion control BMPs first and only then sediment control BMPs. Guidance materials about BMPs that may be considered for implementation should be made readily available through diverse media such as websites and public counters.

VIII. Program for Storm Water Monitoring in Los Angeles County

Background

Permittees implemented a successful comprehensive monitoring and assessment program during the current permit at two watersheds to better understand receiving water impacts. In addition they measured mass emissions at four rivers, conducted land-use pollutant load studies, and evaluated a couple of critical sources.

The objective of a monitoring program for Los Angeles County is to: (i) identify sources of storm water pollutants; (ii) assess impacts of storm water discharges on receiving waters; (iii) measure pollutant loads to waters of the U.S. and establish long-term trends; and (iv) evaluate the effectiveness of BMPs.

The objective of the storm water program may be achieved by: (i) monitoring critical sources and priority land-uses; (ii) profiling storm water discharge plumes and evaluating the causes of toxicity; (iii) conducting bioassessments of resident flora and fauna to assess the health of the ecosystem; (iv) measuring mass-emissions of pollutants to the coastline at river and stream mouths; and (v) evaluating the effectiveness of structural and treatment control BMPs.

Permittees propose to implement a monitoring program for Los Angeles County that includes:

- Landuse monitoring for selected pollutant parameters
- Mass emission monitoring at Ballona Creek, Malibu Creek, Los Angeles River, Dominguez Channel and San Gabriel River for selected parameters
- Plume profile, bioassessment, sediment fate and transport, and storm water toxicity at San Pedro Bay and Santa Monica Bay
- Wet and dry weather flow toxicity in the Los Angeles River, Coyote Creek, and Dominguez Channel
- Impact of aerial deposition on inland watersheds

The objective of the program may be achieved by, (I) adopting an ordinance requiring the implementation of proper erosion and sediment controls, and controls for other wastes; (ii) implementing procedures for site plan review of construction plans that consider potential for water quality impacts; (iii) implementing procedures for construction site inspection and enforcement of control measures; (iv) utilizing sanctions and penalties to ensure compliance; (v) establishing procedures for the receipt and consideration of information and non-compliance reports submitted by the public; (vi) identifying appropriate BMPs for implementation on construction sites; (vii) establishing measurable goals to evaluate successful program implementation.

Permittees propose to continue the following Development Construction program components:

- local storm water pollution prevention plans for projects less than five acres
- minimum control measures at all construction sites
- State storm water pollution prevention plan and notice of intent filing for construction projects five or more acres
- Brochures and information material for developers, construction affiliates, and the public
- Employee training

Deficiencies

The program is deficient because it does not include:

- **SWPPP Enforcement**: Permittees need to enforce SWPPP requirements at all sites under their municipal and MS4 permit authority, including sites under the State General Construction Activity Storm Water Permit, independent of the Regional Board's inspection program.

- **Performance:** An appropriate performance standard to measure successful implementation.

Possible Advancements

- Training: Tier employee training schedules to allow a completion time of six months for cities with a population less than 1 million and one year for cities with a population of 1 million or more.

- Regulation of Additional Construction Sites: Lower the threshold for storm water pollution prevention plans from 5 acres to "1 acre or more," to be consistent with USEPA Phase II regulations. [See USEPA Phase II Small Construction Projects Fact Sheet]. Also consider requiring such plans for high-risk projects that are within or discharging directly to or directly adjacent to an environmental sensitive area, are located in a hillside area; and/or are less than an acre – but need to be regulated as deemed necessary by priority criteria to be proposed by Permittees.

erosion and/or impair protect stream habitat. Permittees should work with the County of Ventura to develop criteria.

- **Performance:** An appropriate performance standard to measure successful implementation is not included

Possible Advancements

- Possible categories to add to the SUSMP: Extend SUSMP standards and post-construction storm water mitigation to ministerial (non-discretionary) projects. Also extend SUSMP standards to: (i) locations within or directly adjacent to or discharging directly to an environmentally sensitive areas; and (ii) heavy industrial development on one acre of more.

- Commercial/Industrial category: Lower the threshold for application of SUSMP requirements for commercial and industrial developments from 100,000 square feet to 1 acres, beginning March 8, 2003, to be consistent with USEPA Phase II regulations for small construction projects [See USEPA Fact Sheets – Small Construction; Construction Site Runoff; Post-Construction Runoff, which are attached]

- Retail gasoline outlets: Make the numerical BMP design criteria applicable to proposed medium and high-output retail gasoline outlet developments.

- Non-SUSMP listed projects: Use project characteristics and a checklist to identify additional development types for post-construction storm water runoff. The characteristics may include (i) vehicle or equipment fueling areas; (ii) vehicle or equipment maintenance areas; (iii) outdoor storage or handling of hazardous materials or waste; (iv) commercial or industrial waste handling or storage; (v) hillside location; (vi) outdoor manufacturing work areas; (vii) exposed animal confinement areas; and (viii) any other pollutant generating areas with the potential to be exposed to storm water runoff.

- Mitigation funding: Propose a funding mechanism for regional or watershed-based BMP solutions such as a storm water mitigation fund or "bank". Developers who obtain waivers from the numerical BMP design standards will in part fund the mitigation bank.

VII. Program for Development Construction

Background

Polluted storm water from construction sites often flow to MS4s and are discharged to receiving water bodies. Sediment is usually the main pollutant of concern although other pollutants that are generated from poor on site waste management practices can be a problem. These pollutants can impact natural waters by destroying habitats and causing siltation.

The objective of a program for development construction is to ensure that construction projects are (I) managed to minimize the potential for soil erosion and sediment transport, and (ii) to reduce pollutants generated during construction and post-construction.

program to comply with storm water regulations. Federal regulations do not limit the categories of development that may be subject to storm water mitigation requirements nor does it limit them to the nature of the approval action as defined under the California Environmental Quality Act (CEQA) or the National Environmental Protection Act (NEPA) [i.e. discretionary or ministerial].

The development planning program objective may be achieved by, (i) requiring the implementation of combinations of structural BMPs, treatment control BMPs, and source control BMPs, (ii) adopting an ordinance requiring the implementation of post-construction BMPs, (iii) providing a mechanism to ensure long-term maintenance and operation of treatment control and structural BMPs; (iv) revising General Plans and CEQA procedures to ensure that developments mitigate post-construction storm water runoff; and (iv) establishing measurable goals to evaluate successful program implementation.

Permittees have proposed to continue the following components,

- SUSMP requirements for development categories authorized by the State Water Resources Control Board Order No. 2000-11 and projects in environmentally sensitive areas;
- checklist to identify non-SUSMP projects that may require post-construction BMP controls and an urban storm water mitigation plan; and
- developer and contractor information program.

Deficiencies

The program is deficient because the SQMP does not:

- **CEQA Guideline Revisions**: Require completion of CEQA guidelines and checklist revision, if not already done so, for consideration and mitigation of the potential water quality impacts of new development and redevelopment no later than the date of permit adoption. This revision should have been done under the current permit term.

- **General Plans**: Require completion of revision to General Plans, if they have not already been done, to include watershed and storm water management considerations no later than date of permit adoption. This revision should have been done under the current permit term.

- **Developer Information**: The SQMP does not contain a program for Permittee to provide or make available to developers Development Planning Information that includes: (i) guidelines on BMP selection; (ii) guidelines on the siting and design of BMPs; (iii) Standard Urban Storm Water Mitigation Plans (SUSMPs); and (iv) guidance on post-construction storm water mitigation for non-SUSMP categories, no later than 90 days from the date of permit adoption.

- **Peak storm water discharge rate criteria:** Permittees need to establish numerical criteria to control post-development peak storm water runoff discharge rates to not exceed pre-development peak discharge rates where the discharge will result in potential downstream

- Maintain a database on industrial/ commercial facilities visited

Deficiencies

The ROWD does not include:

- **Inspection Program**: The industrial/ commercial educational site visit program should be upgraded to an inspection and enforcement program, since Permittees have had five years to gain experience. The U.S. EPA requires this change [see letter from Alexis Strauss, Director, Water Division, USEPA, Region IX to Dennis A. Dickerson, Regional Board Executive Officer, dated December 19, 2000, which is attached and was also distributed at the January 2001 EAC Meeting].

- **Performance:** An appropriate performance standard to measure successful implementation.

Possible Advancements

- Tracking database: Consider using the educational site-visits database to create a tracking database for the inspection and enforcement program. The database should be streamlined and a single standard format used for ease of updating and coordination. Consider a web-based database. See suggestions for modifying and augmenting the database that are contained in the CSWMP Report of Effectiveness [July 31, 2000].

- Inspection program: Submit an industrial/ commercial facilities inspection and enforcement program for consideration. Key components may include: (i) a proposed schedule of inspections with frequencies; (ii) a proposed performance standard to evaluate successful implementation; (iii) inspection schedule tie-in with the critical sources findings, characteristics of the watershed, and known impacts on the receiving waters; and (iv) specifics on the use of a comprehensive database for tracking and appropriate modifications and augmentations.

V. Program for Development Planning

Background

Post-construction mitigation of storm water runoff in areas undergoing new-development or redevelopment is necessary because storm water from these areas significantly affects receiving water bodies. Studies indicate that prior planning and design for the minimization of pollutants in post-construction storm water is the most cost-effective approach to storm water quality management.

The objective of a program for new development planning is to ensure that new developments and redevelopment are designed to minimize or prevent adverse impacts on water quality from storm water discharges. Municipalities are required to develop, implement, and enforce the

- **Performance:** An appropriate performance standard to measure successful implementation is not included.

Possible Advancements

- Trash collection: Collect trash and debris from open channels twice a year (Aug-Oct; March-May) before and after the storm season, and create a voluntary program for collection of trash in natural stream channels.

- Priority catch-basin threshold: Permittees may lower the priority catch-basin classification threshold to be 25 percent full from 40 percent full for clean out. Permittees may submit mapping (preferably as a GIS layer) of all catch basins in a municipality and identify which are city-owned/ county-owned, and which are priority for frequent cleaning.

- Priority Projects below 1 acre: For construction projects between 5,000 square feet and less than 1 acre, Permittees may develop a checklist to identify projects that will need to implement construction and post-construction BMP controls.

- Contractor Self-Inspections: Permittees may require that contractors perform self-inspections before and after every rainfall event with 0.25 inch or more predicted or actual precipitation.

IV. Program for Industrial/ Commercial Inspection

Background

The purpose of the industrial/ commercial inspection program is to conduct site visits to priority businesses (Phase 1, automotive service, gas stations, restaurants) and to evaluate on-site business practices to ensure compliance with local storm water regulations. Inspections of industrial/ commercial facilities and enforcement of storm water requirements are crucial to the success of the program and maintaining support among the public.

The objective of the industrial/ commercial program can be achieved by: (i) establishing a single electronic database of all facilities to be inspected and a schedule for inspection; (ii) distributing to industry and business owners specific brochures on appropriate BMPs to minimize storm water pollution; (iii) conducting site visits to evaluate compliance with local storm water ordinances; (iv) implementing appropriate enforcement procedures and actions; and (v) establishing measurable goals to evaluate successful program implementation.

Permittees propose to continue implementation of the following components of the program for industrial/ commercial business inspection:

- Conduct educational site visits and distribute brochures

III. Program for Public Agency Activities

Background

Municipal operations can be a potential source of pollutants to the MS4. These include pollutants: (i) that collect on streets, parking lots, open spaces, storage and vehicle maintenance areas, park and recreation lands, and (ii) that are generated from land development practices, flood management practices, storm sewer maintenance, pesticide application, and facilities maintenance.

The objective of a program for public agency activities is to ensure that public agencies: (i) minimize storm water pollution impacts from public agency activities; and (ii) hold their level of performance to an equivalent or better standard than private business/ industry.

Permittees propose to continue their implementation under the current permit term in the following subject areas:

- Sewage Systems Operations
- Public Construction Activities Management
- Vehicle Maintenance/Material Storage Facilities Management
- Landscape and Recreational Facilities Management
- Storm Drain Operation and Management
- Streets and Roads Maintenance
- Parking Facilities Management
- Public Industrial Activities (optional)
- Emergency Procedures

Deficiencies

The program proposed does not contain the following components:

- **Public construction projects**: Does not require public construction projects to implement construction and post-construction storm water controls similar to that required of private construction projects, including numerical mitigation criteria for post-construction BMPs.

- **Pesticide application**: Does not provide a standardized protocol for the routine and non-routine application of pesticides, herbicides (including preemergents), and fertilizers, and a prohibition on application during rain events (e.g. within one day of rain event forecasted to be greater than 0.25 inches except for application of preemergent herbicides; and after rain event where water is leaching or running or when water is running off-site).

- **Phase 1 facilities**: Does not demonstrate that it applies the stricter compliance standard based on technology or water quality criteria for Phase 1 facilities. Eliminate the current provision that allows publicly owned Phase 1 facilities to be covered under the MS4 permit. This provision has largely been unused during the current permit term and may cause some confusion because of the different compliance standard than for other MS4 programs.

- **Responsibility for surveys:** It is not clear who has lead responsibility in various segments of the County's and municipalities' storm drain system. Additional information is needed to clarify responsibilities.

- **Non-storm water discharge exemptions:** The Los Angeles County MS4 permit allows several categories of exemptions to the general prohibition on un-permitted non-storm water discharges. The Permittees have proposed adding several new exemption categories; e.g. unspecified discharges from emergency floor drains, and blood and human tissue from accident sites. However, no rationale and analyses of possible impacts to water quality are submitted to justify the addition of new categories to the prohibition exemption. In addition, several of the exemptions in the existing permit are subject to conditions; these conditions need to be clarified, and are subject to approval by the Regional Board Executive Officer.

- **Training:** Permittees propose to train employees in targeted positions to identify and report illicit discharges one year from the permit adoption date (page 28 of the ROWD, Part 4, E.2). However, because Permittees were required to possess training materials by March 1997, and the IC/ID model program was to be implemented no later than July 1999, the one-year time period appears unwarranted. All that may be required is refresher training. Pending clarification from the Permittees, Board staff intend to propose that the refresher training be conducted no later than 90 days from permit adoption date.

Possible Advancements

- Overview of IC/ID problems: Based on Annual Reports and the ROWD, it is not clear what types of discharges have been most problematic, and what type of response and/or corrective action has been required. It would be helpful for Permittees to provide additional information. This will facilitate the Regional Board and Permittees' efforts to enhance the IC/ID program, by focusing our efforts in the most problematic areas.

- Public reporting (including hazardous materials): Permittees may enhance the Public Reporting component of the program, including Hazardous Wastes Reporting, by posting records of illicit discharges and connections (i.e. those not subject to criminal investigation) on Permittee's websites.

- GIS database: The County of Los Angeles and several cities already have storm drain data mapped on a Geographic Information System. Consider digitizing the information for the entire MS4 permitted area and consolidation to one comprehensive GIS database.

II. Program to Eliminate Illicit Connections and Illicit Discharges (IC/ID)

Background

During dry weather, much of the discharge to storm drain systems consists of wastes and wastewaters from non-storm water sources. A significant amount of such discharges may be from illicit discharges or connections, or both. Illicit discharges may occur either through direct connections (deliberate or mistaken piping) or indirect connections (infiltration, spills, washdowns, or dumping). The objective of the Permittees' proposed IC/ID program should be to detect illicit connections and illicit discharges (including unpermitted non-storm water discharges) to the storm drain system, and to promptly eliminate such discharges and connections.

The IC/ID elimination program objective may be achieved by: (i) mapping locations of outfalls of the MS4 and the names and locations of all waters of the U.S. that receive discharges from the outfalls; (ii) adopting a storm water/ urban runoff ordinance to prohibit unauthorized non-storm water discharges into the MS4, and implementing appropriate enforcement procedures and actions; (iii) implementing a program to detect and eliminate non-storm water discharges to the MS4, including illegal dumping; (iv) educating public employees, businesses, and the general public about the dangers associated with illegal discharges and improper disposal; (v) establishing a public reporting hotline or other mechanism to report illicit discharges and illegal dumping; and (v) establishing measurable goals to evaluate successful program implementation.

In the ROWD, the Permittees propose to continue implementation of IC/ID program elements, listed below, at a level of effort similar to that undertaken for the previous five years:

- Illicit Discharge Elimination
- Illicit Connection Elimination
- Public Reporting of Illicit Discharges, including Hazardous Substances

Deficiencies

The proposed IC/ID program does not specify important performance standards to detect and eliminate illicit connections and discharges. For example:

- **Progress in surveying the storm drain system:** Under the IC/ID program in existing permit, Permittees have been screening the storm drain system for illicit connections and discharge during regularly scheduled maintenance activity. But the proposed program does not discuss how much of the storm drain system has been surveyed to date, what methods have been used, and how much remains to be surveyed. Performance standards are needed measure progress on this program element.

- Business Outreach
- School Education K-12
- 1-888-CLEAN-LA hotline and website
- Project Pollution Prevention identifying signature
- Research to target audiences and allocate budget resources accordingly.
- Coordination with other pollution prevention programs such as solid wastes recycling and used oil recycling.

Deficiencies

The PIPP implemented by Permittees under the current permit term was well formulated and objectively implemented. However, the PIPP program for the next permit term appears deficient as indicated below:

- **Targeted Outreach**: PIPP program for the next permit term is not upgraded to implement targeted public education programs that draw on the results of the integrated monitoring program.

- **Site Visit Program**: The commercial/ industrial educational site visits program is not upgraded to an inspection and enforcement program [see comment under IV. Program for Industrial/Commercial Inspection], and the education/ participation component of the program separated.

- **Performance**: A performance standard for each Permittee, in addition to a countywide performance standard, has not been provided.

Possible Advancements

- Targeted Outreach: Use the results from the completed 5-year PIPP and monitoring program in the current permit term to identify target audiences for special outreach (such as zinc, copper, and TSS generating facilities in the Ballona Creek watershed). Materials and information specific to known problem areas should be developed to target specific audiences. The results of research conducted during the current permit term should be used to augment the PIPP through the next permit term.

- Business education/ participation: Revise the business/ industrial outreach component to continue business sponsorships, providing easy-to-understand brochures, consulting assistance [e.g. City of Los Angeles Environmental Affairs HTM program] etc.

- Cost-sharing: The County of Los Angeles should retain its existing PIPP partnerships and continue to forge new ones. The budget for the program the last five years was approximately U.S. $5.2 million. The County indicates that an estimated 3 - 5 times that amount may be needed to support an adequate PIPP, partially due to the increase in advertising costs. The proposed PIPP budget for the new permit term is $7.5 million. Permittee contributions on pro-rate basis may be considered to fill the funding gap.

REPORT OF WASTE DISCHARGE

MUNICIPAL STORM WATER AND URBAN RUNOFF DISCHARGES
WITHIN LOS ANGELES COUNTY, AND
THE CITIES OF LOS ANGELES COUNTY
[EXCLUDING THE CITY OF LONG BEACH]

REVIEW AND COMMENT

I. Program for Public Information and Participation

Background

An informed and knowledgeable community is crucial to the success of a storm water quality management program. Changing public patterns of behavior that contribute to storm water pollution through education is a significant challenge. In addition, communities can play an important role in successful implementation of the storm water program when given the opportunity to participate.

The objective of a Public Information and Participation Program (PIPP) is to: (i) increase awareness among the public to build broad support for the program; (ii) increase compliance as the public become aware of the personal responsibilities expected of them for program success; and (iii) reinforce successful public education and participation strategies.

The objective of the storm water PIPP may be achieved by: (i) distributing brochures or fact sheets for general public and specific audiences such as business and industry; (ii) propagating alternative information sources through websites, public fairs, bus-stop posters, refrigerator magnets, bumper stickers, and placemats; (iii) stocking a library of educational materials for community and school groups; (iv) promoting volunteer citizen educators to educate the public and schools; (v) implementing a program for K-12 school-age children; (vi) stenciling storm drains with appropriate messages; (vii) installing a storm water hotline for information and citizen reporting; (viii) providing economic incentives to citizens and businesses; (ix) conducting public meetings/ citizen panels to receive input and disseminate information; (x) supporting volunteer water quality monitoring groups; (xi) supporting community clean-ups; (xii) supporting citizen watch groups; (xiii) encouraging vicinity adoption programs to keep areas free of storm water pollutants; (xiv) and establishing measurable goals to evaluate successful program implementation.

Permittees propose to continue the following PIPP components,

- Advertising - traditional and non-traditional
- Media Relations
- Corporate Partnerships
- Special Events

	5. Specify a clear frequency and schedule for the inspections 6. Standardize the database for scheduling and tracking of activities performed, including constant updates of facilities list, inspections, follow-up inspections and enforcement activities 7. Coordinate with RB activities 8. Incorporate suggestions made in the *CSWMP Report of Effectiveness* 9. Specify clearly defined measurable goals/performance standards, by identifying a baseline, a defined target and milestones to be achieved during the 5-year life of the permit 10. Include enforcement criteria for sites under the State General Construction Permit: Permittees must first enforce and complete followup inspections under their legal authority; then escalate to Regional Board for additional enforcement (except in situations when RB or USEPA involvement is solicited 11. Tiered training timetables: expedite to six months for cities less than 1 million population, one year for cities with population over 1 million
Development Planning	1. Complete revisions to CEQA guidelines to mitigate storm water runoff from new developments and redevelopment. 2. Complete revisions to General Plans to include storm water and watershed considerations. 3. Implement a program to make available to developers development planning information such as guidelines on siting and design of BMPs etc. 4. Specify peak discharge rate criteria to control post-development peak discharge rates. 5. Add performance standards.
Development Construction	1. Accelerate local enforcement 2. Add performance standards
Monitoring	1. Trash Monitoring: Implement a baseline trash-monitoring program for watersheds not presently listed for impairment from trash. 2. Critical Source Characterization: Implement a program to characterize critical sources that contribute a CWA 303(d) listed pollutant in watersheds 3. Treatment Control BMP Effectiveness: Develop program to evaluate the effectiveness of structural and treatment control BMPs at critical sources and as watershed improvement projects.

SUMMARY OF COMMENTS

MUNICIPAL STORM WATER AND URBAN RUNOFF DISCHARGES
WITHIN LOS ANGELES COUNTY, AND
THE CITIES OF LOS ANGELES COUNTY
[EXCLUDING THE CITY OF LONG BEACH]

Program	Key Enhancements Proposed for Renewed Permit
Public Information and Participation	1. Targeted Outreach: Implement targeted programs that draw on results of the integrated monitoring program 2. Site Visit Program: - Upgrade commercial/industrial educational site visits to inspections - Revise outreach component to continue business sponsorships 3. Performance: Provide performance standards for each Permittee
IC/ID Elimination	1. Surveying the storm drain: – Prioritize, and add a performance measure – Clarify responsibilities among the County and municipalities 2. Non-storm water discharges exempt from prohibition: – For proposed new categories, provide a supporting rationale and an analysis of water quality impacts – For conditioned exemptions, clarify conditions (and obtain Executive Officer approval 3. Training: Expedite
Public Agency Activities	1. Public Construction Projects – Require public construction projects 1 acre or more to implement construction and post-construction storm water controls 2. Pesticide Application – Provide a standardized protocol for the routine and non-routine application – Prohibit application during rain events forecasted to be greater than 0.25 inches 3. Phase 1 Facilities – Demonstrate that such facilities apply the stricter compliance based on technology or water quality for Phase 1 facilities 4. Performance – Include appropriate performance standard to measure successful implementation
Industrial and Commercial Inspections	1. Develop a stand-alone program component (business educational should remain under PIPP) 2. Include Phase I (including sites with NOIs under State Permit), vehicle repair shops, vehicle body shops, vehicle parts and accessories, gasoline stations, restaurants 3. Emphasize issues specific to the watershed and receiving waters impairments by targeting known or potential sources or sectors (as a way to prioritize the schedule) 4. Continue critical sources identification process to bring new categories of facilities, if identified, in to the system and address them through a prioritization process or as designated by WMC

Commercial Inspection, (iii) Development Planning, (iv) Development Construction, Public Agency Activities, (v) Public Information/ Education, and (vi) Monitoring. Our comments are in the attachment (and, for your convenience, summarized in a table).

Please note that this review does not in any way restrict our privilege to bring up for discussion additional subject matters during the permit reissuance process, that have not been commented upon herein. We intend to conduct a series of work-group meetings to receive input over the coming months, with Permittee representatives and interested persons, to assist us in developing permit requirements.

While our comments, which accompany this letter, pertain to the ROWD for Los Angeles County and incorporated cities for the MS4 permit reissuance, the comments may also be deemed applicable to common elements in the separate ROWD and sample permit submitted concurrently by you and the City of Santa Clarita for the Santa Clara Watershed.

If you have any questions, please do not hesitate to contact me at (213) 576-6510 or Dr. Xavier Swamikannu at (213) 576-6654.

Sincerely,

ORIGINAL SIGNED BY

Dennis A. Dickerson
Executive Officer

Enclosure

cc: Jorge Leon, Office of Chief Council, State Water Resources Control Board
John Youngerman, Storm Water Section, State Water Resources Control Board
Eugene Bromley, CWA Standards and Permits Office, USEPA Region IX
Laura Gentile, CWA Compliance Office, USEPA Region IX
Mustafa Ariki, Watershed Management Division, County of Los Angeles Department of Public Works
Permittees – See attached Distribution List

California Regional Water Quality Control Board

Los Angeles Region

(50 Years Serving Coastal Los Angeles and Ventura Counties)

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640
Internet Address: http://www.swrcb.ca.gov/rwqcb4

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

March 2, 2001

Harry W. Stone
Director of Public Works
County of Los Angeles, Department of Public Works
900 South Fremont Avenue, P.O. Box 1460
Alhambra, CA 91802-1460

REVIEW OF THE REPORT OF WASTE DISCHARGE FOR THE REISSUANCE OF THE MUNICIPAL STORM WATER PERMIT FOR LOS ANGELES COUNTY AND CITIES IN LOS ANGELES COUNTY.

Dear Mr. Stone:

Thank you for submitting, on January 31, 2001, the Report of Waste Discharge (ROWD) for reissuance of the Los Angeles County Municipal Storm Water Permit (Los Angeles County MS4 permit), and a sample MS4 permit. The County of Los Angeles and Cities (except the City of Long Beach) are covered under Board Order No. 96-054, which expires on July 30, 2001.

Federal regulations at 40 CFR 122.21(d) require that the ROWD be submitted at least 180 days prior to the MS4 permit expiration date and that the permitting authority respond as to its completeness. The US Environmental Protection Agency (USEPA), in addition, has issued guidelines for review and consideration of MS4 permit reapplications. (*61 Fed Reg. 41697*).

The purpose of our review and comment is to: (i) identify possible gaps in the application, (ii) suggest potential areas for improvement in program implementation and the Storm Water Quality Management Plan (SQMP), (iii) recommend a direction in monitoring to emphasize identification and control of pollutant sources and eliminate the causes of receiving water impairment, (iv) invite input on objective measures of successful program implementation (i.e. performance standards), and (v) highlight subject areas for further discussion during permit reissuance. Our comments are also intended to communicate Board staff strategy to update the Los Angeles County MS4 permit in accordance with current laws and policies and provide Permittees the opportunity to provide any additional information that will assist Board staff in permit development. During permit development, we intend to look at the sample MS4 permit submitted by Permittees for useful content, but it will not form the basis for developing permit requirements.

So far as the ROWD and accompanying Storm Water Quality Management Plan (SQMP) did not include better and improved Best Management Practices (BMPs) for the next permit term, as required under USEPA's Interim Permitting Policy (*61 Fed. Reg. 43761*), the application is incomplete. Permittees did not demonstrate that they evaluated the monitoring results and model program implementation experience from the current permit term and utilized them to propose enhancements to the SQMP for the next permit term. As a result, we identified several apparent deficiencies in this initial review. Our review of your reapplication evaluated the following areas of the Los Angeles County MS4 program for consistency with federal and state storm water regulations: (i) Illicit Connection and Illicit Discharge Elimination, (ii) Industrial

WMAPs: The requirement to develop detailed Watershed Management Area Plans (WMAPs) is likely to be eliminated, because WMAPs submitted with the ROWD did not demonstrate that municipalities intend to tailor implementation to accommodate watershed characteristics. Permittees are invited to submit a separate list of watershed specific programs that are different than the countywide baseline for consideration [or reference the WMAP page]. Such sub-programs may de-emphasize some countywide program components, strengthen others, or offer a wholly new augmentation.

TMDL Provisions: The tentative permit is likely to include provisions that will require Permittees to: (i) modify the SQMP within 180 days of approval of a TMDL, pursuant to the procedures established under state and federal law and regulations, and (ii) implement a program to achieve pollutant load reductions as specified in the TMDL.

Proposed Renewal Schedule (as of March 2, 2001)

02-14-01: Meet with Executive Advisory Committee (EAC)

03-02-01: Issue ROWD comment letter

03-14-01: EAC meeting , 1:30 at LA County Department of Public Works (DPW) in Alhambra

03-15-01: "Preliminary" draft/staff report ready for review

03-22-01: Meet with subcommittee of permittees to review preliminary draft

04-02-01: Issue first draft of permit/staff report (containing technical basis)

04-11-01: EAC meeting, 1:30 at LA County DPW in Alhambra

04-18-01: Conduct workshop - location to be determined

04-26-01: Brief Board on renewal process at Board meeting

05-08-01: Comments on first draft due

05-09-01: EAC meeting, 1:30 at LA County DPW in Alhambra

06-01-01: Issue final draft of permit and staff report, including responses to initial comments

06-13-01: EAC meeting, 1:30 at LA County DPW in Alhambra

07-06-01: Final written comments due

07-11-01: EAC meeting, 1:30 at LA County DPW in Alhambra

07-18-01: Issue "Response to Comments" to public and to Board

07-26-01: Propose adoption at Board meeting

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For questions or comments, please contact Webmaster

Municipal Storm Water Permit
Los Angeles County and Cities

Presentation to the Southern California Council of Governments
April 17, 2001

Xavier Swamikannu
California Regional Water Quality Control Board, Los Angeles Region

Storm Water Program Background

- Clean Water Act Amendments - 1987
- Municipal storm water (MS4) Permits
  - » LA County issued in 1990; Reissued 1996 ; Scheduled for Reissuance 2001
  - » Long Beach issued 1999;
- Statutory standard - reduce pollutants to the Maximum Extent Practicable (MEP)
- Water quality standards must be attained where required by regulatory agency

Federal Regulations

- Reduce pollutants from residential/ commercial areas (40 CFR 122.26 (d) (2)(iv)(A))
- Control illicit connections and illegal dumping (40 CFR 122.26 (d)(2)(iv)(B))

Federal Regulations

- Control pollutants from municipal and industrial facilities (40 CFR 22.26 (d)(2)(iv)(C))
- Control pollutants from construction sites (40 CFR 22.26 (d)(2)(iv)(D))
- Implement and enforce controls for new development / significant redevelopment 40CFR 122.26 (d)(2)(iv)(A)(2)

Municipal Storm Water Program

- Public Agency Activities
- Development Planning / Construction
- Illicit Connections / Discharges
- Public Education / Information

Municipal Storm Water Monitoring Program

- Critical Sources Characterization
- Mass Emissions Monitoring
- BMP Effectiveness Evaluation
- Receiving Water Impact Assessment

Proposed Reissuance Schedule

- » Meetings with Permittee sub-group [Feb-April]
- » Release First Draft [April 13]
- » Staff Workshop [April 24]
- » Meetings to review comments [May-June]
- » Issue Final Draft and Response to Comments [June 8]
- » Propose adoption at Public Hearing [July 26]

Proposed Program Enhancements

Public Information and Participation Program

- » Outreach specific to pollutant of concern
- » Corporate Outreach
- » Business Assistance Program

Industrial/ Commercial Inspection

- » Inspection [rather than site-visits]

Proposed Program Enhancements (cont'd)

Development Planning

- » Peak discharge control to protect habitat
- » Numerical mitigation criteria not applied to hillside developments less than 10,000 sq. ft.
- » Flow based BMP design criteria added
- » Gas stations subject to mitigation if threshold [100 or more ADT] exceed
- » Industrial/ Commercial threshold [to 40,000 sq. ft.]added
- » General Plan update [five years]
- » Develop Technical Guidance

Proposed Program Enhancements (cont'd)

Development Construction

- » Specific requirements for projects 1 acre or more

Public Agency Activities

- » Apply same standard as private construction
- » Apply same standard as private development planning
- » Obtain coverage suspended under ISTEA for all public industrial activity/ construction projects [March 10, 2003]

Proposed Program Enhancements (cont'd)

Illicit Connection/ Discharge Elimination

- » Priority Screening

Monitoring Program

- » Toxicity Reduction Evaluations
- » Tributary/ Source Identification
- » Urban Stream Bioassessment
- » BMP Effectiveness Study

Summary

- » Third generation
- » Basic model programs already in place
- » Consistent with U.S. EPA's 'Interim Permitting Strategy'
- » Total Maximum Daily Load (TMDL) component
- » Builds on success
- » Remedies shortcomings

2001 DRAFT NPDES PERMIT

L.A.C.F.C.D., LOS ANGELES COUNTY AND INCORPORATED CITIES

COMPARISONS WITH THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT'S 1996 NPDES PERMIT'S REPORT OF WASTE DISCHARGE DATED FEBRUARY 1, 2001

ITEM OF COMPARISON

STREET SWEEPING

DRAFT PERMIT

The draft permit has a tiered-street sweeping program with the highest frequency of street sweeping of at least four times per month.

L.A. BASIN ROWD

The ROWD does not have a tiered-street sweeping program. Instead, we require curbed streets to be swept approximately once per month.

DPW

CATCH BASIN CLEANING

DRAFT PERMIT

A catch basin must be cleaned anytime that it is 40% full.

L.A. BASIN ROWD

Only priority catch basins must be cleaned once they are 50% full. All other catch basins need to be cleaned once per year.

DPW

PUBLIC INFORMATION AND PARTICIPATION PROGRAM

DRAFT PERMIT

The Principal Permittee shall insure a minimum of 35 million impressions per year.

L.A. BASIN ROWD

Each Permittee shall ensure a minimum of 50 million impressions per year (see Performance Standards).

DPW

R0001776

INDUSTRIAL/COMMERCIAL INSPECTION PROGRAM

DRAFT PERMIT

This is an inspection program that requires enforcement.

L.A. BASIN ROW

This is an educational site visit program that does <u>not</u> require enforcement.

R0001777

DPW

DEVELOPMENT PLANNING PROGRAM

DRAFT
PERMIT

The Standard Urban Stormwater Mitigation Plan (SUSMP) applies to all new projects.

L.A. BASIN
ROWD

The SUSMP applies to discretionary and redevelopment projects only.

R0001778

DPW

CONSTRUCTION SITES PROGRAM

DRAFT
PERMIT

Local Stormwater Pollution Prevention Plans (SWPPPs) are required for construction projects that will result in soil disturbance of 1 acre or more.

L.A. BASIN
ROWB

SWPPPs are required for priority construction projects that will result in a soil disturbance of 2 acres or more.

R0001779

DPW

ITEM OF COMPARISON

ILLICIT CONNECTIONS AND DISCHARGES
EXEMPTIONS

DRAFT PERMIT

The State Board must permit any stream diversions.

L.A. BASIN ROWD

The first six exempt discharges of the ROWD are similar to the Draft Permit's exempt discharges.

DPW

ILLICIT CONNECTIONS AND DISCHARGES (cont'd)
EXEMPTIONS SUBJECT TO CONDITIONS

DRAFT PERMIT

The draft permit lists decorative fountains and sidewalk rinsing as conditional exemptions.

L.A. BASIN ROWD

In addition to the draft permit conditional exemptions L.A. Basin's ROWD lists the following ones:

1. *Discharges from potable water sources,*
2. *Grading drains,*
3. *Emergency floor drains,*
4. *Street washing,*
5. *Wash water runoff from the cleaning of fire fighting vehicles,*
6. *Sidewalk washing, and*
7. *Wash water runoff of blood and other human tissues from the cleaning of accident sites or accidental spills.*

PUBLIC AGENCY ACTIVITIES-FUELING AREAS & MAINTENANCE AREAS

DRAFT PERMIT

Prohibition of untreated stormwater runoff from fueling areas and repair/maintenance areas for vehicle maintenance and repair facilities does not differentiate between new and existing facilities.

L.A. BASIN ROWD

Prohibition of untreated stormwater runoff from fueling areas and repair/maintenance areas for vehicle maintenance and repair facilities only applies to new facilities.

PUBLIC AGENCY ACTIVITIES
SAW-CUTTING

DRAFT
PERMIT

Prohibition of street saw-cutting wastes from entering the storm drain at all times.

L.A. BASIN
ROWD

Avoidance of street saw-cutting and paving during storm events that will carry the debris.

DPW

RECEIVING WATER LIMITATIONS

DRAFT
PERMIT

Impairment of a receiving water body by MS4 discharges <u>need not</u> be substantiated with scientific research.

L.A. BASIN
ROWD

Impairment of a receiving water body by MS4 discharges <u>need to</u> be substantiated with scientific research.

R0001784

DPW

TRAINING

DRAF
PERM

Generally requires Permittee's staff to be trained within three to six months of permit adoption.

L.A. BASIN
ROWD

Generally requires Permittee's staff to be trained within one year of permit adoption.

PESTICIDES/HERBICIDES

DRAFT
PERM

Application of pesticides/herbicides <u>cannot</u> be done during rain events.

L.A. BASIN
ROWD

Application of pesticides/herbicides <u>may not</u> be applied if storm event results in runoff.

DPW

TMDLs

"The Principal Permittee shall modify the Stormwater Quality Management Plan (SQMP) to comply with waste load allocations developed and approved pursuant to the process for the designation and implementation of Total Daily Maximum Loads (TMDLs) for impaired water bodies."

This permit does not contain language that requires the revision of the Stormwater Quality Management Plans (SQMPs) when a new TMDL regulation is adopted.

2001 DRAFT NPDES PERMIT

END OF PRESENTATION

Watershed Management: A New Approach for Local Governments

Local governments that use a watershed approach recognize that the protection and restoration of water resources requires multi-jurisdictional cooperation and stakeholder involvement. This approach is especially needed to address the issues of non-point sources of pollution that result from urban and agricultural run-off. The watershed approach depends on a specific geographic focus that follows nature's boundaries, strong science for the tools and resources needed for restoration and protection, and partnerships that transcend political, economic and social boundaries.

Local government officials that recently attended watershed conferences, sponsored by ICMA at the 7th Annual Virginia Watershed Conference and the Southeast Watershed Forum, had the opportunity to share the benefits of their watershed management efforts. Officials from Manatee County, Florida, a large growing county with an estimated population of 234,500, described their watershed approach that incorporates land use planning, regulation, restoration, acquisition and partnerships to manage the community's increasing demands for water. Some of the initiatives the county has been a part of include the storage and recovery of water from aquifers as part of a four county initiative, and a local land acquisition program where 28,000 acres have been bought and protected by the county to date. In all programs, outreach to the public has been a critical element in maintaining local support of water protection programs.

Hall County, Georgia is also taking an integrated approach to watershed management that creates partnerships among local, state, and regional parties. These partnerships have become important in developing local solutions to water quality and quantity issues. The county has worked in cooperation with various partners, such as with the City of Gainesville and the upper Chattahoochee River Basin Group.

The City of Williamsburg is using a regional watershed approach to stormwater management. The City adopted its Stormwater Management Plan in 1992 and included the use of City owned Regional Best Management Practices (BMPs), and a Stormwater Management Ordinance. The city selected regional BMPs because they promoted better land use, provided better maintenance mechanisms, and were more aesthetically pleasing and economical. The City developed its Regional Stormwater Management Program based on regional ponds and reserved open space.

Cities and counties continue to lead the way in demonstrating the environmental, social, and economic benefits of watershed management. ICMA provides resources and helps share the lessons among local governments through case studies, conferences, and Web sites. To learn more about ICMA's Water programs, contact Barbara Yuhas at 202/962-3539 or *byuhas@icma.org*.

Barbara Yuhas is director of Natural Resources Programs, ICMA, Washington, D.C.

Part__. REGIONAL/SUBREGIONAL IMPLEMENTATION PROGRAM

A. The Regional Board encourages the utilization of groups of permittees and intergovernmental programs for the development and implementation of storm water programs. This is the most cost-effective use of public resources when implementing the NPDES Permit, such that the tax burden on individual property owners and the fiscal impact on existing government services will be minimized.

Intergovernmental coordination involves combining the resources of various permittees, cities, Councils of Government, the County of Los Angeles, the Flood Control District and other agencies, such as Caltrans to implement the NPDES Permit in accordance with maximum extent practicable standards.

Examples of intergovernmental programs include the improvement of regional or subregional retention basins, pump stations, storm drains inserts, storm drain clarifiers, as well as the implementation of storm water programs and other treatment facilities approved by the Executive Officer. The Board especially encourages the use of multi-purpose open space facilities to implement the NPDES Permit and regional BMP's, such as regional parks and athletic fields designed to treat storm water.

This section specifically recognizes that urban storm water may flow over many governmental jurisdictional boundaries prior to reaching waters regulated under the Clean Water Act and the Porter Cologne Act, and that storm water may pass through local and regional facilities, including storm drain pipes and retention facilities. The following regulations are designed to encourage all levels of government, from local cities, Los Angeles County, State and Federal agencies to form governmental groups to resolve storm water issues.

Regional and Subregional Implementation Programs (RSIP) provide the framework to implement the NPDES Permit and TMDL's in manner consistent with Federal, State and local regulations. Implementation of the RSIP by the per

B. Regional/Subregional Implementation Program

A Regional/Subregional Implemenation Program (RSIP) may be submitted by the intergovernmental organizations, as an alternative to separate NPDES Permit requirements or TMDL's as required of each government entitity. In order to comply with the terms of the individual NPDES Permit and TMDL's. The RSIP's will contain the following:

1. Identification of the Intergovernmental Group (IG)

The application for the RSIP shall identify the Intergovernmental Group (IG) who will be subject to the RSIP. The application shall identify the lead agency who will be responsible for coordination of the IG. The

application shall identify if the IG has any special authority, such as joint powers authority.

2. Implementation Plan Components

The application shall consist of the following components and shall be accompanied with a detailed description of the programs and facilities the IG will utilize, modify or construct in order to comply with the NPDES Permit or TMDL.

a) Administrative Component – The Implementation Program includes an administrative component describing any new ordinances, resolutions or policies and staffing necessary for implementation.
b) Program Component – The Implementation Program may include revised existing and new programs necessary for implementation.
c) Capital Improvement Program – The application may include a capital improvement program, detailing both minor and major facilities that would be constructed for implementation.
d) Time Schedule – The application shall be accompanied with a time schedule for the implementation of the various components, programs and facilities.
e) Financing Program – The application shall be accompanied with a financing program explaining how the IG intends to fund the programs and facilities. The financing program would outline any State or Federal financial assistance, new fees, taxes or assessments. The financial program must document baseline services, such as public safety and public works. The financing program shall indicate if the IG is required to impose new fees, assessment or taxes to implement the RSIP.

3. Voter Approval of Financing Program

It is recognized that a public vote may be required to impose new fees, assessments or taxes to implement the RSIP. If determined that vote is required, the application shall be accompanied by an election schedule of when the IG will schedule the new fees, taxes or assessments for a vote of the electorate. Additional State required programs, in excess of the available resources as determined by the local electorate, shall only be implemented when State or Federal funding is made available.

4. Mitigation Fees – Regional Storm Water Impact Fees

The IG may design a regional fee mechanism, to deal with waivers that are granted under the NPDES permit and applicable TMDL's, where a waiver for impracticability or a threat to ground water has been granted. The regional fee should also take into account situations where off-site fees are required due to loss of environmental habitat should on-site mitigation be required. The regional fee may also be used as a levy on new development in order to provide a funding mechanism for the

installation of regional/subregional storm water treatment facilities and other RSIP capital improvements.

Pursuant to Government Code Section 66000-66011, the IG must establish the following:

a. Identify the purpose of the fee.
b. Identify the use to which the fee is to be put (e.g. public facilities or programs must be identified).
c. Determine how there is a reasonable relationship between the fee's use and the type of project on which the fee is imposed.
d. Determine there is a reasonable relationship between the need for the program or facility and the type of project on which the fee is imposed.

The IG must also deposit, invest, account for and expend the mitigation fee pursuant to Government Code Section 66006. The IG must also make findings once each fiscal year regarding any portion of the mitigation fee remaining unexpended or uncommitted pursuant to Government Code Section 66001(d).

The IG must also refund any unexpended or uncommitted mitigation fee after five years receipt (Government Code Section 66001(e). The IG must also adopt a plan indicating on which capital improvement or program the fee will be expended (Government Code Section 66006(b).

5. RSIP Review Standards

The Executive Officer shall utilize the following standards to review and approve individual RSIP applications:

a. The RSIP significantly complies with the intent of the NPDES Permit and applicable TMDL.
b. The RSIP has incorporated to the maximum extent practicable current programs and technologies.
c. The RSIP will be implemented in manner consistent with the time periods imposed by the NDPES Permit and applicable TMDL.

6. Amendments to the RSIP

The Executive Officer may approve or disapprove of amendments to the RSIP. The IG must provide documentation that:

a. The proposed amendment will meet or exceed the objectives of the original NPDES or TMDL component, program or schedule; or
b. The fiscal burden of the original NPDES or TMDL component, program or schedule is substantially greater than the proposed amendment and does not achieve a substantially greater improvement in water quality.

The Executive Officer may eliminate any NPDES or TMDL component or program, if the IG can document that:

a. The component or program is not technically feasible and no substitute is available, or
b. The cost of implementation outweighs the benefits to the receiving waters.

7. Administrative Review Process

The administrative review process formalizes the procedures for review and acceptance of the RSIP and any amendments to an approved RSIP. In addition, it provides a method to resolve differences in interpretation of the RSIP components between the Executive Officer, the Regional Board and the IG.

RSIP Application and Amendments to an Approved RSIP

a. Determine Application Complete – The Executive Officer shall notify the IG in writing within 30 days after the filing of the RSIP if the application has been determined to be complete. If determined to be incomplete, the letter shall outline the items that the IG will need to supply in order to complete the application.
b. Resubmittal of the Application – The Executive Officer shall notify the IG within 30 days after resubmittal of the application. The 30-day review period shall apply to all resubmittals.
c. Approval or Disapproval of the RSIP – The Executive Officer shall have 60 days in which to either approve or disapprove of the RSIP. The IG shall be notified in writing of the reasons for either approval or disapproval.
d. Appeals to the Regional Board – The IG shall have 30 days from receipt of the Executive Officer's letter to appeal the action of the Executive Officer. The IG shall notify the Board in writing of the reasons for the appeal and any action that the IG wants the Board to consider.
e. Appeal Hearing – The Executive Officer shall set the appeal for a Board public hearing item, within 60 days receipt of the written appeal from the IG. The appeal hearing date may be extended upon mutual agreement between the Executive Officer and the IG.
f. Interpretations of the RSIP Components – The IG may file a written appeal to any determination made by the Executive Officer in implementing the RSIP. The Executive Officer shall set public hearing regarding the Board under Section Five, Subsection B, 7e. above.

8. RSIP Enforcement/ Legal Indemnity

Violations of any provision of an approved RSIP shall be subject to the provisions of Part 6, Section O, Standard Provisions of this Permit. In

order to encourage and to provide an incentive to cost-effective regional/subregional programs, the State will provide legal indemnity to the IG, when civil litigation arises in the good faith implementation of an approved RSIP.

Coalition for Practical Regulation

Arcadia
Artesia
Bellflower
Bell Gardens
Burbank
Cerritos
Commerce
Compton
Diamond Bar
Downey
Hawaiian Gardens
Industry
Irwindale
La Canada~Flintridge
La Mirada
Lakewood
Lawndale
Monrovia
Montebello
Norwalk
Palos Verdes Estates
Paramount
Pico Rivera
Pomona
Rancho Palos Verdes
Rosemead
Santa Fe Springs
San Gabriel
Sierra Madre
Signal Hill
South Gate
Vernon
Walnut
Whittier

Regional/Subregional Implementation Programs

The CPR Amendment to the NPDES Permit

What is the Coalition and what the Coalition's Goals?

- Coalition for Practical Regulation is a group of 35 Los Angeles County cities, representing 1.7 million residents, committed to finding cost-effective regional solutions to improve storm water quality.

- The Coalition cities are concerned about the high cost of implementing new storm water programs. The cities are equally concerned over "unfunded" mandated storm water programs, which could result in the reduction of existing city programs, if new revenues are not provided. The cities and Los Angeles County have been hit hard by the State "take away" of local property taxes – now totaling $1.8 billion annually.

- The Coalition believes that all the stakeholders, including the cities, Los Angeles County and the State, need to find practical and cost-effective solutions to storm water quality problems.

Does the Draft NPDES Permit propose regional solutions?

- The Draft Permit says that cities "will work cooperatively" to control storm water pollution from one jurisdiction to another through "cooperative agreements." The Draft Permit provides a limited framework on how this cooperation is to occur. (Page 6 #17)

- The Draft Permit has only a few examples of regional approaches – such as public information programs and a "Countywide Hotline" for reporting complaints. The Draft Permit discusses the need for cities to "coordinate regional and local outreach and education to reduce duplication of efforts". (Pages

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- 21-25, Part 4A). The Draft permit provides no further guidance on other regional cost-effective programs.

- The Draft Permit in principal "supports a Watershed Management Approach", to encourage cost-effective programs, through "interagency agreements". However, the permit is vague on how these principals are translated into government action. (Page 9, #32)

- "Watershed Management" is limited in the Draft to committees comprised of various cities in each of the five watersheds. These committees are designed to collect information and to further the proposal to force the cities to perform the State's Industrial and Commercial storm water inspection and enforcement program. The committees are to exchange information, prioritize pollution control efforts, monitor implementation annually and identify additional sites for inspections (Pages 15-16, Part 3A,B&C).

- The Draft requires that the cities amend the Storm Water Quality Management Plan (SQMP) to "incorporate regional provisions, such as "watershed specific requirements". However, the five watersheds are huge geographic areas, over 3,100 square miles in the entire area. They have different topographies, infrastructures, development patterns and needs. The Draft Permit should provide flexibility for cities in the various watersheds to join together in smaller more manageable groups to address specific permit requirments. (Page 17, Part 3F)

- The Draft Permit has no mechanism that requires that other government agencies work with the cities to implement storm water programs. Examples would include programs that combine resources with Caltrans, various school districts, community college districts, other special districts and federal facilities.

The CPR Amendment Provides a Management Framework for Regional/Subregional Solutions to Storm Water Quality Issues

- The Coalition proposes a specific amendment to the Draft NPDES Permit that encourages groups of cities to form partnerships with Los Angeles, County, the State and other agencies to plan and implement regional/subregional storm water programs.

- Known as the RSIP - or Regional/Subregional Implemenation Program – the RSIP provides the framework to encourage regional cooperation for implementing clean water goals and programs. RSIPs would promote cost-effective solutions, with problem solving groups of cities and other agencies

- Cities have a good track record of solving regional issues in a cost-effective manner, in problem solving groups. Examples include local government's joint response to natural disasters such as wildfires and earthquakes.

- The RSIP will encourage government to coordinate and combine limited resources, in order to implement programs with the least financial effect on residents, businesses and taxpayers.

How does the RSIP work? What are its Components?

- Cities and other agencies will "self-form" into groups with common interests, issues, drainage watersheds and shared storm water infrastructure. Cities will still be responsible for permit compliance, however joint efforts will provide consistent and efficient program implementation.

- Once the groups of cities and other agencies "self-form", they will submit a Regional/Subregional Impementation Program to the Regional Board. The RSIP would be a storm water master plan, based on the application of the maximum extent practicable standard (MEP) to storm water programs. The MEP is what is technically achievable and financially responsible, non-numeric criteria applied to all municipal storm water discharges through the implementation of best management practices.

- The RSIP would be approved by the Regional Board and would consist of four main components:

    1. Administrative Programs – such as joint illicit connection removal programs;
    2. Capital Improvements and Program Elements – such as regional storm water treatment facilities or programs;
    3. Time schedule for implementation; and
    4. Financing Plan that would detail funding.

- The RSIP recognizes that new local taxes and assessments for clean water programs may require voter approval.

- The RSIP allows local government the flexibility of determining if the programs will be implemented with existing resources or new resources. It also allows for State and federal funding if programs are required above the local resource level.

RSIP allows for impact fees to fund regional/subregional projects

- The RSIP provides a framework for the levy of a regional development impact fee, to deal with waivers that are granted under the NPDES permit, where implementation of storm water programs would be impractical or threaten ground water quality.

- The storm water impact fee could also be used to install regional/subregional storm water capital improvements or storm water programs.

Participation in the RSIP protects communities and tax payers from litigation

Cities and agencies that form regional/subregional groups, submit RSIP's and work under a Board approved RSIP, will be deemed in compliance with the NPDES permit. The Board would retain the ability to levy fines for non-compliance, but third party litigation would be excluded.

Regional Implementation time frames in the Draft Permit are unrealistic

The Draft NPDES permit proposes that the cities amend the SQMP in 180 days to include regional programs. It may take cities in the various watersheds several months to organize and study regional issues. Additional time would be necessary to design and finding the funding necessary for regional storm water programs. (Page 17, Part 3F)

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Interesting Storm Water Facts

# of Catch Basins in Los Angeles River Watershed Only – 150,000

Estimated installation costs of catch basin inserts in Los Angeles River Watershed - $120 million

Estimated annually maintenance costs of catch basin inserts in the Los Angeles River Watershed - $60 million.

Interesting Coalition Facts

Population of Coalition Cities – 1,668,837

Square Miles of Coalition Cities – 275.4

Coalition for Practical Regulation

Arcadia
Artesia
Bellflower
Bell Gardens
Burbank
Cerritos
Commerce
Compton
Diamond Bar
Downey
Hawaiian Gardens
Industry
Irwindale
La Canada~Flintridge
La Mirada
Lakewood
Lawndale
Monrovia
Montebello
Norwalk
Palos Verdes Estates
Paramount
Pico Rivera
Pomona
Rancho Palos Verdes
Rosemead
Santa Fe Springs
San Gabriel
Sierra Madre
Signal Hill
South Gate
Vernon
Walnut
Whittier

Proposed Shift of the State's Storm Water Inspection and Enforcement Program to the Cities

What is the State Proposing?

The Draft NPDES Permit would shift the responsibility for industrial and commercial storm water inspections and enforcement programs from the State to the cities. The State was required in 1989 to develop a program for industrial and commercial storm water permits. Fees collected by the State range from $250 to $10,000 per storm water permit. The State is currently responsible for reviewin plans, issuance of permits, inspections and legal enforcement, including levying fines and prosecuting violators.

What are commercial and industrial sites?

Commercial sites include automotive related businesses, retail gas outlets, auto body shops, motor vehicle parts and accessories facilities. Commercial sites include all restaurants. The commercial inspection program is actually "open ended", in that the Executive Officer can add, at any time, "other commercial facilities that contribute or potentially contribute" to storm water pollution (Page 26, Section 3).

Industrial sites are permitted and inspected by the State under the Phase I NPDES Permit. Sites include refineries and other heavy industries. Under the inspection and enforcement program, cities will be required to inspect industrial sites and designate appropriate BMP's (Best Management Practices) for businesses. (Page 27, Section 4

Cities are being ordered to become the "storm water police"

The permit states that cities must have the ability to enter onto private property to inspect businesses for compliance with State approved storm water plans. The permit states that cities must possess the "ability to carry out all inspection, surveillance and monitoring." Cities will need to determine if non-compliant sites create an "adverse

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impact or nuisance". The criteria or testing procedures to determine whether the site is a nuisance are undefined. (Page 29, Section 7) The cities must also "possess the authority to enter, sample, inspect, review and copy records, and require regular reports" from local businesses. (Page 19, Section G1(n).

Cities will be inspecting sites, even if there is no evidence of non-storm water discharges into the local storm drains.

The Permit requires that commercial and industrial facilities be investigated, "regardless of exposure or non-exposure" of storm water pollution. Cities will be required to establish inspection frequencies with the Regional Board. The permit calls for at least one inspection within the first 24 months for each commercial and industrial site. The permit has a minimum of not less that two inspections for each site during the five-year life of the NPDES permit. (Page 27-28, Section 5)

Inspectors will be required to provide oral notification of a "adverse impact or nuisance" to the Board within 24 hours. Inspectors must provide oral notification of "non-compliance" sites within three days. The inspectors are to follow up oral reports with written reports, in the next five days. Cities are then to enforce the violations through "ordinances or other regulatory mechanisms", including "sanctions to ensure compliance". (Page 28, Sections 6 & 7).

What are the major problems with shifting the inspection and enforcement program to the cities?

Shifting of the inspection and enforcement responsibility to the cities presents several problems:

- <u>No Legal Basis to Mandate Local Inspections & Enforcement</u> - The State entered into an MOA (Memorandum of Agreement) with the USEPA in 1989 to administer the NPDES Program. This included the requirement that the State develop storm water permits and conduct storm water inspections for specified Industrial and Commercial facilities.

- <u>No Legal Authority to Enter Businesses</u> – Cities do not have the legal authority to enter onto private property to enforce a State storm water permit. Cities have to obtain search warrants to enter private property. Case law limits cities to pursuing code enforcement based on the rule of what can be observed from the city right-of-way.

- Unfunded Inspections – The State is proposing ***no funding*** to the cities for the costs of the new inspection program. The business community would object to the additional levy of a city storm water fees, since they are already paying fees to the State. Cities will be required to fund new staffing for inspectors or contract with consultant inspection firms.

- Unfunded Legal Enforcement – Cities must rely on the cumbersome municipal code violation process, which includes filing of charges with city prosecutors or the district attorney. Violations could then end up in expensive court cases. The State is proposing ***no funding*** for prosecution and court expenses.

- Unfunded Surveillance, Monitoring and Health Risk Assessments – Most cities do not have the resources or expertise to complete the health risk assessments and the monitoring required to determine if an "adverse impact or nuisance" exists in storm water. Consultant expertise will most likely be required. Cities do not have storm water "surveillance" programs for local businesses. The State proposes ***no funding*** for the surveillance, monitoring or health risk assessments.

- Unknown Amount and Frequency of Inspections – Cities are not aware of the number of State issued Industrial/Commercial permits in their jurisdiction. The number of inspections is open-ended. The Executive Officer may add sites that "contribute or potentially contribute" to storm water pollution during the five-year life of the NPDES Permit.

- Third Party Litigation – By placing the inspection and enforcement requirement into the NPDES Permit, cities will be exposed to third party litigation and State fines. Cities would be subjected to fines and litigation, if inspection and enforcement programs were not considered "sufficient" by the Board or any individual or third party.

Conclusion

The State industrial and commercial inspection program is contained in a MOA between the State and USEPA. The Coalition is opposed to this shift of inspection and enforcement responsibility, since the NPDES Permit has not addressed the following issues:

- There is no legal authority in the Clean Water Act or in the Porter-Cologne Act that requires the Cities to take over the inspection and enforcement of industrial and commercial storm water permits.

- The cities are being asked to inspect and enforce State permits they have neither reviewed, nor issued.

- The inspection and enforcement program will be very expensive to revenue starved cities. The cities do not have the resources for surveillance, water testing and other requirements. This is another example of an unfunded State mandate on the cities.

- Placing the inspection and enforcement program into the NPDES Permit will subject the cities to Board fines and third-party litigation, even when a City attempts to implement the program in "good faith".

From: Xavier Swamikannu
To: internet:griset@scag.ca.gov
Date: 4/17/01 2:59PM
Subject: SCAG Committee Meeting

Dan:

I want to thank you for inviting me to today's meeting to present. Attached to your handout was a draft copy of a municipal storm water permit. I was under the mis-impression that it was the Regional Board's Draft Permit. In fact, it is a copy of a sample permit submitted to us by Permittees in January

I do not want anyone to waste their time reviewing a draft that is different from the one officially released by the Regional Board for comment. The official copy can be found by visiting the Regional Boards website at:

http://www.swrcb.ca.gov/rwqcb4/html/programs/Stormwater/stormwater.html

Please communicate my concern to all attendees on your sign-in list to the extent possible.

Thank you.

Xavier

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
***For a list of simple ways to reduce demand and cut your energy costs, see the tips at:
http://www.swrcb.ca.gov/news/echallenge.html ***

Dr. Xavier Swamikannu
Storm Water Program
CalEPA - RWQCB - Los Angeles
320 W. 4th Street
Los Angeles, CA 90013

e-mail: xswami@rb4.swrcb.ca.gov
phone: (213)576-6654

CC: Carlos Urrunaga; Dan Radulescu; Wendy Phillips

MESSAGE CONFIRMATION

APR-19-2001 10:35AM THU

FAX NUMBER: 2135765777
NAME :

NAME/NUMBER	:	919163415199
PAGE	:	003
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Winston H. Hickox
Secretary for Environmental Protection

California Regional Water Quality Control Board
Los Angeles Region
(50 Years Serving Coastal Los Angeles and Ventura Counties)

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640
Internet Address: http://www.swrcb.ca.gov/rwqcb4

Gray Davis
Governor

FAX TRANSMITTAL

DATE: 4-19-01

TO: JORGE LEON
and
ALEX MAYER

FROM: WENDY PHILLIPS

FAX NO: 916-341-5199

TEL. #: (213) 576-6618

FAX #: (213) 576-5777

Number of pages sent (including this cover page): 3

MESSAGE:

PLS DISTRIBUTE COPIES OF THE FOLLOWING TO ABOVE RECIPIENTS

Thanks.

R0001804

Coalition for Practical

cc: DD (WP) XS

Ac Rtn (ASAP)

Left message for Kenneth Farfsing on 4.19. WP

Arcadia
Artesia
Bellflower
Bell Gardens
Burbank
Cerritos
Commerce
Compton
Diamond Bar
Downey
Hawaiian Gardens
Industry
Irwindale
La Canada~Flintridge
La Mirada
Lakewood
Lawndale
Monrovia
Montebello
Norwalk
Palos Verdes Estates
Paramount
Pico Rivera
Pomona
Rancho Palos Verdes
Rosemead
Santa Fe Springs
San Gabriel
Sierra Madre
Signal Hill
South Gate
Vernon
Walnut
Whittier

April 13, 2001

Mr. Dennis A. Dickerson
Executive Officer
LARWQCB
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Re: Tentative Agenda – NPDES Workshop – Coalition Concerns

Dear Mr. Dickerson:

The Coalition for Practical Regulation represents 35 Los Angeles County cities, who are Permittees under the Los Angeles County Storm Water Permit. We are in receipt of your April 4, 2001, "Tentative Agenda" for the public workshop on the NPDES Permit Renewal. This letter is sent to request your direction on how best to present the Coalition's comments on the proposed NPDES Permit, since your agenda does not include items for discussion involving many issues of concern to the cities.

We also want to express our concern over the limited time we have had to review the permit, as the workshop has been scheduled less than two weeks from the release of an 86 page draft permit. Given the length of the draft permit and given that there are some 84 Permittees that need to review it, less than eleven working days of time is not sufficient to allow for a complete dialogue at the workshop.

1 month is " 2nd d. We can have a 2nd Workshop if needed

The Coalition wants to work with you to make the public comment period as productive as possible, and to fully hear and understand our concerns. Regardless of when the workshop goes forward, the draft agenda appears somewhat limited in scope. It divides the time your staff will take to present the permit, with the time allowed for public comments. The agenda is arranged into five limited categories that do not address many of the concerns of the Permittees. In addition, we do not know how much time your staff will take to present the issues, but it appears that the public comment period is very limited. For example – your category to present your recommended shifting of the State's inspection and enforcement responsibilities to the cities is limited to 40 minutes for both staff presentations and public comment. The cities have significant concerns with this major program shift, and 40 minutes does not appear to be sufficient time to clarify your intentions and present our concerns.

– NO

We can adjust as needed.

We will be requesting clarification and presenting our concerns in the following areas. We need your direction on which sections of your agenda you wish us to speak under. We have a number of major questions with the proposed NPDES Permit at this time, but will likely have more once we have had sufficient time to review the draft. Our major items of concern at this time are as follows:

- Maximum Extent Practicable Standard
- Shifting of Inspection and Enforcement Responsibilities/ Fiscal Impact of the shift on Cities
- Unfunded Mandates –
- Cost-Benefit Analysis of New Regulations
- Unrealistic Permit Implementation Schedules
- Improper Expansion of the SUSMP and Development Programs
- Lack of Administrative Appeal and "Meet & Confer" Process
- TMDL Implementation Concerns
- Lack of a Regional Approach
- Lack of Authority Issues and/or Exceeding the Board's Legal Authority

MS4 Team - Let's discuss at 1:30 today Wendy

We very much appreciate the opportunity to provide our comments to Board staff, and sincerely want to work with you to make the public comment period at the workshop both efficient and productive. We look forward to hearing from you with respect to these issues. Please do not hesitate to contact me if you need additional information or have any questions. I can be reached at 562-989-7302. Thank you for your attention to these important matters.

Sincerely,

Kenneth C. Farfsing
City Manager
Signal Hill

cc: CPR Steering Committee
CPR Members

DAD
Copies for: DD
Jorge
Alex Mayer } FAX
XS
MF
DR
CU
ME

BAY WATERSHED COUNCIL MEETING
Thursday, April 19, 2001
9:30 am to 12:00 noon
Loyola Marymount University
St. Robert's Auditorium
7900 Loyola Blvd.
Los Angeles, CA 90045
(for directions, see attached map)
Contact: Stefanie Hada @ (213) 576-6615

AGENDA

1. **Welcome and Introductions, Burt Margolin, Chair**

2. **Revisions/Approval of Agenda**

3. **Approval of minutes of February 1, 2001 meeting**
   Attachment 3

4. **Consent Items**
   a) A Resolution to Provide for the Membership of the Ballona Wetlands Foundation on the Bay Watershed Council—Attachment 4.a.
   b) A Resolution to Formalize the Appointments of the Steering Committee of the Bay Watershed Council–Attachment 4.b.

5. **Santa Monica Bay Restoration Grant Program** – Discussion and Action
   Marianne Yamaguchi, Director
   Attachment 5
   Action: Consider and approve projects for Proposition 12 funding.

6. **2001 Municipal Storm Water NPDES Permit Renewal – Presentation and Discussion**
   Xavier Swammikannu, LA Regional Water Quality Control Board
   Presentation and Discussion: 40 minutes

7. **Clean Beaches Initiative** – Update
   Mark Gold, Chair, Steering Committee
   Marianne Yamaguchi, Director

8. **Public Forum**
   Any member of the public may have up to three minutes to address the Council on any matter of concern to the SMBRP.

9. **Other Business**

10. **Adjourn**
    Next meeting date: June 21, 2001

BAY WATERSHED COUNCIL MEETING
Thursday, April 19th
9:30 AM-12:00 PM

This meeting will be held on the Loyola Marymount University campus, in the St. Robert's Auditorium. Free parking is available in Lot "A", off of Loyola Blvd. and 80th Street.

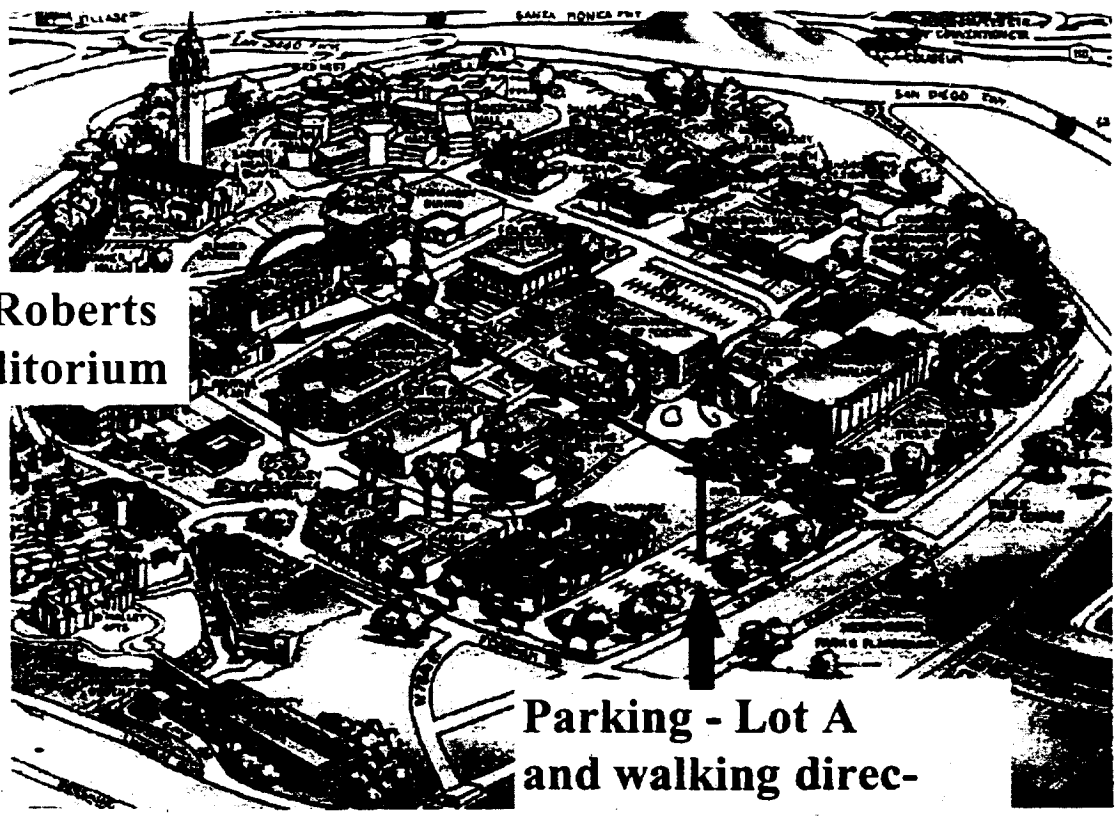
Driving Directions:

From the North, take 405 Freeway South to Howard Hughes Parkway exit
Proceed up hill to Sepulveda and turn left. Make a right on 83th Street (into a neighborhood). Make another right on Loyola Blvd and head to the Campus Entrance.

From the South, take 405 Freeway north to the Manchester exit. Turn left on to Manchester and proceed toward the ocean. Turn right on Loyola Blvd (the light before Lincoln) and head to the campus entrance.

Parking lot "A" is the first lot in front of the campus on the left, just past the Kiosk,

LOYOLA MARYMOUNT UNIVERITY - CAMPUS MAP



MINUTES OF THE TWENTY-FIRST SANTA MONICA BAY WATERSHED COUNCIL MEETING
February 1, 2001

1. **Welcome and Introduction**

Newly crowned Bay Watershed Council Chair Burt Margolin, convened the 21st Bay Watershed Council meeting at the Marina del Rey Hotel at approximately 9:40 a.m.

Members in Attendance:	Representing:
Burt Margolin	Chair, BWC
Melinda Bartlett	City of Los Angeles
Don Wolfe	Los Angeles Co. Dept. of Public Works
Rorie Skei	Santa Monica Mountains Conservancy
Marvin Smith	Los Angeles Rod and Reel
Kathy Dunbabin	Hermosa Beach City Council
Mary Sue Maurer	Assemblymember Fran Pavley
Drew Wonacott	Los Angeles Co. Dept. of Beaches & Harbors
Joseph Chesler	Los Angeles Co. Dept. of Beaches & Harbors
Bob Horvath	Sanitation Districts of Los Angeles Co.
Laurie Newman	Senator Sheila Kuehl
Jovita Pajarillo	US EPA Region 9
Dennis Washburn	Calabasas City Council
Marvin Sachse	Brash Industries
Mike Frazer	Los Angeles Co. Fire Dept. – Lifeguard Div.
Angus Alexander	Los Angeles Co. Fire Dept. – Lifeguard Div.
John Dorsey	SMBRP Technical Advisory Committee
John Cubit	NOAA
David Kay	Southern California Edison
Dorothy Green	Heal the Bay
Susan Nissman	LA Co. Supervisor Zev Yaroslavsky
Susan Lipman	City of Culver City
Menerva Daoud	Los Angeles Co. Dept. of Public Works
H. David Nahai	LA Regional Water Quality Control Bd.
Mark Gold	Heal the Bay
Steve Fleischli	Santa Monica BayKeeper
Wendy Rains	Ballona Wetlands Foundation
Margo Murman	RCD of the Santa Monica Mountains
Neil Miller	City of Manhattan Beach
Lou Garcia	City of Redondo Beach

SMBRP Staff

Marianne Yamaguchi, Stefanie Hada, Miwa Tamanaha, Guangyu Wang, Cathy Chang, Stephen Groner, Carol Linteau, Jack Topel, Stephanie McDonald, Karen Caesar

2. **Approval of Agenda**

Agenda was approved.

3. **Approval of September 28, 2000 Meeting Minutes**

Minutes were approved.

8. **Report on progress re implementation of the Malibu Creek watershed plan**
Stephanie McDonald gave a presentation on this topic, outlining the significance of the watershed, its current and potential land uses, plans to restore it, and key issues. She also discussed which actions are only making moderate and minimal progress, as well as the top 10 accomplishments and top 10 restoration priorities.

9. **Announcement of progress report on storm water management programs in the Santa Monica Bay watershed.**
Cathy Chang gave a presentation on this topic. She discussed the six categories of stormwater related actions included in the Bay Restoration Plan, their objectives, methods of evaluation, and the work now in progress. This topic will be revisited at a future meeting.

10. **Overview of consent decree regarding the natural resources damanges lawsuit and DDT contamination of the Palos Verdes Shelf.**
John Cubitt from NOAA provided this update. He said the case had been in court for +10 years, and that it is the biggest natural resource damage assessment since the Exxon Valdez spill; it was the biggest for a non-oil spill case. He said the consent decree detailing the settlement should be ready by June to be approved by the court.

11. **Governor Davis' Clean Beach Initiative**
Marianne Yamaguchi reported that there is money available to improve our beaches. In order to take advantage of this great opportunity, we need to work as a group to develop a list of projects we want to do in the Los Angeles area. A future meeting was arranged to come up with ideas.

12. **Public Forum**

13. **Adjourn**

Santa Monica Bay Restoration Project
Bay Watershed Council

Resolution 2001-04

A Resolution to Provide for the Membership of the Ballona Wetlands Foundation On the Bay Watershed Council

WHEREAS, the Santa Monica Bay Restoration Project is one of twenty-eight programs created under the U. S. National Estuary Program, per Section 320 of the Federal Water Quality Act of 1987 (PL 100-4), and it is committed to the restoration, conservation, cleanup, protection, and enhancement of the Santa Monica Bay and the wise use of the resources within its watershed, and

WHEREAS, the Bay Watershed Council is the official governing body of the Santa Monica Bay Restoration Project, and its Bylaws provide that the Council may formally invite an organization to become a member of the Council, and

WHEREAS, the Ballona Wetlands Foundation was created by court-order to preserve and protect the Ballona Creek tidal wetland ecosystem, a critical and endangered resource located wholly within the Santa Monica Bay Watershed, and

WHEREAS, the goals and functions of the Ballona Wetlands Foundation parallel those of the Santa Monica Bay Restoration Project, leading the Foundation to request the opportunity to affiliate with the Council, and

WHEREAS, the Steering Committee of the Bay Watershed Council has reviewed the affiliation request and heartily recommends that the Ballona Wetlands Foundation be formally invited to become a member of the council,

NOW, THEREFORE BE IT RESOLVED that the Bay Watershed Council extends to the Ballona Wetlands Foundation an enthusiastic invitation to affiliate with the Council as a member. The Council requests that the Foundation notify the Council in writing that the invitation is accepted and that the Foundation provide to the Council a letter naming its designated delegate and up to two alternates to serve on the Council.

BE IT FURTHER RESOLVED that the Director of the Santa Monica Bay Restoration Project shall file this original resolution in the official records of the organization and shall update all pertinent records of the organization.

Duly adopted by the Bay Watershed Council on this 19th day of April, in the year 2001.

ATTEST:

SIGNED: _____

Mr. Burt Margolin, Chairperson of the Bay Watershed Council

Santa Monica
BAY
Restoration
PROJECT

ATTACHMENT 4.b.

MEMORANDUM

Date: April 19, 2001

To: Members of the Bay Watershed Council

From: Marianne Yamaguchi, Director
Carol Linteau, Consultant

Subject: Resolution to formalize the current membership of the Steering Committee and revitalize the BWC membership

---

The Steering Committee has identified a need to update and revitalize the membership of the overall organization. FYI, efforts are underway to work with all BWC member organizations to renew their designations to the Council and fill all current vacancies on both the Council and Steering Committee. To accomplish this, Council Chairman Burt Margolin will be signing a letter to the governing body of each member organization requesting them to review and specify their designees and return to us a completed simple form that will allow us to update our records and revitalize our membership.

Today you have before you a resolution to:

- Make formal the appointment of 11 delegates to the Steering Committee. This resolution simply makes official the current de facto membership of the Committee, given the recent election of Officers and various changes in the Council's membership since its creation.

- Direct the Steering Committee to bring before the Council at its June meeting a proposal to fill the remaining 3 delegate that are vacant.

- Direct the Steering Committee to review and recommend needed changes to the Council bylaws. Staff will present a set of suggested bylaws amendments to the Steering Committee at its May meeting. In turn, the Steering Committee will present their recommended amendments to the full BWC after their own deliberations.

320 W. Fourth Street
2nd Floor
Los Angeles, CA 90013
213.576-6615
Fax 213.576-6646

A Partnership to
Restore and Protect
Santa Monica Bay

Funded by US EPA
and the State Water Resources
Control Board in cooperation
with the public, local agencies,
and industry.

Santa Monica Bay Restoration Project
Bay Watershed Council

Resolution 2001-05

A Resolution to Formalize the Appointments
To the Steering Committee of the Bay Watershed Council

WHEREAS, the Santa Monica Bay Restoration Project is one of twenty-eight programs created under the U. S. National Estuary Program, per Section 320 of the Federal Water Quality Act of 1987 (PL 100-4), and it is committed to the restoration, conservation, cleanup, protection, and enhancement of the Santa Monica Bay and the wise use of the resources within its watershed, and

WHEREAS, the Bay Watershed Council is the official governing body of the Santa Monica Bay Restoration Project, and the Bylaws for the Bay Watershed Council specify that the Council shall formally appoint fourteen delegates to a Steering Committee of the full Council, and

WHEREAS, since creation of the Council and its initial Steering Committee changes and vacancies have occurred over time in the designations of delegates and alternates by member organizations of the Bay Watershed Council and the Steering Committee. As a matter of course, it is necessary and appropriate that the Council reviews and updates its membership records, updates its Bylaws, holds elections of Officers and formally appoints its Steering Committee.

NOW, THEREFORE BE IT RESOLVED that each of the persons listed in this Resolution is hereby formally appointed by the Council as a delegate to serve on its Steering Committee, making official the past changes in the Council, its Officers and its Steering Committee members:

Mr. Burt Margolin	Chair of the Bay Watershed Council, Delegate representing the Public At Large and User Groups within the Santa Monica Bay Watershed ***Steering Committee Category: Open Delegate***
Mr. David Nahai	Vice Chair of the Bay Watershed Council, Delegate Designee and Chair of the Los Angeles Regional Water Quality Control Board ***Steering Committee Category: LARWQCB***
Ms. Laurie Newman	Vice Chair of the Bay Watershed Council, Delegate Designee of State Senator Sheila James Kuehl ***Steering Committee Category: Federal/State Legislators***
Mr. Adi Liberman	Vice Chair of the Bay Watershed Council, Delegate Designee of Councilmember Ruth Galanter, City of Los Angeles ***Steering Committee Category: City of Los Angeles***

ATTACHMENT 5

April 19, 2001

TO: MEMBERS OF THE BAY WATERSHED COUNCIL

FROM: MARIANNE YAMAGUCHI, DIRECTOR

RE: RECOMMENDATIONS RE SANTA MONICA BAY RESTORATION GRANT PROGRAM (PROPOSITION 12)

Background

The Safe Neighborhood Parks, Clean Water, Clean Air and Coastal Protection Bond Act of 2000 (Proposition 12) specifically earmarked $25 million for restoration of Santa Monica Bay in accordance with the goals and priorities of *the Santa Monica Bay Restoration Plan.* The Bay Restoration Plan includes over 250 actions, the goals of which include:

- To reduce pollutant loadings to and prevent degradation of the waters of Santa Monica Bay;
- To reduce human health risks associated with swimming in or harvesting seafood from the Bay; and
- To restore, rehabilitate and protect the marine ecosystem, living resources and biodiversity of the Bay and its watersheds.

A Request for Proposals was issued soliciting three-page pre-proposals for projects that would achieve the goals of the Bay Restoration Plan and address its water quality and natural resource protection objectives. The RFP included proposal rating criteria for each category, based on the work of the Watershed Implementation Strategy Work Group.

On February 28, 2001, 63 proposals were received, with a total funding request of $33.9 million. Of these proposals, 14 projects are for pollution control and abatement projects ($15.4 million); 14 for habitat restoration projects ($4.4 million); 25 for assessment, monitoring and research projects ($11.3 million) and 10 for education programs ($2.9 million). A broad range of applicants submitted proposals, including 11 from municipalities, 10 from federal/state/local agencies, 7 from non-profit organizations, 11 from universities and research institutions, and 8 of which were multi-entity partnerships.

Between March 5 and 19, a team of 27 Review Panelists each reviewed and scored these proposals. They are gratefully acknowledged for their efforts. The Review Panel convened on March 22 to make recommendations which were then forwarded to the Steering Committee. The attached Excel tables summarize the grant award , including comments and conditions of award.

Recommended Action: **Consider and approve projects as recommended.**

ATTACHMENT 5.

Santa Monica Bay Restoration Project
Bay Watershed Council

Resolution No. 2001-06

A Resolution to Award
Proposition 12 Santa Monica Bay Restoration Grants

WHEREAS, the Safe Neighborhood Parks, Clean Water, Clean Air and Coastal Protection Bond Act of 2000 (Proposition 12) provided $25 million for restoration of Santa Monica Bay in accordance with the goals and priorities of the Santa Monica Bay Restoration Plan; and

WHEREAS, the Santa Monica Bay Restoration Project is established as a National Estuary Program per Section 320 of the Federal Water Quality Act of 1987 (PL 100-4) and is committed to the restoration, conservation, cleanup, protection and enhancement of the Santa Monica Bay and the wise use of the natural resources within its watersheds; and

WHEREAS, the Bay Watershed Council is the governing body of the Santa Monica Bay Restoration Project; and

WHEREAS, Proposition 12 provided that the Bay Watershed Council of the Santa Monica Bay Restoration Project shall determine project eligibility and grant priorities; and

WHEREAS, the California Legislature has to date obligated $5 million of bond monies to this grant program which is administered by the California State Coastal Conservancy and it is anticipated that an additional $5 million will be obligated in the 2001-02 budget; and

WHEREAS, the Santa Monica Bay Restoration Project has undertaken a process to solicit and receive project proposals that achieve the goals and priorities of the Santa Monica Bay Restoration Plan; and

WHEREAS, a Review Panel has reviewed and made recommendations regarding the proposals received and forwarded those recommendations to the Bay Watershed Council's Steering Committee; and

WHEREAS, the Bay Watershed Council's Steering Committee has reviewed the recommendations of Review Panel and has forwarded its recommendations to the Bay Watershed Council;

NOW THEREFORE BE IT RESOLVED that the Bay Watershed Council of the Santa Monica Bay Restoration Project recommends that the following projects be awarded grant funding under the provisions of the 2000 Proposition 12 Santa Monica Bay Restoration Grant Program; and

remove oil and grease at a storm drain located near the Overland Avenue Bridge along Ballona Creek;

$810,000 to the City of Los Angeles for a project to divert dry weather runoff from the Temescal Canyon storm drain that impacts recreational uses at Will Rogers State Beach;

$30,000 to the City of West Hollywood for a project to install 20 catch basin excluder devices at high intensity commercial areas along Sunset and Santa Monica Boulevards;

$810,000 to the City of Los Angeles for a project to divert dry weather runoff from the Imperial Highway storm drain that impacts recreational uses at Dockweiler State Beach;

$600,000 to the County of Los Angeles for a project to install and monitor up to 200 catch basin trash inserts and up to 16 vortex separation systems in order to analyze and characterize the nature of trash from eight different land use types;

C. For research, education and monitoring projects that achieve the priority objectives of the Santa Monica Bay Restoration Plan;

$100,000 to the Southern California Coastal Waters Research Project and the National Fisheries Conservation Center to assess the impacts of human activities on changes to nearshore fish populations and assemblages of Santa Monica Bay;

Up to $284,430 to the UCLA Ocean Discovery Center for the "EcoPak" project, to develop and implement pre- and post-field trip curriculum and training focusing on Santa Monica Bay habitats and environmental problems;

Up to $88,420 to the University of California at Los Angeles for a project to evaluate restoration techniques for rocky intertidal communities of Santa Monica Bay;

$63,800 to Mountains Recreation and Conservation Authority, Mountains Restoration Trust, and the Resource Conservation District of the Santa Monica Mountains for a project to assess the population and movement of Western Pond Turtles (a State and Federal species of concern) in the Upper Topanga Canyon watershed;

Up to $365,835 to the California State University at Monterey Bay to map and assess shallow water habitats in Santa Monica Bay to determine availability of kelp and rockfish habitat and potential for kelp restoration and rockfish replenishment;

$350,600 to Heal the Bay for a project to map pollution sources, characterize impairments, generate and compile water quality monitoring data, prioritize restoration projects and Best Management Practices in the Malibu Creek watershed;

Up to $667,000 to the City of Malibu to develop and implement a groundwater quality monitoring program and model to assess risks associated with decentralized wastewater treatment systems;

	A	B	C	D	E	F
1	**PROJECT NAME**	**PROJECT PROPONENT**	**BRIEF DESCRIPTION**	**FUNDING REQUEST**	**MAXIMUM RECOMMENDED FUNDING LEVEL**	**Conditions**
2	**GROUP I**					
3	Restoration of Riparian Habitat - Solstice Canyon	NPS/MRT	Restoration of riparian habitats along Lower Solstice Creek. Eradication of non-native plant species and planting of native sedges, grasses, herbs and shrubs.	$ 55,000	$55,000	
4	Malibu Creek Environmental Restoration Study	CA Parks & Rec	Funds portion of feasibility study for removal Rindge Dam as a part of the Malibu Creek Environmental Restoration Study. Provides funding for three portions of the study: hydrology and hydraulics studies, engineering design and analysis, and environmental studies.	$ 200,000	$200,000	Assuming allocation not available from CSCC.
5	Ballona Creek Water Quality Improvement Project	Culver City	trap gross solids and to remove free oil and grease with the use of sorbents at the outlet of a 102 inch storm drain located just west of the Overland Avenue Bridge along Ballona Creek. Includes collaboration with the Santa Monica Baykeeper for the sampling and monitoring of the water quality to establish general effectiveness of such as a system in treating similar runoff.	$ 168,500	$168,500	
6	Temescal Canyon Low Flow Diversion and Treatment	City of LA	storm drain Hyperion Treatment Plant. The diversion structure will include a trash well to collect trash and debris, a wet well for pumping out diverted flow, a concrete valve box for controlling flow directions and a metal instrument panel for control switches.	$ 810,000	$810,000	Fund through Clean Beaches Initiative if funding becomes available.
7	Kelp Restoration Project	SM BayKeeper	Kelp restoration and maintenance work at three sites along Malibu coast. Creation of mariculture system at Ocean Discovery Center for kelp propagation. Involves students from Santa Monica in the kelp growing program and volunteer divers to monitor and "plant" kelp.	$ 50,000	$50,000	Delete aerial survey component.
8	Catch Basin Debris Excluder Devices	West Hollywood	curb face openings on Sunset and Santa Monica Boulevards. These devices will be combined with the current five-day-a-week street sweeping of the two Boulevards to reduce the amount of litter and debris that enters the storm drain system. Devices will be located in catch basins near fast food restaurants and restaurants with outdoor dining where litter is a problem.	$ 30,000	$30,000	Applicant must address O&M issues in full proposal.
9	Malibu Creek Habitat Enhancement	MRT	Removal of Arundo donax and other non-native plants along Malibu Creek (state parkland) from PCH Bridge to Malibu Canyon / Las Virgenes Road. Project is approximately 105 acres and 5.2 linear miles.	$ 189,000	$189,000	Proponent must show that upstream sources of arundo will not cause regeneration.

	A	B	C	D	E	F
19	Stream Health Index and Index of Biological Integrity for Malibu Crk Watershed	Heal the Bay	Map pollution sources; characterize impairments; generate and compile WQ monitoring data; develop prioritized list of restoration projects and BMPs. Develop Stream Health Index and Index of Biological Integrity.	$ 400,000	$ 350,600	Delete IBI development component.
20	Risk Assessment of Decentralized Wastewater Systems, Malibu	Malibu	Develop model for assessing risks posed by decentralized wastewater treatment systems in project area. Develop groundwater quality monitoring program. Quantify pollutant contributions to various habitats.	$ 667,000	$ 667,000	
21	Las Virgenes Creek Restoration and Treatment Program	Calabasas	Restoration of habitat and treatment of some flows to Las Virgenes Creek. Reintroduction of native vegetation and removal of a 400 foot long section of concrete from Las Virgenes Creek. Installation of a CDS along with a Purizer disinfection unit at storm drain outfall.	$ 721,700	$ 282,000	Funding for concrete removal and replanting component only
22	Interactive Information System for Santa Monica Bay	Wrigley Institute for Environmental Studies	data management system with the capibility to automatically retrieve monitoring data and imagery and to integrate, analyze, and display this data in a user-friendly manner. The new SMBRP website would be capable of using the above mentioned GIS and data management tools to coordinate monitoring and research activities as well as to illustrate and communicate information about conditions within the Bay and watershed to stakeholders.	$ 452,600	$ 347,600	
23	Ocean Discovery Center Expansion Project	UCLA ODC	Expansion from 4,000 sf under the pier to 40,000 sf, enough to quadruple capacity from 20,000 to 80,000 visiting students/year. This proposal funds the development of architectural plans, drawing and models, engineering studies and preliminary curriculum and exhibit planning.	$ 1,400,000	$ 250,000	Funding contingent on raising $5 million within 2 years.
24	Phase II Topanga Creek Watershed and Lagoon Restoration	RCD SMM	Finalize characterization of lower Topanga watershed. Develop final restoration plan, including engineered drawings. Pathogen monitoring and exotic tree removal.	$ 632,291	$ 298,760	Funding for lagoon/wetland restoration plan component only.
25			**Subtotal - Group 1**	**$ 10,776,337**	**$ 7,028,446**	
26	**GROUP II**					
27	Storm Drain BMP Retrofits	Santa Monica	Two-stage Best Management Practice (BMP) treatment train at three locations TBD and two dry weather diversion locations, Wilshire and Montana Ave. For the 2-stage BMP system, a Continuous Deflective Separation unit will be the primary stage to remove the gross solids and floatables, sediments and some hydrocarbons. A StormFilter will be the second stage to remove soluble compounds. A monitoring program will be developed and implemented. An educational program will publicize this treatment program, informing the public about urban runoff problems and solutions.	$ 1,700,000	TBD	Need better characterization for proposed measures at proposed locations. Recommend that only measures that address a demonstrated problem and cost-effective. Wilshire and Montana drains are not generally flowing in summer; SM Canyon diversion by CLA may address some sites. A more detailed proposal needed before recommend funding.

Bay Watershed Council Meeting, 4/19/01

	Name	Organization	Address	Phone	Fax	Email
1	AVEN YAM	CITY OF MANHATTAN BEACH	1400 HIGHLAND AVE., MB CA 90266	310 802-5363	310 802-5351	ayam@ci.manhattan-beach.ca.us
2	FRED BERTHMAN	CULVER CITY DPW	9770 CULVER BLVD 90232	310.253.5622	5626	FRED.BERTHMAN@CULVERCITY.ORG
3	Dan Wasserman	Congresswoman Harman	811 N Catalina Ave 90277	310 372-1600	310 372 1622	dan.wasserman@mail.house.gov
4	Dan Wolfe	LACo DPW	900 S. Fremont Alhambra	6264584213	6264584022	dwolfe@dpw.co.la.ca.us
5	Brendan Reed	SM BayKeeper	PO Box 10096, MDR, CA	310 3059645	310 3057985	Kelpkrusader@surfrider.org
6	John Jakupcak	City of W. Hollywood	8300 Santa Monica Blvd	323-848-6499	323-848-6564	jjakupcak@weho.org
7	Mark Gold	Heal the Bay	3220 Nebraska Ave, S.M. 90405	310 453-0395	310-453-7929	mgold@healthebay.org
8	Joe Chesler	LACO Beaches & Harbors	18483 Fiji Way 7th fl, Marina del Rey CA 90292	310 305 9533	310 8278556	jchesler@dbh.co.la.ca.us
9	Alex Sanchez	El Segundo Power LLC	301 Vista del Mar El Segundo, Ca 90245	310 615 6351	310 615 6060	alexander.sanchez@nrgenergy.com
10	Fazi Mofid	L.A DWP	111 N. Hope st. Rm 1213, L.A 90012	(213) 367-0280	(213) 367-3297	Fazi.Mofid@Water.LADWP.com
11	Stefanie Hada	SMBRP	320 W. 4th St, Ste 200, LA 90013	213/576-6578	213/576-6646	shada@rb4.swrcb.ca.gov
12	Stephanie McDonald	SMBRP	"	213/576-6641	"	Smcdonal@rb4.swrcb.ca.gov
13	Laurie Newman	Senator Kuehl	1895 W Pico LA 90064	310 441 9084	441-0224	laurie.newman@sen.ca.gov
14	John Dorsey	TAC/City LA	650 S. Spring St, 7th Fl, LA	213 847-6347	213 847-5443	jdorsey@san.LAcity.org
15	MarySue Maurer	Assem. Fran Pavley	6355 Topanga Canyon Blvd WH 91367	818/596-4411	818/596-4150	mary.maurer@asm.ca.gov
16	Mark Beyeler	Coastal Conservancy	1330 Broadway Ste 1100	510 286 4172	510 286-0470	mbeyeler@scc.ca.gov
17	Randal Orton	Las Virgenes MWD	4232 Las Virgenes Rd Calabasas CA 91302	818/251-2145	x 9172	RORTON@LVMWD.DST.CA.US

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	Name	Organization	Address	Phone	Fax	Email
18	Rorie Skei	S. Monica Mts. Conservancy	5750 Ramirez Cyn. Rd. Malibu 9026	310 589-3200 x112	310 589-2408	Skei@smmc.ca.gov
19	Bill Paznokas	DFG	4949 Viewridge Ave S.D. 92123	858-467-4218	858-467-4299	wpaznokas@dfg.ca.gov
20	ANGUS ALEXANDER	LACOFIRE/LIFEGUARDS	2300 OCEANFRONT WK VENICE 90291	310 577 5700	3103063619	SALIADIAS@MSN.COM
21	WENDY RAINS	Ballona Wetlands Foundation	318 B Culver Bl. P.D.Rey	310-574-0700	310574-9434	WENDYRAINS@ballona-wetlands.org
22	Heather George	S.M. BayKeeper	P.O. Box 10096 MdRey 90295	310/305 9645	310/305-7485	watergirl@smbaykeeper.org
23	SHIRLEY PAK	CALTRANS - STORM WATER	120 S. SPRING ST. L.A CA	(213) 897-0428	(213) 897-0148	SHIRLEY_PAK@CA.gov dot.gov.
24	MARIA AGUSTIN	CALTRANS - STORMWATER	"	"	"	MARIA.AGUSTIN@ca.dot.gov
25	MATT LIAO	"	"	"	"	MATT_LIAO@CA.dot.gov
26	Vic Peterson	City of Malibu	23555 Civic Center Way	310 456 2489 3356	310 456 3356	
27	Sema Nissman	3rd SDS Yaroslavsky	26500 Agoura Rd. #206 91302	818-880-9416	9346	SNISSMAN@bos.co.la.ca.us
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R0001820

Municipal Storm Water Permit Reissuance for Los Angeles County

Presentation to the
Bay Watershed Council
April 20, 2001

Xavier Swamikannu
California Regional Water Quality Control Board,
Los Angeles Region

Storm Water Program Background

- Clean Water Act Amendments - 1987
- Municipal Storm Water (MS4) Permits
  - LA County issued in 1990; reissued 1996 ; Scheduled for reissuance 2001
  - Long Beach issued 1999; Santa Clarita (proposed)
- Statutory standard - reduce pollutants to the Maximum Extent Practicable (MEP)
- Water quality standards must be attained where required by permitting authority

Federal Regulations

Reduce pollutants from residential/ commercial areas (40 CFR 122.26 (d) (2)(iv)(A))

Control illicit connections and illegal dumping (40 CFR 122.26 (d)(2)(iv)(B))

Federal Regulations

Control pollutants from municipal and industrial facilities (40 CFR 22.26 (d)(2)(iv)(C))

Control pollutants from construction sites (40 CFR 22.26 (d)(2)(iv)(D))

Implement and enforce controls for new development / significant redevelopment 40CFR 122.26 (d)(2)(iv)(A)(2)

Municipal Storm Water Program

Legal Authority

Public Agency Activities

Development Planning / Construction

Illicit Connections / Discharges Elimination

Public Education / Information

Municipal Storm Water Monitoring Program

Critical Sources Characterization

Mass Emissions Monitoring

BMP Effectiveness Evaluation

Receiving Water Impact Assessment

Proposed Reissuance Schedule

- Meetings with Permittee sub-group [Feb-April]
- Release First Draft [April 13]
- Staff Workshop [April 24]
- Meetings to review comments [May-June]
- Issue Final Draft and Response to Comments [June 8]
- Propose adoption at Public Hearing [July 26]

Proposed Program Enhancements

Public Information and Participation Program

- Outreach specific to pollutant of concern
- Corporate Outreach
- Business Assistance Program

Industrial/ Commercial Inspection

- Inspection [rather than educational site-visits]

Proposed Program Enhancements (cont'd)

Development Planning

- Peak discharge control to protect habitat
- Numerical mitigation criteria not applied to hillside developments less than 10,000 sq. ft.
- Flow based BMP design criteria added
- Gas stations subject to mitigation if threshold [100 or more ADT] exceed
- Industrial/ Commercial threshold [to 40,000 sq. ft.] lowered
- General Plan update [five years]
- Develop Technical Guidance

Proposed Program Enhancements (cont'd)

Development Construction

- Specific requirements for projects 1 acre or more

Public Agency Activities

- Apply same standard as private construction
- Apply same standard as private development planning
- Obtain coverage suspended under ISTEA for all public industrial activity/ construction projects [March 10, 2003]

Proposed Program Enhancements (cont'd)

Illicit Connection/ Discharge Elimination

» Priority Screening

Monitoring Program

» Toxicity Reduction Evaluations
» Tributary/ Source Identification
» Urban Stream Bioassessment
» BMP Effectiveness Study

Summary

» Third generation
» Basic model programs already in place
» Consistent with U.S. EPA's 'Interim Permitting Policy' [61 *Fed. Reg.* 4376]
» Total Maximum Daily Load (TMDL) component
» Builds on success
» Remedies shortcomings

For Information

Web site:
http://www.swrcb.ca.gov/rwqcb4/html/programs/Stormwater/stormwater.html

Phone:

Wendy Abarquez, Storm Water Section
(213)576-6802

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April 20, 2001

VIA FACSIMILE AND
FIRST CLASS MAIL

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality
Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013-1105

Re: Los Angeles Regional Water Quality Control Board
Draft NPDES Permit No. CAS614001

Dear Mr. Dickerson:

This office is representing a coalition of cities ("Coalition") in connection with the Los Angeles Regional Water Quality Control Board's Draft Municipal NPDES Permit for Los Angeles County, NPDES No. CAS614001. The purpose of this letter is to provide the Board with a list of legal issues that the Coalition has identified with this initial Draft, in order to give the Board and interested stakeholders an opportunity to fully evaluate these issues ***prior*** to the issuance of a final permit.

With all parties working to address these legal issues, it is our hope that the Regional Board will then be in a position to issue a legal, valid and technically supportable municipal NPDES permit for Los Angeles County. The issues the Coalition would ask that your staff consider addressing at this time include the following:[1]

(1) The Draft Permit imposes requirements which the Regional Board does not have authority to impose, and/or where the Regional Board has exceeded its authority. For example,

[1] Please recognize that we have expedited the forwarding of this list of legal issues to you so that you would be in a position to review them in time for the April 24, 2001, Workshop. Please, understand however, that as we did not receive a complete draft of the permit until April 13, 2001, the list of issues identified herein is by no means comprehensive.

the Draft goes beyond the ***maximum extent practicable*** standard under the Clean Water Act and the regulations thereunder. It further exceeds the inspection, surveillance, and monitoring obligations that may be imposed on municipalities under the federal regulations, specifically including, but not limited to, authority to inspect certain specified industrial activities and construction sites. Specifically, please note that there is no authority to require that municipalities inspect ***all*** industrial and commercial operations within its jurisdiction, or that it enforce the terms of a State wide General Permit.

(2) The Draft Permit fails to comply with the requirements of the Clean Water Act as it is not based on quantitative data, and as the managements programs in the Draft Permit have not been developed based on such quantitative data, and formulated to identify and thereafter address the types and sources of pollutants in the affected receiving waters. In short, the Draft Permit was not developed based on data showing the pollutants of concern, and the sources of those pollutants.

(3) The Draft Permit fails to consider economic considerations and no cost/benefit analysis appears to have been performed by Board staff.

(4) The Draft Permit would result in countless unfunded mandates on municipalities, in clear violation of the provision of the California Constitution that precludes the State from shifting financial responsibility to local entities that are ill-equipped to handle the transferred tasks.

(5) The SUSMP requirements imposed under the Draft Permit are inconsistent with State Board Order No. 2000-11, and in addition, are subject to all the same legal arguments addressed in connection with the Coalition's petition to the State Board which led to State Board Order No. 2000-11. For example, in addition to improperly expanding the categories of development the SUSMP would apply to, the reference to "discretionary" projects has again been dropped, which, combined with the Regional Board's revised definition of "Redevelopment," would result in some of the very same problems created by the last SUSMP, a SUSMP that was specifically modified by the State Board because of such defects.

(6) The Draft Permit seeks to impose waste discharge requirements that contravene the requirements of California Water Code Section 13263 and 13241.

(7) The Draft Permit improperly attempts to amend the statutory and regulatory requirements of CEQA, in violation of CEQA and the requirements of the Administrative Procedures Act.

(8) The Draft Permit improperly invades the local land use authority of municipalities, by requiring amendments to the Cities' General Plans. There is nothing in State

law that allows a regional water quality control board to dictate to a municipality on how to regulate land uses within its jurisdiction.

(9) Various findings in the Draft Permit are not supported by the evidence, and many provisions in the Draft are not supported by findings.

(10) The Draft Permit seeks to impose an order, rule or standard of general application again, without complying with the requirements of the Administrative Procedures Act.

(11) The Draft Permit fails to comply with the requirement of California Water Code Section 13370, which requires compliance with the provisions of the Clean Water Act.

(12) The Draft Permit fails to include a finding of consistency with the Area-Wide Waste Treatment Management Plan, a finding the Clean Water Act expressly requires before the subject NPDES permit can be issued (33 U.S.C. § 1288(e)), and a finding required under State Law. (Water Code §13225 (h).)

(13) Because the Draft Permit goes beyond the authority provided under the Clean Water Act and the Porter-Cologne Act, and as the Draft Permit will apply to "new sources" as defined in the Clean Water Act, the requirements of CEQA must be complied with.

(14) The Draft Permit fails to include a set of Administrative Enforcement Procedures, including a notice and meet and confer process, to resolve differences in compliance expectations.

(15) The Draft Permit fails to include appropriate "safe harbor" language particularly for alleged exceedences of water quality objectives, and rather than acting as a ***"permit"*** to allow for "discharges" of pollutants in accordance with the Clean Water Act and to "control" pollutants "to the maximum extent practicable," the Draft Permit is open-ended ***generally prohibiting all*** discharges from the MS4 that cause or contribute to a violation of water quality standards or water quality objectives. The very purpose of the issuance of a ***"permit"*** is to allow the discharge of "pollutants," so long as they are controlled ***to the maximum extent practicable.*** We would ask that the Regional Board not lose sight of the fact that the subject "discharges" are not caused or created by the municipalities, and that as enforcing agencies, municipalities cannot be expected to be liable for every act or indiscretion of its citizens.

(16) The Draft Permit, particularly including the SUSMP requirements set forth therein, violate the prohibition under California Water Code Section 13360, prohibiting the Regional Board from specifying the design, location, type of construction, or particular manner in which compliance is to be obtained.

(17) As the State Board has not adopted regulations providing guidance on the issuance of MS4 NPDES permits, and since the Regional Board is not a State agency with State wide jurisdiction, the Regional Board has no authority to issue the subject NPDES permit. (See 40 CFR § 123.1(g).)

We look forward to working with you and your staff on a resolution of the above issues and to the development of a municipal NPDES permit that is consistent with both the Clean Water Act and State law. Please do not hesitate to contact the undersigned if you have any questions or need any additional information with respect to these issues.

Sincerely,

RUTAN & TUCKER, LLP

Richard Montevideo

RM:ctm:kmh
cc: Jorge Leon, Esq.
Craig Wilson, Esq.
Mr. Arthur Baggett
Mr. Ken Farfsing

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40 CFR 122.26(d)(2)(iv)(A)
SUSMPs

(A) A description of structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal storm sewer system that are to be implemented during the life of the permit, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls.

40 CFR 122.26 (d)(2)(iv)(C)

. . . (C) A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of the title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system. the program shall:

(*I*) Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges;

REDEVELOPMENT

"Redevelopment" means, but is not limited to, the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; land disturbing activities related with structural or impervious surfaces. Redevelopment that results in the creation or addition of 5,000 square feet or more or impervious surfaces is subject to the requirements for storm water mitigation. If the creation or addition of impervious surfaces is fifty percent or more of the existing impervious surface area, then storm water runoff from the entire area (existing and additions must be considered for purposes of storm water mitigation. If the creation or additions is less than fifty percent of the existing impervious area, then storm water runoff from only the addition area needs mitigation.

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"INDUSTRIAL/COMMERCIAL FACILITY"
Under the Draft NPDES Permit

"Industrial/Commercial Facility" means any facility involved and/or used in either the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services. This category of facilities includes, but is not limited to, any facility defined by the Standard Industrial Classifications (SIC). Facility ownership (federal, state, municipal, private) and profit motive of the facility are not factors in this definition.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER: WQ 2000 - 11

In the Matter of the Petitions of
THE CITIES OF BELLFLOWER, ET AL., THE CITY OF ARCADIA, AND WESTERN STATES PETROLEUM ASSOCIATION
Review of January 26, 2000 Action of the Regional Board
and
Actions and Failures to Act
by both the
California Regional Water Quality Control Board,
Los Angeles Region and Its Executive Officer
Pursuant to Order No. 96-054,
Permit for Municipal Storm Water and Urban Run-Off Discharges Within
Los Angeles County
[NPDES NO. CAS614001]

SWRCB/OCC FILES A-1280, A-1280(a) and A-1280(b)

BY THE BOARD:

On July 15, 1996, the Los Angeles Regional Water Quality Control Board (Regional Water Board) issued a revised national pollutant discharge elimination system (NPDES) permit in Order No. 96-054 (permit) to the 85 incorporated cities and the county within Los Angeles County (the County).[1] The permit covers storm water discharges from municipal separate storm sewer systems throughout the County.[2]

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[1] This was the second storm water permit adopted for Los Angeles County and its cities. The first permit was the subject of an earlier Order. (In the Matter of Natural Resources Defense Council, Inc., Order WQ 91-04). In this permit, the County is designated as the Principal Permittee, and each city is designated as a permittee. The County is required to submit various documents on behalf of all of the permittees.

[2] The Regional Water Board has since issued a separate permit for one city, Long Beach. The relevant provisions of the Long Beach permit are similar to those in Order No. 96-054.

The permit contains provisions for the regulation of storm water discharges from development planning and construction.[3] Pursuant to these provisions, the County was required to submit Standard Urban Storm Water Mitigation Plans (SUSMPs).[4] The SUSMPs are plans that designate best management practices (BMPs) that must be used in specified categories of development projects. The County submitted SUSMPs, but the Regional Water Board approved the SUSMPs only after making revisions. The Executive Officer issued the revised SUSMPs on March 8, 2000.[5]

On February 25, 2000, the State Water Resources Control Board (State Water Board or Board) received a petition for review of the actions and failures to act regarding the SUSMPs from a number of cities, the Building Industry Association of Southern California and the Building Industry Legal Defense Foundation (jointly referred to as Cities). A second petition was received from the City of Arcadia. And a third petition was received from the Western States Petroleum Association (WSPA). On April 7, 2000, the petitioners filed amendments to their petitions, concerning the March 8, 2000 issuance of the SUSMPs. The Cities' amendment also revised the list of cities included in the petition. The Cities' petition now includes 32 cities. The petitions are legally and factually related, and have therefore been consolidated for purposes of review.[6] The petitioners also requested a stay of the SUSMPs. This request was denied by letter, dated May 11, 2000.

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[3] Permit, Part 2.III. These provisions focus more on post-construction impacts of development than on discharges from construction activities.
[4] Permit, Part 2.III.A.1.c.
[5] These are referred to herein as the Final SUSMPs. The Final SUSMPs also apply to Long Beach, even though it is subject to a separate permit.
[6] Cal. Code of Regs., tit. 23, section 2054.

On June 7 and 8, 2000, the Board held a hearing in Torrance. Several entities, including the petitioners, the Regional Water Board, and several environmental groups[7], were designated parties. The evidence from that hearing has been included in the record before the Board. The record for comments on the petition was kept open until the end of the hearing. The parties were allowed to submit post-hearing briefs.[8]

I. BACKGROUND

In prior Orders[9] this Board has explained the need for the municipal storm water programs and the emphasis on BMPs in lieu of numeric effluent limitations. The emphasis for preventing pollution from storm water discharges is still on the development and implementation of effective BMPs, but with the expectation that the level of effort will increase over time. In its Interim Permitting Approach[10], the United States Environmental Protection Agency (U.S. EPA) stated that first-round permits should include BMPs, and expanded or better-tailored BMPs in subsequent permits where necessary to attain water quality standards. Dischargers, consultants, and academic institutions in California and nationwide have conducted numerous studies on the effectiveness of BMPs and appropriate design standards. While many questions are still

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[7] The environmental groups are Natural Resources Defense Council, Inc., Santa Monica BayKeeper, and Heal the Bay.

[8] There are several documents that were not timely received and, therefore, are not made a part of the record before the Board. The hearing notice specified that all evidence from parties must be received by May 31, 2000. The Regional Water Board submitted documents on June 6, 2000. The hearing notice specified that policy statements were due by the close of the hearing. Several comment letters were received June 12, 13, and 19, 2000. None of these submittals are a part of the record. The post-hearing briefs were subject to a 10-page limit. The environmental groups submitted objections to the post-hearing brief submitted by the Cities. First, the environmental groups challenge the length of the brief. All briefs were subject to a 10-page limit. The Cities submitted a 10-page brief, with a 22-page attachment showing extensive proposed revisions to the SUSMPs. This submittal violates the page limit, and only the brief is considered part of the record. Second, the environmental groups claim that an e-mail message referred to by the petitioners is subject to attorney-client privilege and should not have been used in this hearing. This e-mail message, from the Regional Water Board's counsel to one of its engineers, was placed in the Regional Water Board's administrative record and submitted to the State Water Board. Any privilege that may have attached to the message has been waived and no longer exists. Finally, the post-hearing brief from the City of Arcadia was received late and will not be considered. Documents submitted late for interim deadlines (such as the deadline for submitting responses to the petitions), have been included in the record.

[9] See, especially Orders WQ 91-03 (In the Matter of Citizens for a Better Environment et al.) and WQ 91-04.

[10] Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits. (61 Federal Register 57425.)

outstanding, more is expected of municipal dischargers, and many are implementing more effective programs.

While storm water management plans are improving, our knowledge of the impacts is also growing. Urban runoff has been determined to be a significant contributor of impairment to waters throughout the state. In Los Angeles specifically, beach closures are sometimes associated with urban runoff. In adopting the SUSMPs, the Regional Water Board took note of the urgent need for preventing further pollution from urban runoff and storm water discharges.

It is important to emphasize the role of the SUSMPs within the totality of regulating storm water discharges, and the purpose of these particular control measures. The requirement to prepare SUSMPS was part of the development controls in the permit. In addition to development controls, the permit requires education, public outreach, programs to restrict illicit connections and discharges, and controls on public facilities. In the context of the entire effort required by the permit, the development controls can be seen as preventing the existing situation from becoming worse.

The Final SUSMPs include a list of mandatory BMPs for nine categories of development. There are provisions that are applicable to all categories and lists of BMPs for individual categories. Requirements applicable to all categories include provisions to limit erosion from new development and redevelopment, requirements to conserve natural areas, protection of slopes and channels, and storm drain stenciling. Examples of BMPs specific to categories of discharge include design of loading docks for commercial projects and design of fueling areas for retail gasoline outlets. In most respects, the Final SUSMPs were similar to those proposed by the County. The significant departures were the inclusion of a numeric design standard for structural or treatment control BMPs, and the inclusion of certain types of projects that were not

covered in the County's proposal. The design standard creates objective and measurable criteria for the amount of runoff that must be treated or infiltrated by BMPs.

The record indicates that the purpose of the development controls, including the SUSMPs, is not simply to prevent pollution associated with construction runoff. As the petitioners point out, construction discharges are already subject to this Board's Statewide Construction Permit. The development controls in the SUSMPs, on the other hand, focus on post-construction runoff. They are aimed at limiting not just the pollutants in runoff from the new development, but also the volume of runoff that enters the municipal storm sewer system. By limiting runoff from new development, the SUSMPs prevent increased impacts from urban runoff generally. There is adequate technical information in the record to show that by controlling the volume of runoff from new development, BMPs can be effective in reducing the discharge of pollutants in storm water runoff.

The Procedure for Adopting the SUSMPs

The permit requires a program for controls on Development Planning and Construction. It involved a number of submissions by the County in consultation with the Cities. The first step was submission of a checklist for determining priority projects and exempt projects. The checklist was due on January 30, 1998. A list of recommended BMPs for development projects was also due on that date. The SUSMPs were due within six months of approval of the BMP list, and were to incorporate BMPs for certain categories of development. Following approval of the SUSMPs, the cities and County were to implement development programs for priority projects, consistent with the BMP list and the SUSMPs.

The BMP list was not approved until April 22, 1999. Thereafter, the County submitted proposed SUSMPs on July 22, 1999. The Regional Water Board held a public workshop on

August 10, 1999. Following the workshop, the County submitted revisions to the SUSMPs on August 12, 1999. On August 16, 1999, the Regional water Board gave notice that it would discuss the SUSMPs in a public meeting on September 16, 1999. There was significant discussion at that meeting regarding the intent of the Executive Officer to approve the SUSMPs, but with revisions including a numeric design standard. At the conclusion of the meeting, the Regional Water Board members asked the Executive Officer to revise the SUSMPs and bring them back to another meeting. On December 7, 1999, the Executive Officer circulated revised SUSMPs for public review. This document incorporated a numeric design standard and made other revisions to the permittees' proposal. The Regional Water Board held a hearing on the SUSMPs on January 26, 2000. At that meeting, the Regional Water Board endorsed the SUSMPs revised by the Executive Officer, but directed him to make further changes. The Executive Officer issued the Final SUSMPs on March 8, 2000.

The Contents of the Final SUSMPs

The permit provides that the SUSMPs must incorporate the appropriate elements of the BMP list and, at a minimum, apply to seven development categories: 100-plus home subdivisions; 10-plus home subdivisions; 100,000-plus square foot commercial developments; automotive repair shops; retail gasoline outlets; restaurants; and hillside single-family dwellings.

The SUSMPs proposed by the County applied to these seven categories. Various BMPs applied to the different categories, and the SUSMPs contained narrative mitigation requirements for source control and treatment. The July proposals stated:

> "The development must be designed so as to mitigate (infiltrate and/or treat) the site runoff generated from impervious directly connected areas that may contribute pollutants of concern to the storm water conveyance system."

There were no numeric design criteria for mitigation. According to various participants, earlier County drafts had included design standards to mitigate flows from 0.6-inch storm events. But any numeric criteria had been removed from the version that was submitted.

In its revised SUSMPs, submitted on August 12, the County explained in its cover letter that the mitigation language did not mean that all runoff must be mitigated. Rather, the County's intent was to omit a numerical standard from the SUSMPs. The revised SUSMPs no longer referred to mitigation at all. Instead, the following language replaced the mitigation requirement:

> "The development must be designed so as to minimize, to the maximum extent practicable (MEP), the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas (DCIA), to the storm water conveyance system as approved by the building official."

The Final SUSMPs, as approved by the Executive Officer and the Regional Water Board, included several revisions from the County's submittal. The revision that is of greatest concern to the petitioners is the addition of Design Standards for Structural or Treatment Control BMPs.[11] The design standards require that developments subject to the SUSMPs shall be designed to mitigate storm water runoff (by treatment or infiltration) from one of the following:

> "1. The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area..., or
>
> 2. The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment..., or
>
> 3. The volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or
>
> 4. The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event."

[11] The Final SUSMPs also include the narrative language quoted from the County's August 22, 1999 proposal.

The Final SUSMPs also applied to two additional categories of development: parking lots over 5,000 square feet or with 25 or more spaces and exposed to storm water, and to developments in environmentally-sensitive areas. Other revisions included application to all projects in the categories instead of discretionary projects only and the definition of redevelopment.

II. CONTENTIONS AND FINDINGS[12]

Contention: The petitioners contend that the Regional Water Board erred in not complying with the Administrative Review Process within the permit, and acted arbitrarily and capriciously and in violation of the Clean Water Act and state law.

Finding: The permit required the County, in consultation with the cities subject to the permit, to submit SUSMPs. The permit includes some general minimum requirements for the SUSMPs.[13] The Executive Officer is granted authority to approve the SUSMPs.[14]

The permit also contains an administrative review process.[15] The permit states that the administrative review process "formalizes the procedure for review and acceptance of reports and documents" and "provides a method to resolve any differences in compliance expectations between the Regional Board and Permittees, prior to initiating enforcement action."[16] Following this introductory statement, the permit includes two procedures. The first is for review and approval or disapproval of reports and documents. The second is the dispute resolution section that must be followed prior to enforcement action.

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[12] This Order does not address all of the issues raised by the petitioners. The Board finds that the issues that are not addressed are insubstantial and not appropriate for State Water Board review. (See *People v. Barry* (1987) 194 Cal.App.3d 158, [239 Cal.Rptr. 349], Cal. Code Regs., tit. 3, § 052.)
[13] Permit, Part 2, III.A.1.c.
[14] Permit, Part 2, III.A.2.
[15] Permit, Part 2, I.G.
[16] *Id.*

The process for review of documents that are subject to the Executive Officer's approval is that the Executive Officer will notify the permittees of the results of the review and approval or disapproval within 120 days. If the Executive Officer does not do so, the permittees must notify the Regional Water Board of their intent to implement the documents without approval. The Executive Officer then has 10 days to respond, or the permittees may implement the program and the Executive Officer may not make modifications.

The dispute resolution procedure is to be used when the Executive Officer determines that a permittee's storm water program is insufficient to meet the permit's provisions. The Executive Officer must send a "Notice of Intent to Meet and Confer" with the permittee. A meet and confer period then ensues, resulting in a written "Storm Water Program Compliance Amendment (SWPCA)." The permittee is provided time to comply with the SWPCA. The Executive Officer is not allowed to take enforcement action against a permittee until the Executive Officer notifies the permittee in writing that the administrative review process has been exhausted and that a violation exists warranting enforcement.

The petitioners contend that the Executive Officer failed to notify the permittees that their SUSMPs were inadequate within 120 days of its submittal. The petitioners also argue that, by revising the SUSMPs without pursuing the dispute resolution process, the Regional Water Board "violated" the terms of the permit.

The provision for review of documents, which clearly includes the SUSMPs, requires that the Executive Officer notify the permittees of the results of the review and approval or disapproval within 120 days. The County submitted the revised SUSMPs on August 12, 1999. Within 120 days, the Regional Water Board held a workshop where staff expressed their concerns with the SUSMPs. Also within 120 days the Regional Water Board itself held a public

meeting where there was extensive discussion and concern by board members that the SUSMPs did not include a numeric standard. And, prior to any notification by the permittees that they would proceed with implementing their SUSMPs, the Regional Water Board held a hearing January 26, 2000, where it directed the Executive Officer to issue the SUSMPs with revisions. The Executive Officer did so on March 8, 2000.

It is clear from the record that the Executive Officer, and the Regional Water Board itself, did inform the permittees that the SUSMPs were inadequate. There was no requirement for a specific form for expressing disapproval of documents. The extensive discussion and meetings on the need for revisions to the SUSMPs, and the Executive Officer's approval of revised SUSMPs, plainly refutes the allegation that the Regional Water Board never notified the permittees of its disapproval of the County's proposed SUSMPs.

The permittees also claim that the Regional Water Board "violated" the permit by failing to institute the meet and confer process.[17] The dispute resolution process, which includes meet and confer, did not apply to the decision to disapprove the proposed SUSMPs. That process is only required when the Regional Water Board ultimately takes an enforcement action against a permittee. It is separate from the process for review and approval or disapproval of documents, and does not even appear to relate to possible enforcement actions for submission of inadequate documents. This is illustrated by the fact that the provision regarding documents refers to submittals from both the Principal Permittee and the individual permittees, while the dispute resolution provision refers only to the permittees. This distinction is relevant because the County is charged with submitting the documents, while the individual permittees are responsible for compliance. A fair reading of the entire section on the administrative review process is that the

[17] We note that permits are issued to permittees to allow discharges to waters of the state. It is only permittees, and not Regional Water Boards, who can be charged with violating permits.

review and approval or disapproval of documents applies to submission of documents by the County on behalf of the cities, while the dispute resolution process applies to enforcement actions against any permittees for failing to implement adequate programs.

Contention: The petitioners contend that the Regional Water Board was not authorized to revise the SUSMPs to add more stringent requirements.

Finding: The petitioners contend that the mitigation standards in the SUSMPs are more stringent than the requirement in the permit to reduce pollutants in storm water runoff to the maximum extent practicable (MEP)[18]. The issue of what level of protection constitutes MEP will be discussed *Infra*, in the discussion of the reasonableness of the numeric standards. But the petitioners also make certain procedural claims on this point. They argue that in approving the BMP list, the Regional Water Board determined that those BMPs constituted MEP and that the Board could not add additional BMPs in the SUSMPs. They also contend the Regional Water Board itself had no authority to "usurp" the Executive Officer's role in reviewing the SUSMPs.[19] Finally, the petitioners contend that the Regional Water Board was not authorized to mandate a program for the permittees without amending the permit.

The permit requires the County to submit a list of BMPs for approval. The Regional Water Board approved this list. Following approval of the list, the County was required to submit the SUSMPs, which must "incorporate the appropriate elements of the recommended BMPs list."[20] The petitioners contend that by approving the list, the Regional Water Board determined that those BMPs constituted MEP, and that under the terms of the permit the Regional Water Board could not require additional BMPs.

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[18] The technology-based standard for controls under municipal storm water permits is MEP. For a fuller discussion of this standard, see Order WQ 91-03.

[19] It is undisputed that, at its January 26, 2000 meeting, the Board directed the Executive Officer to make additional revisions to the SUSMPs.

[20] Permit, Part 2, III.A.1.c.

In addressing this contention, we face what appears to be a fundamental misunderstanding of the numeric design standards on the part of the petitioners. The design standards are objective criteria that developers must achieve in designing their BMPs. The design standards are not separate BMPs. The standards tell what magnitude of storm event the BMPs must be designed to treat or infiltrate. They do not specify the BMPs that must be employed.

The SUSMPs as submitted by the County specify BMPs for various categories of development. Many of these BMPs are designed to minimize the pollutants in storm water runoff, by reducing flow through infiltration or by treatment. Examples of BMPs proposed by the County include infiltration basins and trenches, oil/water separators, and media filtration. The County's proposed SUSMPs also included language requiring minimizing the introduction of pollutants to the storm water conveyance system. That language remains unchanged in the Final SUSMPs. The only significant difference between the two versions of the SUSMPs was that the Regional Water Board established numeric criteria for designing the BMPs.

In adopting the Final SUSMPs, the Regional Water Board based its decision on the MEP standard.[21] The Regional Water Board did not significantly revise the BMP list or specify further the actions that developers must take to comply with the SUSMPs. Thus, we find that the Regional Water Board did not inappropriately revise its determination of what constituted MEP.

The Regional Water Board is the political body responsible for water quality control in the Los Angeles region.[22] While the Regional Water Board may delegate specified powers and duties to its Executive Officer,[23] it can at any time act on its own behalf. The fact that the Board authorized its Executive Officer to approve the SUSMPs in the permit did not mean that the Board thereby denied itself the opportunity to provide direction to the Executive Officer in his

[21] Resolution R-00-02.
[22] Water Code sections 13200 and 13225.
[23] Water Code section 13223.

approval. Such an interpretation of its delegation authority would result in an improper failure of the Board to assume responsibility for water quality in the region.

We also find that the Regional Water Board was authorized to revise the SUSMPs to achieve compliance with the permit's requirements. The SUSMPs are a part of implementation of the permit. Because the permit regulates storm water discharges throughout the entire Los Angeles region and it is implemented by 85 cities and the County, it is obvious that the permit could not spell out every detail of the program for the five-year term of the permit. Instead, the implementation is through the submission, review and approval, and implementation of various programs, including the SUSMPs.[24] Where it receives a submission that it finds is not consistent with the requirements of the permit, it is reasonable for the Regional Water Board to be able to require revisions. The Regional Water Board is not required to amend the permit each time it approves a submittal or approves a submittal with revisions. On the other hand, if the Regional Water Board's action in requiring revisions is inconsistent with the terms of the permit, then the Board should not act without first amending the permit. While the Regional Water Board could have required the County to make the revisions rather than making them itself, we see no harm in the Regional Water Board's approach.

As will be discussed below, in most respects the Final SUSMPs are consistent with the permit. But there are some portions of the SUSMPs that are not consistent, and in those cases the SUSMPs provisions are further revised in this Order.

Contention: The petitioners make various procedural claims, including that they were denied due process, and that the Regional Water Board violated the Administrative Procedure

[24] A fuller discussion of the use of storm water management plans to incorporate a developing program is found in Order No. WQ 91-03.

Act, the California Environmental Quality Act (CEQA), and the California Constitution, Article XIII B, section 6 (regarding state mandates).

Finding: The petitioners point out that at the January 26, 2000 Regional Water Board hearing, there was some confusion over late changes to the SUSMPs and they contend they were not provided adequate opportunity to comment. There was significant discussion of the SUSMPs over several months. We do not agree with the petitioners that a program of this magnitude must necessarily take years to develop. But we are concerned that at the January 26, 2000 hearing, interested persons and permittees were not given adequate time to review late revisions or to comment on them. Given the intense interest in this issue, the Regional Water Board should have diverged from its strict rule limiting individual speakers to three minutes and conducted a more formal process. Such a process should provide adequate time for comment, including continuances where appropriate.[25] But to the extent the Regional Water Board's process caused any harm, this Board cured those harms. We held a two-day hearing in Los Angeles County, where all parties were allowed significant time to present their positions and testimony. In addition, we allowed the introduction of new evidence that had not been presented to the Regional Water Board. At this point, all parties have been afforded a full opportunity to review the Final SUSMPs, to present their positions and evidence, and to engage in cross-examination. The petitioners' due process rights have been protected.

The Board has already addressed the contentions regarding compliance with other laws in prior decisions. The Administrative Procedure Act exempts the adoption of permits from its requirements.[26] While the SUSMPs are not a permit, they are implementing documents for a

[25] For future adjudicative proceedings that are highly controversial or involve complex factual or legal issues, we encourage regional water boards to follow the procedures for formal hearings set forth in Cal. Code of Regs., tit. 23, section 648 et seq.

[26] Government Code section 11352; See, Order No. 95-4 (In the Matter of the City and County of San Francisco).

permit, and are therefore subject to the exemption. Moreover, they are relevant only to this permit, and are not a general rule of application. The constitutional provisions regarding state mandates also do not apply to NPDES permits.[27] As will be explained below, the SUSMPs as revised herein, are consistent with MEP and therefore are federally mandated. The provisions of CEQA requiring adoption of environmental documents also do not apply to NPDES permits.[28] Again, as an implementing document for the permit, there is no requirement for a separate CEQA analysis.[29]

Contention: The petitioners contend that the SUSMPs do not properly apply the maximum extent practicable standard.

Finding: The permit, consistent with Clean Water Act section 402(p)(3)(B)(iii), requires controls to reduce the discharge of pollutants to the maximum extent practicable, or MEP.[30] In approving the Final SUSMPs, the Regional Water Board acknowledged that one of the primary objectives of the municipal storm water program is the requirement to reduce the discharge of pollutants from storm water conveyance systems to the MEP.[31] While all parties appear to agree that the standard for the SUSMPs is MEP, they disagree about what level of effort is necessary to comply with that standard.

The petitioners approach this issue from two angles. First, they contend that the SUSMPs will not provide water quality benefits that reflect MEP. Second, they contend that there could be adverse impacts on groundwater quality that have not been adequately evaluated.

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[27] See, Order No. WQ 90-3 (In the Matter of San Diego Unified Port District).
[28] Water Code section 13389.
[29] We do note with interest the environmental groups' comment that if the permittees believed it was necessary to comply with the APA and CEQA prior to adoption of the SUSMPs, then they themselves would have violated those acts in their submissions of the proposed SUSMPs.
[30] Permit, Finding 13.
[31] Final SUSMPs, at page 2; Resolution No. R-00-02, at page 3.

Storm Water Design Standards as MEP

In adopting the Final SUSMPs, the Regional Water Board found that many rivers and streams in Los Angeles County are impaired for pollutants found in storm water and urban runoff, and that storm water runoff carries pollutants from nearly all types of developed properties.[32] Pollutant loading from the aggregate of development in the basin results in impairments from sediments, metals, complex organic compounds, oil and grease, nutrients, and pesticides.[33] The Final SUSMPs reflect two goals: to reduce the amounts of these pollutants in runoff and to reduce the ability of runoff to act as a conveyance system to deliver more pollutants to receiving waters. The Final SUSMPs, which include lists of BMPs and design standards requiring treatment or infiltration, address these two goals.

Clean Water Act section 402(p)(3)(B)(iii), which sets forth the requirements for establishing MEP in municipal storm water permits, provides that such permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." The United States Environmental Protection Agency (U.S. EPA), in a guidance document, explains that BMPs should be used in first-round storm water permits, and "expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards."[34] The Clean Water Act, as interpreted by U.S. EPA, does require that, in a second-round permit,[35] expanded BMPs may be appropriate. In light of the number of water

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[32] Resolution No. R-00-02.
[33] *Id.*
[34] Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits, 61 Federal Register 57425 (1996).
[35] The original permit was issued in 1990. The 1996 permit is a second-round permit.

bodies impaired by runoff in Los Angeles County, it was appropriate to expand the scope of BMPs during the permit term.

The regulations implementing section 402(p) specifically require municipalities to have controls to reduce the discharge of pollutants from their storm sewer systems that "receive discharges from areas of new development and significant redevelopment," including post-construction discharges.[36] Clearly, it was appropriate for the Regional Water Board to require BMPs for new development and significant redevelopment. The permittees, who submitted their own version of SUSMPs with listed BMPs for categories of development, appear to have no real quarrel with this general mandate.

This Board has already endorsed requirements to limit the flow of the "first flush" of storm water, which may contain more significant pollutants.[37] The permittees' own version of the SUSMPs required mitigation of storm water runoff by treatment or infiltration, thus conceding the propriety of these two approaches to lessening the impact of storm water discharges. The crux of the disagreement is that the Regional Water Board added numeric design standards to establish the amount of runoff that must be treated or infiltrated, and required the mandatory application of these standards to categories of development.

The addition of measurable standards for designing the BMPs provides additional guidance to developers and establishes a clear target for the development of the BMPs. The U.S. EPA guidance manual suggests the use of design criteria and performance standards for post-construction BMPs.[38] The numeric criteria the Regional Water Board adopted essentially

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[36] 40 CFR section 122.26(d)(2)(iv)(A)(2).
[37] In the Matter of National Steel and Shipbuilding Company, et al., Order WQ 98-07, at slip opinion 7.
[38] Guidance Manual for the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Strom Sewer Systems, at page 6-4 (November 1992).

requires that 85 percent of the runoff from the development be infiltrated or treated.[39] In adopting these standards, the Regional Water Board based its decision on a research review of standards in other states and a statistical analysis of the rainfall in the area. The standard was set to gain the maximum benefit in mitigation while imposing the least burden on developers.[40] In light of the evidence of the use of this or more stringent standards in other states, the expert testimony supporting this standard, the endorsement by U.S. EPA in its comments, and the cost-effectiveness of its implementation (discussed below), the Regional Water Board acted appropriately in determining that the standards reflect MEP.[41]

We also find that the Regional Water Board appropriately applied these standards to seven of the categories listed in the SUSMPs: single-family hillside residences, 100,000 square foot commercial developments, automotive repair shops, restaurants, home subdivisions with 10 to 99 housing units, home subdivisions with 100 or more housing units, and parking lots with 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff.[42] These categories, except for parking lots, were already targeted for special treatment in the permit. The evidence shows that each listed category can be a significant source of pollutants and/or runoff following development. It is appropriate that the design standards apply so that BMPs for these categories of development result in the infiltration or treatment of a significant about of the runoff.

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[39] Four different methods of calculation are permitted, so the percentage of capture may vary slightly.

[40] At the hearing in this matter, Regional Water Board staff explained that the standard was set at the bottom of the "knee" of the curve where the benefits of the mitigation requirements decrease and the cost increases. Other states have set the standard higher along this curve, requiring 90 to 95 percent mitigation.

[41] This conclusion in no way departs from our acceptance of BMPs in lieu of numeric effluent limitations in storm water permits. (See, e.g., Order WQ 91-03 and Order WQ 91-04.) The numeric standard is a design standard for BMPs. It does not quantify or limit the pollutants in the effluent. It also does not specify which of the listed BMPs must be employed.

[42] As discussed below, this Board is revising the SUSMPs to delete the application of the design standards to retail gasoline outlets and to locations within or directly adjacent to or discharging directly to environmentally-sensitive areas.

Potential Impacts on Ground Water

The petitioners contend that infiltration of runoff may lead to ground water pollution, and that the Regional Water Board did not properly consider such potential impacts. The mitigation standards provide for a waiver where there is a risk of ground water contamination because a known unconfined aquifer lies beneath the land surface or an existing or potential underground source of drinking water is less than ten feet from the soil surface.[43] The Final SUSMPs also include a discussion on how to use infiltration so that the risk of contamination of groundwater is reduced, and where infiltration is not appropriate.[44]

The Regional Water Board did consider the potential impacts to groundwater from infiltration, and included appropriate limitations and guidance on its use as a BMP. These provisions will ensure adequate protection of groundwater from any adverse impacts due to infiltration.

Contention: The petitioners contend the Regional Water Board failed to show that the SUSMPs as adopted are cost-effective and that the benefits to be obtained outweigh the costs.

Finding: The petitioners refer to the Preamble to the Phase II storm water regulations[45] as the basis for their economic argument. The quoted language, however, does not wholly support the petitioners' contention. The Preamble states that President Clinton's Clean Water Initiative clarifies "that the maximum extent practicable standard should be applied in a site-specific, flexible manner, taking into account cost considerations as well as water quality effects."[46] It is clear that cost should be considered in determining MEP; this does not mean that

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[43] Final SUSMP, page 14.
[44] *Id.*, at page 15.
[45] 64 Federal Register 68722 and following. These regulations do not apply to the permit, but the general language on MEP is relevant to EPA's interpretation of the standard.
[46] 64 Federal Register 68722, 68732 (December 8, 1999).

the Regional Water Board must demonstrate that the water quality benefits outweigh the economic costs.

While the standard of MEP is not defined in the storm water regulations or the Clean Water Act, the term has been defined in other federal rules. Probably the most comparable law that uses the term is the Superfund legislation, or CERCLA, at section 121(b). The legislative history of CERCLA indicates that the relevant factors, to determine whether MEP is met in choosing solutions and treatment technologies, include technical feasibility, cost, and state and public acceptance.[47] Another example of a definition of MEP is found in a regulation adopted by the Department of Transportation for onshore oil pipelines. MEP is defined as to "the limits of available technology and the practical and technical limits on a pipeline operator . . . ."[48]

These definitions focus mostly on technical feasibility, but cost is also a relevant factor. There must be a serious attempt to comply, and practical solutions may not be lightly rejected. If, from the list of BMPs, a permittee chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a permittee employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP requires permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive. Thus while cost is a factor, the Regional Water Board is not required to perform a cost-benefit analysis.

In reviewing the record, it is apparent that the Regional Water Board did evaluate the cost of the SUSMPs. While the petitioners claim there is no evidence in the record to show the

[47] 132 Cong. Rec. H 9561 (Oct. 8, 1986).
[48] 49 CFR section 194.5.

SUSMPs are necessary and cost effective, the opposite is true. The record is replete with documentation of costs of pilot mitigation projects, studies from similar programs in other states, and research studies. The Regional Water Board complied with the requirement to consider cost.

The Regional Water Board found that the cost to include BMPs that will meet the mitigation criteria will be one to two percent of the total development cost. This amount appears reasonable, especially in light of the amount of impervious surface already in Los Angeles County and the impacts on impaired water bodies. In considering the cost of compliance, it is also important to consider the costs of impairment. The beach closures in the Los Angeles region, well documented in the evidence, have reached critical proportions. These beach closures clearly have a financial impact on the area, and should be positively affected by the SUSMPs.

We do note that there could be further cost savings for developers if the permittees develop a regional solution for the problem. We recommend that the cities and the County, along with other interested agencies, work to develop regional solutions so that individual dischargers are not forced to create numerous small-scale projects. While the SUSMPs are an appropriate means of requiring mitigation of storm water discharges, we also encourage innovative regional approaches.[49]

Contention: The petitioners have raised contentions regarding details of the SUSMPs, including the amount of time allowed for inclusion of SUSMPs in local ordinances, and their application to both "discretionary" and "non-discretionary" projects. In addition, during the hearing certain ambiguities in the wording of the Final SUSMPs became apparent, including the provisions regarding redevelopment and environmentally-sensitive areas. In this portion of the

[49] We note that the SUSMPs as written do not in any way preclude the development of regional solutions approved by the Regional Water Board as a means to comply with the BMP and design standard requirements.

Order we address these issues and also the application of the design standards to retail gasoline outlets (RGOs) and the waiver funding requirements.

Finding: The testimony at the hearing in this matter revealed that there are specific provisions of the SUSMPs that create confusion as to the types of development projects subject to the mitigation design standards. The petitioners also contend that application of the standards to specific types of development either is unreasonable or is inconsistent with the terms of the permit. The specific requirements are discussed below.

Retail Gasoline Outlets

Petitioner WSPA contends that RGOs should be excluded from the SUSMPs. Its petition raised the same general contentions as the other petitioners, but at the hearing WSPA presented evidence specific to RGOs. In particular, WSPA raised questions about the propriety of applying the design standards for BMPs to RGOs. In considering this issue, we conclude that construction of RGOs is already heavily regulated and that owners may be limited in their ability to construct infiltration facilities. Moreover, in light of the small size of many RGOs and the proximity to underground tanks, treatment may not always be feasible, or safe. The mandatory BMPs that are included in the SUSMPs may be adequate to achieve MEP at RGOs, but the Regional Water Board should add additional mandatory BMPs, such as use of dry cleanup methods (e.g. sweeping) for removal of litter and debris, use of rags and absorbents for leaks and spills, restricting the practice of washing down hard surfaces unless the wash water is collected and disposed of properly, annual training of employees on proper spill cleanup and waste disposal methods, and the inclusion of BMPs to address trash receptacle areas and air/water supply

areas.[50] We conclude that because RGOs are already heavily regulated and may be limited in their ability to construct infiltration facilities or to perform treatment, they should not be subject to the BMP design standards at this time, and recommend that the Regional Water Board undertake further consideration of a threshold relative to size of the RGO, number of fueling nozzles, or some other relevant factor. This Order should not be construed to preclude inclusion of RGOs in the SUSMP design standards, with proper justification, when the permit is reissued.

Redevelopment Projects

The SUSMPs were written to apply to new development and to some types of redevelopment in nine categories of projects. The definition of "redevelopment" reflected the intent of the Regional Water Board to define the scope of redevelopment projects subject to the requirements. That definition[51], however, was somewhat confusing, and it was apparent from testimony at the hearing that the parties had different understandings of the scope of redevelopment subject to the SUSMPs. In their post-hearing briefs, the various parties appeared to agree on the actual intent of the Regional Water Board in including redevelopment in the SUSMPs. This intent was to include redevelopment that adds or creates at least 5,000 square feet of impervious surface to the original development and, where the addition constitutes less than 50 percent of the original development, to limit the application of the BMP design standards to the addition.

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[50] These BMPs are from a list of BMPs in a publication of the California Storm Water Quality Task Force. (Best Management Practice Guide – Retail Gasoline Outlets. March 1997.) This publication includes BMPs in addition to those listed in the SUSMPs. All BMPs recommended in this publication should be mandated.

[51] The SUSMPs state: "Redevelopment" means, on an already developed site, the creation or addition of at least 5,000 square feet of impervious surfaces or the creation or addition of fifty percent or more of impervious surfaces or the making of improvements to fifty percent or more of the existing structure. Redevelopment includes, but is not limited to: the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces.

While some parties requested further requirements for development, it appears that the Regional Water Board's original intent was relatively simple to apply and results in a fair and appropriate application of the SUSMPs' requirements to redevelopment. Therefore, we will revise the definition in the SUSMPs accordingly.

Environmentally-Sensitive Areas

The permit required that the SUSMPs address at least seven development categories.[52] The final SUSMPs added two more categories: parking lots of 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff; and location within or directly adjacent to an environmentally-sensitive area (ESA). The petitioners contend that the addition of ESAs was inappropriate because the permit refers only to "development categories"[53] and ESA is a location category.

Whether or not the Regional Water Board went beyond the permit's terms in including this category, we find a fundamental problem with the language of the SUSMPs regarding ESAs. All of the other categories are relatively simple to apply because they describe the types of development that fall within the category. For instance, the threshold for a commercial development is 100,000 square feet. If the development is smaller, it is not subject to the SUSMPs. But for developments within ESAs, the SUSMPs contain no threshold. This absence led to speculation by the petitioners that something as small as a new patio on a home in an ESA would make the SUSMPs applicable. The Regional Water Board, at the hearing and in its post-hearing brief, conceded that there should be some threshold. While the Regional Water Board

[52] The categories listed in the permit are: single-family hill residences, 100,000 square-foot commercial developments, automotive repair shops, retail gasoline outlets, restaurants, home subdivisions with 10 to 99 housing units, and home subdivisions with 100 or more housing units. Permit, Part 2. III.A.1.c.
[53] *Id.*

did recommend a specific threshold, we believe that it is inappropriate for this Board to add a threshold that has not been fully discussed by all interested persons.

While it may be appropriate to include more stringent controls for developments in ESAs, we also note that such developments are already subject to extensive regulation under other regulatory programs. Moreover, in light of the permit language limiting the SUSMPs to development categories, ESAs are not an appropriate category within the SUSMPs. The Regional Water Board may choose to consider the issue further when it reissues the permit.

Discretionary and Non-Discretionary, or Ministerial, Projects

The petitioners contend that the SUSMPs should apply only to projects that are considered "discretionary" within the meaning of California Environmental Quality Act (CEQA).[54] They argue that the inclusion of non-discretionary, or ministerial, projects is inconsistent with the terms of the permit.

The permit provisions on development projects do refer to "discretionary" projects in several places. The permittees are directed to develop a checklist for determining priority and exempt projects.[55] Priority projects are defined as development and redevelopment projects requiring discretionary approval, which may have a potential significant effect on storm water quality.[56] The permittees are also required to develop a BMP list.[57] In developing the SUSMPs, the permittees are required to incorporate appropriate elements of the BMP list.[58] Next, the permittees must develop a program on planning control measures for priority projects (which are limited to projects requiring discretionary approval), consistent with the list of BMPs and the

[54] Public Resources Code section 21000 *et seq.*
[55] Permit, Part 2, III.A.1.a.
[56] *Id.*
[57] Permit, Part 2, III.A.1.b.
[58] Permit, Part 2, III.A.1.c.

SUSMPs.[59] The permit further states that, in order to assure compliance with these requirements, the permittees must develop guidelines on preparing CEQA documents that link mitigation conditions to "local discretionary project approvals."[60]

Taken as a whole, the provisions of the permit appear to link the development requirements for SUSMPs to developments that receive discretionary approval by local governments, as defined in CEQA. The SUSMPs are an implementation tool for the permit and must be consistent with the permit. While the limitation of the SUSMPs to discretionary projects may not be sufficiently broad for an effective storm water control program, the Regional Water Board acted inappropriately in expanding the SUSMPs to include non-discretionary projects. The Regional Water Board may consider expanding the development controls beyond CEQA discretionary projects when it reissues the permit. But at this time, the SUSMPs must be revised so that they are limited to development projects requiring discretionary approval within the meaning of CEQA.[61]

Waiver Funding Requirement

Where a waiver is granted from the design standard requirements, the Final SUSMPs provide that the permittee must require the project proponent to transfer the cost savings to a storm water mitigation fund. The fund is to be operated by a public agency or a non-profit entity, to promote regional or alternative solutions for storm water pollution in the same storm watershed. The petitioners contend that the funding requirement will create an additional administrative burden.

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[59] Permit, Part 2, III.a.2.

[60] Permit, Part 2, III.a.3.b.

[61] We note that the Final SUSMPs already include a definition of "discretionary project" consistent with the definition in the CEQA guidelines. Final SUSMPs at page 4 of 25; Title 14, California Code of Regulations, section 15357. Apparently this definition was inadvertently retained after the Regional Water Board decided to expand the SUSMPs beyond discretionary projects.

The concept of a mitigation fund or "bank" is a positive idea for obtaining regional solutions to storm water runoff. As a long-term strategy, municipal storm water dischargers should work to establish regional mitigation facilities, which may be more cost-effective and more technically effective than mitigation structures at individual developments. But at this point there are not sufficient resources in place to require all permittees to establish such funds or to find appropriate non-profit organizations. Before mandating funding, preliminary questions should be answered, including who will manage the fund, what types of projects it will be used for, what entities can legally operate such funds, and how permittees will determine the amount of the assessments. It would be appropriate for the County to consider developing a program with the appropriate flood control agency, or as a model for the separate cities to develop. There may be suitable agencies to administer such funds, but the development of programs may take some time. The Regional Water Board should consider adopting such a program when it reissues the permit, after consultation with the appropriate local agencies.

III. CONCLUSIONS

Based on the discussion above, the Board concludes that:

1. The Regional Water Board complied with the procedural requirements of the permit, including the Administrative Review Process, in approving the Final SUSMPs.
2. The Regional Water Board was authorized to revise the SUSMPs by including more stringent requirements than the permittees had proposed.
3. The Regional Water Board complied with did not violate the Administrative Procedure Act, CEQA, or the Constitutional provisions on state mandates. The petitioners' due process rights have been protected
4. The Regional Water Board considered the costs of the SUSMPs, and acted reasonably in requiring these controls in light of the expected benefits to water quality.

5. The Final SUSMPs reflect a reasonable interpretation of development controls that achieve reduction of pollutants in storm water discharges to the maximum extent practicable.
6. The SUSMPs include adequate protections of groundwater quality from any impacts from infiltration.
7. The SUSMPs will be revised to clarify the intent of the Regional Water Board and to make them consistent with the permit. Specifically, retail gasoline outlets should not be subject to the BMP design standards because they are already heavily regulated and may be limited in their ability to construct infiltration facilities or to perform treatment. Redevelopment projects should be subject to the SUSMPs only if they result in creation or addition of 5,000 square feet of impervious surfaces. Environmentally-sensitive areas should not be listed as a category in the SUSMPs. The SUSMPs should only apply to discretionary projects. The requirement for funding by project proponents who receive waivers should be deleted. The SUSMPs will be amended as shown in the attachment to this Order.
8. In light of the revisions of the SUSMPs made by this Order, and to allow the permittees adequate time to adopt implementing ordinances, the deadline for adopting ordinances will be revised to January 15, 2001, and the effective date of the Final SUSMPs will be revised to February 15, 2001.

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IV. ORDER

IT IS HEREBY ORDERED that the Standard Urban Storm Water Mitigation Plans for Los Angeles County and Cities in Los Angeles County is revised consistent with the amendments attached hereto. In all other respects the petitions are dismissed.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on October 5, 2000.

AYE: Arthur G. Baggett, Jr.
Mary Jane Forster
John W. Brown

NO: None

ABSENT: Peter S. Silva

ABSTAIN: None

Maureen Marché
Administrative Assistant to the Board

[These amendments are to the Final SUSMP, as published March 8, 2000]

Page 3 of 25

First full paragraph:

All **discretionary development and redevelopment** projects that fall into one of ~~seven~~ **the following** categories are ~~identified in the Los Angeles County MS4 Permit as requiring~~ **subject to these** SUSMPs. These categories are:

- Single-family Hillside Residences
- 100,000 Square Foot Commercial Developments
- Automotive Repair Shops
- Retail Gasoline Outlets
- Restaurants
- Home Subdivisions with 10 to 99 housing units
- Home Subdivisions with 100 or more housing units
- **Parking lots 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff**

Second full paragraph:

~~The Regional Board Executive Officer has designated two additional categories subject to SUSMP requirements for the Los Angeles County MS4 Permit. These categories are:~~

- ~~Location within or directly adjacent to or discharging directly to an environmentally sensitive area, and~~
- ~~Parking lots 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff~~

Fourth full paragraph:

Permittees shall amend codes, if necessary, not later than ~~September 8, 2000~~ **January 15, 2001**, to give legal effect to the SUSMP requirements. The SUSMP requirements for projects identified herein shall take effect not later than ~~October 8, 2000~~ **February 15, 2001**.

Page 4 of 25

Delete definition of "Environmentally Sensitive Area"

Revise Definition of "Redevelopment":

"Redevelopment" means, on an already developed site, the creation or addition of at least 5,000 square feet of impervious surfaces ~~or the creation or addition of fifty percent or more of impervious surfaces or the making of improvements to fifty percent or more of the existing structure~~. Redevelopment includes, but is not limited to: the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routing maintenance activity; and land disturbing activities related with structural or impervious surfaces. **Where redevelopment results in an increase of less than fifty percent of the impervious surfaces of a previously existing development, and the existing development was not subject to these SUSMPs, the Design Standards apply only to the addition, and not to the entire development.**

Page 10 of 25

Add to "Limited Exclusion": Retail Gasoline Outlets

Page 15 of 25

Delete the first full paragraph (storm water mitigation funding)

applicable water quality standards, the facility operator shall comply with the requirements described in Receiving Water Limitation C.3.

13. State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) and San Francisco Bay Regional Water Board Order No. 91-011 (as amended by Order No. 92-116) are hereby rescinded.

F. REGIONAL WATER BOARD AUTHORITIES

1. Following adoption of this General Permit, Regional Water Boards shall:

   a. Implement the provisions of this General Permit, including, but not limited to, reviewing SWPPPs, reviewing annual reports, conducting compliance inspections, and taking enforcement actions.

   b. Issue other NPDES general permits or individual NPDES storm water permits as they deem appropriate to individual facility operators, facility operators of specific categories of industrial activities, or facility operators in a watershed or geographic area. Upon issuance of such NPDES permits by a Regional Water Board, the affected facility operator shall no longer be regulated by this General Permit. Any new NPDES permit issued by the Regional Water Board may contain different requirements than the requirements of this General Permit.

2. Regional Water Boards may provide guidance to facility operators on the SWPPP and the Monitoring Program and reporting implementation.

3. Regional Water Boards may require facility operators to conduct additional SWPPP and Monitoring Program and reporting activities necessary to achieve compliance with this General Permit.

4. Regional Water Boards may approve requests from facility operators whose facilities include co-located industrial activities that are not contiguous within the facilities (e.g., some military bases) to comply with this General Permit under a single NOI. Storm water discharges and authorized non-storm water discharges from the co-located industrial activities and from other sources within the facility that may generate significant quantities of pollutants are authorized provided the SWPPP and

Monitoring Program addresses each co-located industrial activity and other sources that may generate significant quantities of pollutants.

CERTIFICATION

The undersigned, Administrative Assistant to the State Water Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on April 17, 1997.

AYE: John P. Caffrey
John W. Brown
James M. Stubchaer
Marc Del Piero
Mary Jane Forster

NO: None

ABSENT: None

ABSTAIN: None

4/25/97

Maureen Marché
Administrative Assistant to the Board

EPA United States Environmental Protection Agency

Storm Water

Storm Water Discharges Associated with Industrial Activity 40 C.F.R. 122.26(b)(14)

LINKS

EPA Home

Region 4

Water Mgmt. Division

Water Prgrms. Enforcemnt. Branch

Clean Water Act Enf. Section

Storm Water

Federal Register

The term "Storm Water Discharges Associated with Industrial Activity", defined in federal regulations 40 CFR 122.26(b)(14)(i)-(xi), determined which industrial facilities are potentially subject to Phase I of the storm water program. If you are subject to the program you need to apply for a permit. The definition uses either SIC (Standard Industrial Classification EXIT EPA) codes or narrative descriptions to characterize the activities. You are responsible for identifying your facility's SIC code. The definition's 11 categories ((i) - (xi)) are listed below. You should review these 11 categories and decide if your type of facility is described by any of them (either by SIC code or by narrative descriptions). Please note that categories iii, viii, and xi have special conditions, or exceptions (described below) which may make a facility NOT subject to the program, and therefore not required to apply, even though the facility's activity matches one of the SIC codes.

category (i)

Facilities subject to storm water effluent limitations guideline, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N (except facilities with toxic pollutant effluent standards which are exempted under category (xi)). These types of facilities include the following:

```
40 CFR Subchapter N
===================================================
405 Dairy products processing
406 Grain mills
407 Canned & preserved fruits & veg. processing *
408 Canned & preserved seafood processing
409 Beet, crystalline & liquid cane sugar refining
410 Textile mills
411 Cement manufacturing
412 Feedlots (use CAFO General Permit)
414 Organic Chemicals plastics and synthetic fibers
415 Inorganic chemical manufacturing *
417 Soap and detergent manufacturing
418 Fertilizer manufacturing
419 Petroleum refining
420 Iron and steel manufacturing
421 Nonferrous metal manufacturing
422 Phosphate manufacturing *
423 Steam electric power
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424 Ferroalloy manufacturing *
425 Leather tanning and finishing
426 Glass manufacturing *
427 Asbestos manufacturing
428 Rubber manufacturing
429 Timber products processing
430 Pulp, paper, and paperboard *
431 Builder's paper and board mills
432 Meat products
433 Metal finishing
434 Coal Mining *
436 Mineral mining & processing *
439 Pharmaceutical manufacturing *
440 Ore mining & dressing *
443 Paving and roofing materials
446 Paint formulating
447 Ink formulating
455 Pesticide Chemicals *
458 Carbon Black manufacturing
461 Battery manufacturing
463 Plastics molding and forming
464 Metal molding and casting
465 Coil coating
466 Porcelain enameling
467 Aluminum forming
468 Copper forming *
469 Electrical & electronic component
471 Nonferrous metal forming & powders
* some facilities in group do not have limits or standards, see 40 CFR subchapter N to verify.

category (ii)

SIC Code	
24	lumber and wood products (except 2434 wood kitchen cabinets, see (xi))
26	paper & allied products (except 265 paperboard containers, 267 converted paper, see (xi))
28	chemicals & allied products (except 283 drugs, see (xi))
29	petroleum & coal products
311	leather tanning & finishing
32	stone, clay & glass production (except 323 products of purchased glass, see (xi))
33	primary metal industry
3441	fabricated structural metal
373	ship and boat building and repair

category (iii) Mineral Industry

Facilities classified as SIC codes 10-14 including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11(1) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17,

1990), and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, benefication, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim).

```
SIC Code
10  metal mining (metallic mineral/ores)
12  coal mining
13  oil and gas extraction
14  non-metallic minerals except fuels
```

Oil and gas operations that discharge contaminated storm water at any time between November 16, 1987 and October 1, 1992, and that are currently not authorized by an NPDES permit, must apply for a permit. Operators of oil and gas exploration, production, processing, or treatment operations or transmission facilities, that are not required to submit a permit application as of October 1, 1992 in accordance with 40 CFR 122.26(c)(1)(iii), but that after October 1, 1992 have a discharge of a reportable quantity of oil or a hazardous substance (in a storm water discharge) for which notification is required pursuant to either 40 CFR 110.6, 117.21, or 302.6, must apply for a permit.

category (iv) Hazardous Waste

Hazardous waste treatment, storage, or disposal facilities including those that are operating under interim status or a permit under Subtitle C of RCRA.

category (v) Landfills

Landfills, land application sites, and open dumps that receive or have received any industrial waste (waste that is received from any of the facilities described under categories (i) - (xi)) including those that are subject to regulations under Subtitle D of RCRA.

category (vi)

Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as SIC 5015 (used motor vehicle parts) and 5093 (scrap and waste materials).

category (vii) Steam Electric Plants

Steam electric power generating facilities, including coal handling sites.

category (viii) Transportation

Transportation facilities classified by the SIC codes listed below **which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations**. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under categories (I)-(vii) or (ix)-(xi) are associated with industrial activity, and need permit coverage.

```
SIC Code
40   railroad transportation
41   local and interurban passenger transit
42   trucking & warehousing (except 4221-25,
      see (xi))
43   US postal service
44   water transportation
45   transportation by air
5171 petroleum bulk stations and terminals
```

category (ix) Treatment Works

Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the Clean Water Act.

category (x) Construction

Construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than 5 acres of total land area which are not part of a larger common plan of development or sale.

The construction "operator" must apply for permit coverage under the General Storm Water Permit for Construction Activities. The "operator" is the party or parties that either individually or taken together meet the following two criteria: 1) they have operational control over the site specification; 2) they have the day-to-day operational control of those activities at the site necessary to ensure compliance. For a typical commercial construction site, the owner and general contractor must both apply. For a typical residential development, the developer and all builders must apply. Each builder must apply even if they individually disturb less than 5 acres if the overall development is 5 or more acres. Only one Pollution Prevention Plan is required per site even though there may be multiple parties.

category (xi) Light industry

Facilities classified by the following SIC codes:

SIC Code	
20	food and kindred product
21	tobacco products
22	textile mill products
23	apparel and other textile product
2434	wood kitchen cabinets
25	furniture and fixtures
265	paperboard containers and boxes
267	miscellaneous converted paper products
27	printing and publishing
283	drugs
285	paints and allied products
30	rubber and miscellaneous plastic
31	leather and products (except 311)
323	products of purchased glass
34	fabricated metal products (except 3441)
35	industrial machinery and equipment
36	electronic and other electric equipment
37	transportation equipment (except 373)
38	instruments and related products
39	miscellaneous manufacturing
4221	farm product storage
4222	refrigerated storage
4225	general warehouse and storage

(and which are not otherwise included in categories (ii) - (x)) with storm water discharges from all areas (except access roads and rail lines) where material handling, equipment, or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are **exposed to storm water**. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate produce, finished product, by-product, or waste product.

Note:

Standard Industrial Classification (SIC) codes are in the process of being replaced by the newer North American Industry Classification System (NAICS). Until EPA modifies regulations referring to the newer NAICS system, the older SIC codes will continue to be utilitized.

Standard Industrial Classification codes

EXIT EPA

North American Industry Classification System EXIT EPA

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Coalition for Practical Regulation

Arcadia
Artesia
Bellflower
Bell Gardens
Burbank
Cerritos
Commerce
Compton
Diamond Bar
Downey
Hawaiian Gardens
Industry
Irwindale
La Canada~Flintridge
La Mirada
Lakewood
Lawndale
Monrovia
Montebello
Norwalk
Palos Verdes Estates
Paramount
Pico Rivera
Pomona
Rancho Palos Verdes
Rosemead
Santa Fe Springs
San Gabriel
Sierra Madre
Signal Hill
South Gate
Vernon
Walnut
Whittier

Proposed Shift of the State's Storm Water Inspection and Enforcement Program to the Cities

What is the State Proposing?

The Draft NPDES Permit appears to be an attempt to shift the responsibility for industrial and construction site storm water inspections and enforcement programs from the State to the Cities. The State was required in 1989 to develop a program for industrial and construction storm water permits. Fees collected by the State range from $250 to $10,000 per storm water permit. The State is currently responsible for reviewing plans on the issuance of permits, inspections and legal enforcement, including levying fines and prosecuting violators.

What does the Clean Water Act require?

The requirements under Clean Water Act allow for a permit that requires Cities to inspect a limited number of industrial facilities, in certain settings. Cities are primarily required to inspect to insure that illicit discharges do not enter the storm drains, and there is nothing in the regulations that would allow the Cities to enter upon and inspect private property. The regulations provide that city's permit responsibilities are to involve "storm water associated with industrial activity," industrial facilities contributing substantial pollutant loadings, and "illicit discharges." Cities are not required to inspect the countless commercial facilities set forth in the Draft Permit, including State and federal facilities, or to inspect industrial facility operations covered under the State permit. In fact the express terms of the State Industrial General Permit plainly impose the obligation on the Regional Boards to conduct "Compliance Inspections," and to take enforcement action.

What are commercial and industrial sites?

The Draft NPDES Permit defines Industrial/Commercial facilities as "any facility involved and/or used in either the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in

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providing professional and non-professional services." Coverage under the Draft Permit of Industrial/Commercial sites includes all restaurants, auto repair shops, Phase I facilities and other Commercial facilities that are "potentially contributing" to the impairment of receiving water. Thus, the Industrial/Commercial inspection program under the Draft Permit is completely "open ended", and includes all facilities that potentially contribute" to storm water pollution. (Page 26, Section 3).

Industrial sites are permitted by the State under the Phase I NPDES Permit. These facilities are to be inspected for compliance by the Regional Board. These sites include refineries and other heavy industries. We understand that there are approximately 2,400 State permitted industrial facilities in Los Angeles County. Under the inspection and enforcement program in the Draft Permit. Cities will be required to inspect Industrial/Commercial sites and impose appropriate BMP's (Best Management Practices) for such businesses. (Page 27, Section 4).

Cities are being ordered to become the "storm water police"

The MS4 Draft Permit requires that Cities have the ability to enter onto private property to inspect thousands of commercial and industrial facilities. Under the Draft Permit, Cities must possess the "ability to carry out all inspection, surveillance and monitoring," and must report, within 24 hours of discovery, non-compliant sites and other sites that "create an adverse impact or nuisance," to the Regional Board. The criteria to determine whether a site is a nuisance or is causing an "adverse impact" is undefined. (Page 29, Section 7). The Cities must also "possess the authority to enter, sample, inspect, review and copy records, and require regular reports" from such businesses. (Page 19, Section G(1)(n)). Where does the City obtain the authority to enter private property without probable cause?

Cities will be inspecting sites, even if there is no evidence of non-storm water discharges into the local storm drains.

The Permit requires that commercial and industrial facilities be investigated, "regardless of exposure or non-exposure" of storm water pollution. Cities will be required to establish inspection frequencies with the Regional Board. The permit calls for at least one inspection within the first 24 months for each commercial and industrial site. The permit has a minimum of not less that two inspections for each site during the five-year life of the NPDES permit. (Page 27-28, Section 5).

Inspectors will also be required to provide oral notification of an "adverse impact or nuisance" to the Board within 24 hours. Inspectors must provide oral notification of "non-compliant" sites within three days. The inspectors are to follow up oral reports with written reports, within five days. Cities are then to

enforce the violations through "ordinances or other regulatory mechanisms", including "sanctions to ensure compliance". (Page 28, Sections 6 & 7). Again, where does the City get the authority to enter private property without probable cause?

What are the major problems with shifting the inspection and enforcement program to the cities?

Shifting of the inspection and enforcement responsibility to the cities presents several problems:

- No Legal Basis to Mandate Local Inspections & Enforcement - The State entered into an MOA (Memorandum of Agreement) with the USEPA in 1989 to administer the NPDES Program. This included the requirement that the State develop storm water permits and conduct storm water inspections for specified Industrial and Commercial facilities.

- No Legal Authority to Enter Businesses – Cities do not have the legal authority to enter onto private property to enforce a State storm water permit, or simply because the Regional Board requires it in a permit issued to the City. Nor does the City have the authority to inspect such State and federal facilities. Cities have to obtain search warrants to enter private property. Our understanding of case law is that it has generally limited cities to pursuing code enforcement based on the rule of what can be observed from the city right-of-way.

- Unfunded Inspections – The State is proposing ***no funding*** to the cities for the costs of the new inspection program. The business community will likely object to the additional levy of a city storm water fees, since they are already paying fees to the State. Assuming it were even legally enforceable, Cities would be required to fund staffing for inspectors or contract with consultant inspection firms.

- Unfunded Legal Enforcement – Cities must rely on the cumbersome municipal code violation process, which includes filing of charges with city prosecutors or the district attorney. Violations could then end up in expensive court cases. Again, the State is proposing ***no funding*** for prosecution and court expenses.

- Unfunded Surveillance, Monitoring and Health Risk Assessments – Assuming it were even legal, most cities do not have the resources or expertise generally to perform inspections of thousands of Industrial/Commercial facilities in their respective jurisdictions, and to complete the health risk assessments and the monitoring required to determine if an "adverse impact or nuisance" exists in storm water.

Consultant expertise will most likely be required. The State proposes ***no funding*** for the inspection, surveillance, monitoring or health risk assessments.

- Unknown Amount and Frequency of Inspections – Cities are not aware of the number of Industrial/Commercial facilities to be inspected every two years, or what commercial or industrial facilities are "potentially contributing to the impairment of receiving water." The number of inspections and types of facilities covered is open-ended and appears to even include State and federal facilities.

- Third Party Litigation – If the Cities accept the State inspection responsibilities, they will be exposed to third party litigation and State fines. Cities would be subjected to fines and litigation, where inspection and enforcement programs are not considered "sufficient" by the Board or any individual or third party.

Conclusion

The State industrial permit inspection program is contained in an MOA between the State and USEPA. The Coalition is opposed to this shift of inspection and enforcement obligations onto the Cities, and is further opposed to the extension of limitless inspection, reporting and oversight obligations imposed on the Cities for Industrial/Commercial facilities are in violation of both State and federal law

Coalition for Practical Regulation

Arcadia
Artesia
Bellflower
Bell Gardens
Burbank
Cerritos
Commerce
Compton
Diamond Bar
Downey
Hawaiian Gardens
Industry
Irwindale
La Canada~Flintridge
La Mirada
Lakewood
Lawndale
Monrovia
Montebello
Norwalk
Palos Verdes Estates
Paramount
Pico Rivera
Pomona
Rancho Palos Verdes
Rosemead
Santa Fe Springs
San Gabriel
Sierra Madre
Signal Hill
South Gate
Vernon
Walnut
Whittier

Regional/Subregional Implementation Programs

The CPR Amendment to the NPDES Permit

What is the Coalition and what the Coalition's Goals?

- Coalition for Practical Regulation is a group of 35 Los Angeles County cities, representing 1.7 million residents, committed to finding cost-effective regional solutions to improve storm water quality.

- The Coalition cities are concerned about the high cost of implementing new storm water programs. The cities are equally concerned over "unfunded" mandated storm water programs, which could result in the reduction of existing city programs, if new revenues are not provided. The cities and Los Angeles County have been hit hard by the State "take away" of local property taxes – now totaling $1.8 billion annually.

- The Coalition believes that all the stakeholders, including the cities, Los Angeles County and the State, need to find practical and cost-effective solutions to storm water quality problems.

Does the Draft NPDES Permit propose regional solutions?

- The Draft Permit says that cities "will work cooperatively" to control storm water pollution from one jurisdiction to another through "cooperative agreements." The Draft Permit provides a limited framework on how this cooperation is to occur. (Page 6 #17)

- The Draft Permit has only a few examples of regional approaches – such as public information programs and a "Countywide Hotline" for reporting complaints. The Draft Permit discusses the need for cities to "coordinate regional and local outreach and education to reduce duplication of efforts". (Pages

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- 21-25, Part 4A). The Draft permit provides no further guidance on other regional cost-effective programs.

- The Draft Permit in principal "supports a Watershed Management Approach", to encourage cost-effective programs, through "interagency agreements". However, the permit is vague on how these principals are translated into government action. (Page 9, #32)

- "Watershed Management" is limited in the Draft to committees comprised of various cities in each of the five watersheds. These committees are designed to collect information and to further the proposal to force the cities to perform the State's Industrial and Commercial storm water inspection and enforcement program. The committees are to exchange information, prioritize pollution control efforts, monitor implementation annually and identify additional sites for inspections (Pages 15-16, Part 3A,B&C).

- The Draft requires that the cities amend the Storm Water Quality Management Plan (SQMP) to "incorporate regional provisions, such as "watershed specific requirements". However, the five watersheds are huge geographic areas, over 3,100 square miles in the entire area. They have different topographies, infrastructures, development patterns and needs. The Draft Permit should provide flexibility for cities in the various watersheds to join together in smaller more manageable groups to address specific permit requirements. (Page 17, Part 3F)

- The Draft Permit has no mechanism that requires that other government agencies work with the cities to implement storm water programs. Examples would include programs that combine resources with Caltrans, various school districts, community college districts, other special districts and federal facilities.

The CPR Amendment Provides a Management Framework for Regional/Subregional Solutions to Storm Water Quality Issues

- The Coalition proposes a specific amendment to the Draft NPDES Permit that encourages groups of cities to form partnerships with Los Angeles, County, the State and other agencies to plan and implement regional/subregional storm water programs.

- Known as the RSIP - or Regional/Subregional Implemenation Program – the RSIP provides the framework to encourage regional cooperation for implementing clean water goals and programs. RSIPs would promote cost-effective solutions, with problem solving groups of cities and other agencies

- Cities have a good track record of solving regional issues in a cost-effective manner, in problem solving groups. Examples include local government's joint response to natural disasters such as wildfires and earthquakes.

- The RSIP will encourage government to coordinate and combine limited resources, in order to implement programs with the least financial effect on residents, businesses and taxpayers.

How does the RSIP work? What are its Components?

- Cities and other agencies will "self-form" into groups with common interests, issues, drainage watersheds and shared storm water infrastructure. Cities will still be responsible for permit compliance, however joint efforts will provide consistent and efficient program implementation.

- Once the groups of cities and other agencies "self-form", they will submit a Regional/Subregional Impementation Program to the Regional Board. The RSIP would be a storm water master plan, based on the application of the maximum extent practicable standard (MEP) to storm water programs. The MEP is what is technically achievable and financially responsible, non-numeric criteria applied to all municipal storm water discharges through the implementation of best management practices.

- The RSIP would be approved by the Regional Board and would consist of four main components:

    1. Administrative Programs – such as joint illicit connection removal programs;
    2. Capital Improvements and Program Elements – such as regional storm water treatment facilities or programs;
    3. Time schedule for implementation; and
    4. Financing Plan that would detail funding.

- The RSIP recognizes that new local taxes and assessments for clean water programs may require voter approval.

- The RSIP allows local government the flexibility of determining if the programs will be implemented with existing resources or new resources. It also allows for State and federal funding if programs are required above the local resource level.

RSIP allows for impact fees to fund regional/subregional projects

- The RSIP provides a framework for the levy of a regional development impact fee, to deal with waivers that are granted under the NPDES permit, where implementation of storm water programs would be impractical or threaten ground water quality.

- The storm water impact fee could also be used to install regional/subregional storm water capital improvements or storm water programs.

Participation in the RSIP protects communities and tax payers from litigation

Cities and agencies that form regional/subregional groups, submit RSIP's and work under a Board approved RSIP, will be deemed in compliance with the NPDES permit. The Board would retain the ability to levy fines for non-compliance, but third party litigation would be excluded.

Regional Implementation time frames in the Draft Permit are unrealistic

The Draft NPDES permit proposes that the cities amend the SQMP in 180 days to include regional programs. It may take cities in the various watersheds several months to organize and study regional issues. Additional time would be necessary to design and finding the funding necessary for regional storm water programs. (Page 17, Part 3F)

****

Interesting Storm Water Facts

# of Catch Basins in Los Angeles River Watershed Only – 150,000

Estimated installation costs of catch basin inserts in Los Angeles River Watershed - $120 million

Estimated annually maintenance costs of catch basin inserts in the Los Angeles River Watershed - $60 million.

Interesting Coalition Facts

Population of Coalition Cities – 1,668,837

Square Miles of Coalition Cities – 275.4

Part__. REGIONAL/SUBREGIONAL IMPLEMENTATION PROGRAM

A. The Regional Board encourages the utilization of groups of permittees and intergovernmental programs for the development and implementation of storm water programs. This is the most cost-effective use of public resources when implementing the NPDES Permit, such that the tax burden on individual property owners and the fiscal impact on existing government services will be minimized.

Intergovernmental coordination involves combining the resources of various permittees, cities, Councils of Government, the County of Los Angeles, the Flood Control District and other agencies, such as Caltrans to implement the NPDES Permit in accordance with maximum extent practicable standards.

Examples of intergovernmental programs include the improvement of regional or subregional retention basins, pump stations, storm drains inserts, storm drain clarifiers, as well as the implementation of storm water programs and other treatment facilities approved by the Executive Officer. The Board especially encourages the use of multi-purpose open space facilities to implement the NPDES Permit and regional BMP's, such as regional parks and athletic fields designed to treat storm water.

This section specifically recognizes that urban storm water may flow over many governmental jurisdictional boundaries prior to reaching waters regulated under the Clean Water Act and the Porter Cologne Act, and that storm water may pass through local and regional facilities, including storm drain pipes and retention facilities. The following regulations are designed to encourage all levels of government, from local cities, Los Angeles County, State and Federal agencies to form governmental groups to resolve storm water issues.

Regional and Subregional Implementation Programs (RSIP) provide the framework to implement the NPDES Permit and TMDL's in manner consistent with Federal, State and local regulations. Implementation of the RSIP by the per

B. Regional/Subregional Implementation Program

A Regional/Subregional Implemenation Program (RSIP) may be submitted by the intergovernmental organizations, as an alternative to separate NPDES Permit requirements or TMDL's as required of each government entitity. In order to comply with the terms of the individual NPDES Permit and TMDL's. The RSIP's will contain the following:

1. Identification of the Intergovernmental Group (IG)

The application for the RSIP shall identify the Intergovernmental Group (IG) who will be subject to the RSIP. The application shall identify the lead agency who will be responsible for coordination of the IG. The

application shall identify if the IG has any special authority, such as joint powers authority.

2. Implementation Plan Components

The application shall consist of the following components and shall be accompanied with a detailed description of the programs and facilities the IG will utilize, modify or construct in order to comply with the NPDES Permit or TMDL.

a) Administrative Component – The Implementation Program includes an administrative component describing any new ordinances, resolutions or policies and staffing necessary for implementation.
b) Program Component – The Implementation Program may include revised existing and new programs necessary for implementation.
c) Capital Improvement Program – The application may include a capital improvement program, detailing both minor and major facilities that would be constructed for implementation.
d) Time Schedule – The application shall be accompanied with a time schedule for the implementation of the various components, programs and facilities.
e) Financing Program – The application shall be accompanied with a financing program explaining how the IG intends to fund the programs and facilities. The financing program would outline any State or Federal financial assistance, new fees, taxes or assessments. The financial program must document baseline services, such as public safety and public works. The financing program shall indicate if the IG is required to impose new fees, assessment or taxes to implement the RSIP.

3. Voter Approval of Financing Program

It is recognized that a public vote may be required to impose new fees, assessments or taxes to implement the RSIP. If determined that vote is required, the application shall be accompanied by an election schedule of when the IG will schedule the new fees, taxes or assessments for a vote of the electorate. Additional State required programs, in excess of the available resources as determined by the local electorate, shall only be implemented when State or Federal funding is made available.

4. Mitigation Fees – Regional Storm Water Impact Fees

The IG may design a regional fee mechanism, to deal with waivers that are granted under the NPDES permit and applicable TMDL's, where a waiver for impracticability or a threat to ground water has been granted. The regional fee should also take into account situations where off-site fees are required due to loss of environmental habitat should on-site mitigation be required. The regional fee may also be used as a levy on new development in order to provide a funding mechanism for the

installation of regional/subregional storm water treatment facilities and other RSIP capital improvements.

Pursuant to Government Code Section 66000-66011, the IG must establish the following:

a. Identify the purpose of the fee.
b. Identify the use to which the fee is to be put (e.g. public facilities or programs must be identified).
c. Determine how there is a reasonable relationship between the fee's use and the type of project on which the fee is imposed.
d. Determine there is a reasonable relationship between the need for the program or facility and the type of project on which the fee is imposed.

The IG must also deposit, invest, account for and expend the mitigation fee pursuant to Government Code Section 66006. The IG must also make findings once each fiscal year regarding any portion of the mitigation fee remaining unexpended or uncommitted pursuant to Government Code Section 66001(d).

The IG must also refund any unexpended or uncommitted mitigation fee after five years receipt (Government Code Section 66001(e). The IG must also adopt a plan indicating on which capital improvement or program the fee will be expended (Government Code Section 66006(b).

5. RSIP Review Standards

The Executive Officer shall utilize the following standards to review and approve individual RSIP applications:

a. The RSIP significantly complies with the intent of the NPDES Permit and applicable TMDL.
b. The RSIP has incorporated to the maximum extent practicable current programs and technologies.
c. The RSIP will be implemented in manner consistent with the time periods imposed by the NDPES Permit and applicable TMDL.

6. Amendments to the RSIP

The Executive Officer may approve or disapprove of amendments to the RSIP. The IG must provide documentation that:

a. The proposed amendment will meet or exceed the objectives of the original NPDES or TMDL component, program or schedule; or
b. The fiscal burden of the original NPDES or TMDL component, program or schedule is substantially greater than the proposed amendment and does not achieve a substantially greater improvement in water quality.

The Executive Officer may eliminate any NPDES or TMDL component or program, if the IG can document that:

a. The component or program is not technically feasible and no substitute is available, or
b. The cost of implementation outweighs the benefits to the receiving waters.

7. Administrative Review Process

The administrative review process formalizes the procedures for review and acceptance of the RSIP and any amendments to an approved RSIP. In addition, it provides a method to resolve differences in interpretation of the RSIP components between the Executive Officer, the Regional Board and the IG.

RSIP Application and Amendments to an Approved RSIP

a. Determine Application Complete – The Executive Officer shall notify the IG in writing within 30 days after the filing of the RSIP if the application has been determined to be complete. If determined to be incomplete, the letter shall outline the items that the IG will need to supply in order to complete the application.
b. Resubmittal of the Application – The Executive Officer shall notify the IG within 30 days after resubmittal of the application. The 30-day review period shall apply to all resubmittals.
c. Approval or Disapproval of the RSIP – The Executive Officer shall have 60 days in which to either approve or disapprove of the RSIP. The IG shall be notified in writing of the reasons for either approval or disapproval.
d. Appeals to the Regional Board – The IG shall have 30 days from receipt of the Executive Officer's letter to appeal the action of the Executive Officer. The IG shall notify the Board in writing of the reasons for the appeal and any action that the IG wants the Board to consider.
e. Appeal Hearing – The Executive Officer shall set the appeal for a Board public hearing item, within 60 days receipt of the written appeal from the IG. The appeal hearing date may be extended upon mutual agreement between the Executive Officer and the IG.
f. Interpretations of the RSIP Components – The IG may file a written appeal to any determination made by the Executive Officer in implementing the RSIP. The Executive Officer shall set public hearing regarding the Board under Section Five, Subsection B, 7e. above.

8. RSIP Enforcement/ Legal Indemnity

Violations of any provision of an approved RSIP shall be subject to the provisions of Part 6, Section O, Standard Provisions of this Permit. In

order to encourage and to provide an incentive to cost-effective regional/subregional programs, the State will provide legal indemnity to the IG, when civil litigation arises in the good faith implementation of an approved RSIP.

California Regional Water Quality Control Board

Los Angeles Region

Winston H. Hickox
Secretary for Environmental Protection

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640
Internet Address: http://www.swrcb.ca.gov/~rwqcb4

Gray Davis
Governor

April 23, 2001

Mr. Kenneth C. Farfsing
City Manager
City of Signal Hill
2175 Cherry Avenue
Signal Hill, California 90806

via FAX

Dear Mr. Farfsing:

Coalition for Practical Regulation – Comments pertaining to Regional Board Workshop on April 24, 2001

Thank you for your letter, dated April 13, 2001, from the Coalition for Practical Regulation. In this letter, you expressed the Coalition's concern regarding the procedure for renewing the municipal storm water permit for the County of Los Angeles and the tentative agenda for our workshop on April 24, 2001.

Staff at the Regional Board are committed to making all reasonable efforts to facilitate public review and comment on the proposed permit, which our Board will consider for adoption on July 26, 2001. As we discussed over the telephone on April 19, 2001, we have prepared a renewal schedule that allows permittees and interested parties one month to review both a first and second draft of the permit. The workshop on April 24, 2001 will not be your only opportunity to submit comments. Your written comments on the first draft (issued April 13, 2001) will be due on May 16th. And, as stated above, we plan to provide another month for public review of a second draft. Please note that the purpose of the April 24th workshop is two-fold: (1) to explain proposed changes to the permit, in order to facilitate review and public comment; and (2) to receive preliminary comments on the draft and, as appropriate, exchange information.

Also, please find attached a revised agenda. We have made these revisions to try to address your concern that insufficient time is being allocated for public comment at the workshop. Accordingly, rather than take public comment on each of the permit topics as they arise (as originally intended), we have condensed our staff presentation, which is now scheduled to occur during the first half of the workshop. The second half of the workshop will be allocated for public comment. You will also note that our revised agenda includes relevant items of concern mentioned in your letter.

Again, thank you for your suggestions, which we agree should help focus our discussion at the workshop. Should you have questions, please do not hesitate to contact me at (213) 576-6618.

Sincerely,

Wendy Phillips
Chief, Storm Water Section

attachment

cc: John Youngerman, Storm Water Section, State Water Resources Control Board
Bruce Fujimoto, Storm Water Section, State Water Resources Control Board
Mustafa Ariki, Department of Public Works, County of Los Angeles

Workshop
on the Municipal Storm Water Permit for the County of Los Angeles

Tuesday, April 24, 2001 at 9:30 a.m.
at the City of Los Angeles Central Library (Auditorium)
630 West 5th Street, Los Angeles (enter through the Flower Street door)

Purposes of the Workshop:

1. *To explain proposed changes to the permit, in order to facilitate review and public comment.*

2. *To receive preliminary comments on the draft and, as appropriate, exchange information.*

Revised Agenda[1]

9:30	**Welcome**	Dennis Dickerson Executive Officer
9:35	**Purposes of the workshop, procedure for renewing the permit, etc.**	Xavier Swamikannu Chief, LA/LB MS4 Unit
9:45	**Summary of proposed changes:**	
	❖ Structure of the Permit ➢ Elimination of Notice to Meet and Confer Process ➢ Addition of requirement to implement TMDLs ➢ Implemention Schedules for the Permittees' Storm Water Quality Management Plan (SQMP)	Wendy Phillips
	❖ SQMP Programs for: ➢ Public agency activities, including elimination of illicit connections and illicit discharges	Carlos Urrunaga

[1] Agenda revised on April 23, 2001.

	➢ Development planning ➢ Construction ➢ Public education ➢ Industrial and commercial business education and inspections	Xavier Swamikannu Carlos Urrunaga Megan Fisher Dan Radulescu
	Legal issues relating to the existing permit: ❖ Discussion re authority to require permittees to enforce: ➢ State requirements ➢ Municipal storm water requirements	Wendy Phillips
	Legal issues applicable Statewide: ❖ Receiving Water Limitation: Discussion on development of this language to meet requirements of the Clean Water Act and to be consistent with State Board Order 99-05 (refer to handout) ❖ SUSMPs (Standard Urban Storm Water Mitigation Plans): ➢ Do they improperly infringe on local land use authority? ➢ Does the capture/retention/treatment criterion of ¾" (or equivalent) violate the CA Water Code section 13360 (by specifying the manner in which Permittees must comply)? ❖ Maximum Extent Practicable (MEP): discussion	Alex Mayer, State Board (Office of Chief Counsel)
11:00	Public comment	Open
12:30	Concluding remarks, and next steps	

City Manager
(562) 220-2222

April 20, 2001

Mr. Dennis A. Dickerson, Executive Officer
LARWQCB
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Dear Mr. Dickerson:

The City of Paramount appreciates the opportunity to provide comments on the recently released proposed NPDES permit renewal. Paramount is a member of the Coalition for Practical Regulation, composed of 35 Los Angeles County cities who are permitees under the Los Angeles County Storm Water Permit.

Although we appreciate the opportunity to address the Board, we have concerns that the workshop scheduled for April 24th follows too closely the release of the permit on April 13th. The draft permit is 86 pages long, and we would appreciate having more than approximately 6 working days to digest its contents, and prepare adequately to present our concerns to the Board.

In the interest of ensuring that the workshop is productive and beneficial to all parties, it would seem appropriate to extend the review period prior to hosting a workshop on the matter.

CITY OF PARAMOUNT

Patrick H. West
City Manager

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R0001891

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on the Municipal Storm Water Permit for the County of Los Angeles

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THE CLEAN WATER ACT
AS AMENDED BY
THE WATER QUALITY ACT OF 1987
PUBLIC LAW 100-4

Section 402(p)(3)(B)

MUNICIPAL DISCHARGE. – Permits for discharges from municipal storm sewers

(i) may be issued on a system- or jurisdiction-wide basis;

(ii) shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and

(iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

Workshop on the Renewal of the Municipal Storm Water Permit for the County of Los Angeles

April 24, 2001

City of Los Angeles Central Library

Welcome

Dennis Dickerson
Executive Officer, Regional Water Quality
Control Board - Los Angeles

Purpose of the Workshop

- To explain proposed changes to the permit, to facilitate public review and comment.
- To receive preliminary comments on the draft and, as appropriate, exchange information.

Format for the Workshop

- Staff presentation
  - renewal process
  - proposed changes to the Permit
    - structure
    - special provisions
  - legal issues
    - legal authority under the existing permit
    - Statewide legal issues
- Public comment

Background

- Permittees Reapplication
  - Covered under municipal storm water permit (Board Order No. 96-054)
  - Submitted ROWD on January 31, 2001
  - Two Reapplications
  - City of Long Beach separate Permittee (Board Order No. 99-060)
  - Board Staff Review provided on March 2, 2001

Purpose of Workshop

- Overview of Draft Permit
  - Draft issued April 13, 2001
  - Highlight proposed changes to permit
  - Explain rationale
  - Offer clarification
- Forum for Comment
  - Informal session for input
  - Facilitate comment based on understanding
  - Provide preliminary responses to Q & As
  - Explain procedures to submit comment

Procedure for Permit Renewal

- Procedure
  - Meetings with Permittee sub-group [Feb-April]
  - Release First Draft [April 13]
  - Staff Workshop [April 24]
  - Comments on First Draft due [May 16, 2001]
  - Meetings to review comments [May-June]
  - Issue Final Draft and Response to Comments [June 8]
  - Staff Workshop [if necessary]
  - Propose adoption at Public Hearing [July 26]

Procedure for Submitting Comments

- Address
  - Attn: Xavier Swamikannu
    California Regional Water Quality Control Board
    Los Angeles Region
    320 W. 4th Street, Suite 200
    Los Angeles, CA 90013
- Suggestions
  - Comment on issues where you disagree and also where you agree
  - Submit for consideration alternative language which will address your concern.

Summary of Proposed Changes

- Structure
- Special Provisions, setting forth goals and performance measures for the Permittees' Storm Water Quality Management Plan (SQMP) -- i.e. programs for:

Public agency activities	IC/ID
Land development	Construction
Business	Education

Changes to Structure of Permit

- *Replaced* - Notice to Meet and Confer
  - Instead, the Regional Board will rely on the State's enforcement policy (State Board Order 96-030)

Goal: To protect water quality by enforcing regulations in a manner that is consistent, predictable, and fair.

Changes to Structure of Permit

- *Added* - Requirement to implement Total Maximum Daily Loads
  [Part 3, F.2; Part 4, E. 5 and 6]
  - The permit is a mechanism for implementing storm water load allocations.
  - Public will have input during TMDL public review process.
  - Consistent with Long Beach and Ventura permits.

Changes to Structure of Permit

- Special Provisions (Part 4): Permittees must revise model programs comprising the Storm Water Quality Management Plan (SQMP):
  - Illicit Connection and Discharge Elimination
  - Public Agency Activities
  - Land Development
  - Construction Activities
  - Public Education
  - Industrial and Commercial Business

- SQMP revisions are due within 180 days of permit adoption. Must include:
  - performance measures specified in permit.
  - proposed schedule for implementation.
    - Exceptions: deadlines for certain requirements are on tighter time schedules (e.g. peak discharge limit, employee training)
- Revisions are subject to Executive Officer approval.

Program to Eliminate Illicit Connections/Illicit Discharges

Key accomplishments under existing permit:*

- establishment of legal authority
- implementation of a Storm Water hotline
- reporting programs for illicit connections and discharges (including hazardous materials)
- storm drain "field" screening, during regularly scheduled maintenance activities

Program to Eliminate Illicit Connections and Illicit Discharges

- Problems:
  - Length of storm drain "field" screening unknown (nor was it required to be reported).
  - No system for evaluating and prioritizing problem areas.
  - Concern over consistency and rigor in responding, reporting, and eliminating illicit connections and discharges.

1999/00 Illicit Connections and Illicit Discharges

- Illicit connections:
  - 1,115 suspected illicit connections (ranging from 0 to 877 per permittee).
  - 4,760 investigations of illicit discharges (ranging from 0 to 1,876 per permittee).

(see Fact Sheet/Staff Report, Attachment A, for detail)

Summary of
Illicit Connections and Illicit Discharges
(from 1999/00 Annual Report)

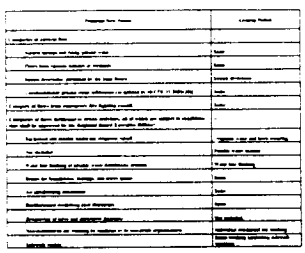
Illicit connections:	Watershed Management Area						Totals
	County[1]	Urban Santa Monica Bay	Rural Santa Monica Bay	Los Angeles River	San Gabriel River	Dominguez and Harbors	
Investigated	877	70	17	83	56	12	1,115. .....
Exempt	124	11	0	21	19	0	175 (16%)
Discharges terminated	0	53	7	31	30	1	122 (11%)
Connections removed	336	13	0	18	4	0	371 (33%)
Other	417[2]	0	2	13	5	3	440 (39%)
Illicit discharges:							
Investigated	788	1,249	38	2,271	361	53	4,760.....
No evidence	95	90	9	278	84	13	569 (12%)
Exempt	15	59	0	29	35	1	139 (3%)
Under permit	2	40	0	5	27	0	74 (2%)
Discontinued	411	1,002	27	1,000	166	27	2,633 (55%)
Source not determined	265	58	8	970	96	24	1,421 (30%)

[1] The County's reports of illicit connections and discharges are not categorized by watershed management area.
[2] The County reported under the "Other" category of illicit connections that 126 connections were already permitted but not properly identified, and that 291 illicit connections are still under investigation.

Proposed Changes to Program to Eliminate Illicit Connections and Illicit Discharges

- Management and tracking system: to address need for a comprehensive evaluation of illicit discharges and connections.
- Prioritization of storm drain drain screening efforts, to identify areas for proactive screening.
- Timing requirements:
  - employee training - 180 days (and annual refreshers)
  - illicit discharge - respond within 72 hours of discovery
  - illicit connection - commence investigation - 21 days

Prohibition on Non-Storm Water Discharges Refinement of exemption categories



Prohibition on Non-Storm Water Discharges

- Staff has not added exemptions for:
  - emergency floor drains
  - wash water runoff of blood and other human tissues from the cleaning of accident sites or accidental spills

Prohibition on Non-Storm Water Discharges (Part 1): Comparison of Exempted Discharges
(Italics indicate significant addition to exemption categories)

Proposed New Permit	Existing Permit
Categories of natural flow:	--
Natural springs and rising ground water	Same
Flows from riparian habitats or wetlands	Same
Stream diversions, permitted by the State Board	Stream diversions
Uncontaminated ground water infiltration [as defined by 40 CFR 35.2005(20)]	Same
Category of flows from emergency fire fighting runoff.	Same
Categories of flows incidental to urban activities, all of which are subject to conditions that shall be approved by the Regional Board Executive Officer:	--
Reclaimed and potable landscape irrigation runoff	Irrigation water and lawn watering
Not included	Potable water sources
Water line flushing of potable water distribution systems	Water line flushing
Drains for foundations, footings, and crawl spaces	Same
Air conditioning condensate	Same
Dechlorinated swimming pool discharges	Same
Dewatering of lakes and decorative fountains	Not included.
Non-commercial car washing by residents *or by non-profit organizations*	Individual residential car washing
Sidewalk rinsing	Street washing (including sidewalk washing)

Public Agency Activities

Overview and Proposed Changes

Public Agency Activities

- Sewage System Operations
- Public Construction
- Corporate Yards/Maintenance
- Landscape and Recreation Facilities
- Storm Drain Management
- Streets and Roads
- Parking Facilities
- Public Industrial Activities
- Emergency Procedures
- Dry Weather Diversions

Sewage System Operations

- Response Plan (All Permittees)
  - Investigate Complaints
  - Immediately Respond to Overflows
  - Notify Appropriate Agencies
- Identify Sewer Blockages (for owners/operators of a sewer system)
- Program to Prevent overflow to storm drain

Public Construction

- Same requirements as private construction
- Design & Construction of public buildings consistent with Development Planning
- Pollution prevention plans for all sites
- Implement post construction controls
- Conduct site inspections for municipal code compliance
- Obtain State Permit for construction sites >5 acres (1 acre and greater in 2003)

Corporation Yards/Maintenance

- Pollution Prevention Plans for all sites
- BMPs at all sites
- When corporation yards are built new or redeveloped, truck and equipment wash areas shall be connected to the sanitary sewer system
- Obtain State Permit for Industrial Activities

Landscape and Recreational Facilities

- Standardized protocol for application of pesticides, herbicides, and fertilizers
- No application of Pesticides, Herbicides or fertilizers before, during, or immediately after rain
- Storage of chemicals or materials indoors and/or in secondary containment areas
- Regular Inspection of storage areas

Catch Basin Maintenance

- Inspect & clean catch basins between May 1-Sep 30 of each year
- Classify priority CBs as 40% full
- Clean Priority catch basins as needed between Oct 1-Apr 30 of each year
- Permittees document:
  - The number of basins cleaned;
  - Overall waste collected;
  - Catch basin ownership, mark if priority

Streets and Roads

- Street Sweeping
  - Not less than 4x/mo in high trash volume areas
  - Not less than 2x/mo on collector and residential streets
- Municipal parking lots to be inspected and/or cleaned 2 times per month
- Sawcutting wastes prohibited from entering the storm drain
- Employee Training within 180 days

Development Planning Program

Development Planning Program

- Regulatory Requirement
  - implement and enforce controls for new development / significant redevelopment
    [40CFR 122.26 (d)(2)(iv)(A)(2)]
- Existing Permit
  - System for designating project as priority
  - Master List of BMPs
  - Standard Urban Storm Water Mitigation Plans
  - Guidelines on storm water for CEQA documents
  - Update of General Plans to include storm water considerations
  - Information program for developers

Development Planning Program

- **New Permit**
  - Peak discharge control to prevent downstream erosion and protect habitat
  - Requirements applied to all developments meeting categories and thresholds
  - Numerical mitigation criteria not applied to hillside developments less than 10,000 sq. ft.
  - Flow based BMP design criteria added
  - Gas stations subject to mitigation if threshold [100 or more ADT] exceeded
  - Industrial/ Commercial threshold lowered [to 40,000 sq. ft. in 2003]
  - General Plan update [five years]
  - Develop Technical Guidance

Development Construction

Overview
and
Proposed Changes

Common Pollutants

- Loose Soil
- Fuels (Gasoline and Diesel)
- Oils
- Hydraulic Fluids
- Paints
- Trash and Debris, etc...

3 Sizes of Development

- Less than 1 acre
- Between 1 and 5 acres (March 2003)
- 5 acres and greater (current threshold)

Less than 1 Acre

- Minimum BMPs at all sites
  - Pollution Prevention Practices
  - Erosion Controls
  - Sediment Controls

Between 1 and 5 acres

- Same requirements as less than 1 acre, and...
- Pollution prevention plan
- Municipal wet season Inspections
- Check for compliance with municipal codes
- In 2003, as a requisite to a grading permit, a NOI must be filed with the State

5 Acres and Greater

- Same requirements as a site between 1 and 5 acres, and...
- No grading permit may be issued until a Notice of Intent is filed with the State.

Summary of State Responsibilities

- Inspection of Sites 5 Acres and Greater with a State Permit (1 acre and above in March 2003)
- Enforcement of Non-Compliant Site Operators at these Sites
- Joint-Inspection of sites with a Municipal Permittee for Coordination

Public Information and Participation Program

Overview and Significant New Requirements

Major Objectives

- Measurably increase public knowledge regarding storm water pollution
- Change public behavior regarding storm water pollution

Accomplishments

- Segmented residents to determine those that pose the greatest threat to storm water quality and those most likely to change
- Evaluation of first three years revealed that public awareness, attitudes and concern regarding storm water pollution significantly increased
- Successfully reached 83% of residents with pollution prevention messages

Segments Identified as Primary Targets

- "Neat Neighbors": 50% of County's pop - have desire to do the right thing
- "Fix It Foul-Ups": 13% of County's pop - contribute disproportionately to storm water pollution through do-it-yourself activities
- "Rubbish Rebels": 9% of County's pop - most likely to engage in deliberate polluting behavior

Proposed Public Education and Participation Program

- Continue goals and successful strategies of current program
- The proposed New Requirements augment existing program to continue increasing public aware ness of specific storm water issues

Proposed Public Education and Particlpation Program

- **New Requirement:** Specifies frequency of Permittee coordination through quarterly Public Outreach Strategy meetings (Part 4.A.1.d.)
  - Provides opportunity for Permittees to seek guidance from Principal Permittee
  - Decrease duplicate efforts and confusion
  - Coordinating to use an existing program is more cost-effective than numerous operators developing there won local programs (EPA)

Proposed Public Education and Participation Program

- **New Requirement:** Develop outreach programs targeting the watershed-specific pollutants listed in Table 1 in the draft permit (Part 4.A.1.e.).
  - Educational materials and activities must be relevant to local situations and issues for maximum improvement to occur (EPA).
  - Consistent with TMDL implementation

Proposed Public Education and Participation Program

- **Old Requirement:** Conduct educational site visits of gas stations and restaurants (among other specified facilities). Facilities were to be visited at least twice during the last 5 years.
  - Total gas stations in MS4 area = 2,100
  - Total restaurants in MS4 area = 21,000

Proposed Public Education and Participation Program

- **New Requirement:** Develop and implement Corporate Outreach Program to educate gas stations and restaurant chains at the corporate level about storm water regulations (Part 4.A.2.a.).
  - Next step from educational site visits, recommended in Strategic Analysis
  - Will facilitate employee compliance

Proposed Public Education and Participation Program

- **New Requirement:** Develop and implement a business assistance program to provide confidential, technical resource assistance to small businesses(Part 4.A.2.b.)
  - Many small businesses contribute to storm water pollution due to lack of resources
  - Emphasis on pollution prevention
  - City of LA has been implementing successful program since 1988

Proposed Public Education and Participation Program

- **Change:** The educational site visit program that is part of the existing Public Information and Participation Program will be upgraded to an Inspection Program (Part 4.B.).

Industrial/Commercial Inspection Program

Industrial/Commercial Inspection Program

- **Significant Contributions from Industrial/Commercial Sites**
  - Watershed Management Initiative Chapter (& 303(d) Listing) - RWQCB LA - 2000
  - LA County Integrated Receiving Water Impacts Report (Cntical Sources Study Results) - 2000
  - Study of the Impact of Stormwater Discharge on Santa Monica Bay- 1999
  - Cntical Sources Selection and Monitoring Report - 1996
  - Storm Water Discharges Potentially Addressed By Phase II of the NPDES Storm Water Program - Report to Congress 1995
  - NURP Study (Fresno, CA) - 1983
  - Other Studies

Industrial/Commercial Inspection Program

- **Existing Permit:**
  - Educational Site Visits
    - Phase I facilities
    - Automotive related service facilities
    - Gas Stations
    - Restaurants
    - Facilities selected by WMC
  - Outreach Materials
    - Business specific BMP handouts
    - Site Visit Checklist
  - Inspection (under Consent Decree in LA County unincorporated areas)
  - *Quarterly submittals to the Regional Board*

Industrial/Commercial Inspection Program

- **New Permit:**
  - Elevation to Inspection and Enforcement Program
  - Partnership and cooperative effort with State activities
  - Efficient use of limited resources
  - US EPA supports this incremental increase
    (See December 19, 2000, letter from Alexis Strauss, EPA Region IX to Dennis Dickerson, Regional Board Executive Officer)

Industrial/Commercial Inspection Program

- **New Permit:**
  - Build on existing tools
    - Identified Critical Sources
    - Created a Database of Facilities
    - Developed site check lists and outreach materials
      - Phase I facilities
      - Automotive service facilities
      - Gas Stations
      - Restaurants

Industrial/Commercial Inspection Program

- **New Permit:**
  - Facilities covered
    - Phase I facilities
    - Automotive related service facilities
    - Gas Stations (under PIPP)
    - Restaurants
    - Other Commercial facilities potentially contributing to discharges to a 303(d) list impaired waterbody

Industrial/Commercial Inspection Program

- **New Permit:**
  - Use tools developed under previous permit
    - Upgrade and update database (WEB based & GIS option)
    - Implementation of minimum BMPs
    - Enforcement of non compliant sites with local ordinance
    - Coordination with Regional Board activities

Industrial/Commercial Inspection Program

- **Inspection:**
  - Use tools developed under previous permit
  - Focus on Pollution Prevention
  - Follow Construction Program Framework
    - minimum BMPs
    - local pollution prevention plans
    - progressive enforcement strategy
      - Verbal Warning
      - Notice of Violation
      - Penalties as per Municipal Code
      - Referral to AG
      - Joint actions with RB and/or US EPA

Legal Issues - Existing Permit

- "Does the RWQCB have legal authority to require municipal permittees to enforce state law on behalf of the RWQCB? ..."

  No - not without an MOU or some other legal mechanism.

Legal Issues - Existing Permit

BUT !! We are not asking permittees to enforce the General Permits for construction sites and for industrial facilities - or other state law, regulations, or requirements.

What authority does the Regional Board have to require permittees to control industrial runoff (including runoff from the construction industry)?

Legal Issues - Existing Permit

Answer:

- Federal law [Clean Water Act, Section 402(p)(3)(B)]
- Federal regulations [40CFR 122.26(d)(2)(iv)(C)]
- Guidance from US EPA [Letter dated December 19, 2000, from Alexis Strauss to Dennis A. Dickerson]

Clean Water Act

- Refer to handout for language from section 402.

40 CFR 122.26(d)(2)(iv)(C)

- Federal regulations specify that municipalities must develop a management program to reduce discharge of pollutants to the maximum extent practicable (MEP). *"The program shall (1) identify priorities and procedures for inspections and establishing and implementing control measures for such discharges; ..."*

Legal Issues - Existing Permit

- "The Permittees lack the statutory authority to inspect and enforce facilities permitted by agencies other than themselves." [Executive Advisory Committee letter to Alexis Strauss, dated March 22, 2001]

  No – we disagree.

Legal Issues - Existing Permit

What authority does the State have to require permittees to control industrial runoff?

- *Answer: The 40 CFR regulation, Clean Water Act, as cited above.*

Legal Issues - Statewide

- Receiving Water Limitation (Part 2 of permit):
  - Language was developed to
    - meet requirements of the Clean Water Act, and
    - be consistent with State Board Order 99-05 (refer to handout).

Legal Issues - Statewide

- SUSMPs (Standard Urban Storm Water Mitigation Plans):
  - Do they improperly infringe on local land use authority?

    No - This conclusion is drawn directly from Board Order 2000-11 (see handout).

Legal Issues - Statewide

- SUSMPs (Standard Urban Storm Water Mitigation Plans):
  - Does the requirement to 0.75" capture/retention/treatment (or equivalent) violate the CA Water Code (section 13360) by specifying the manner in which Permittees must comply?

Legal Issues - Statewide

- Maximum Extent Practicable (MEP)

Open Forum for Public Comment

Trash in the Los Angeles River

Los Angeles Times Photo. By Rick Meyer (January 22, 2001)

R0001922

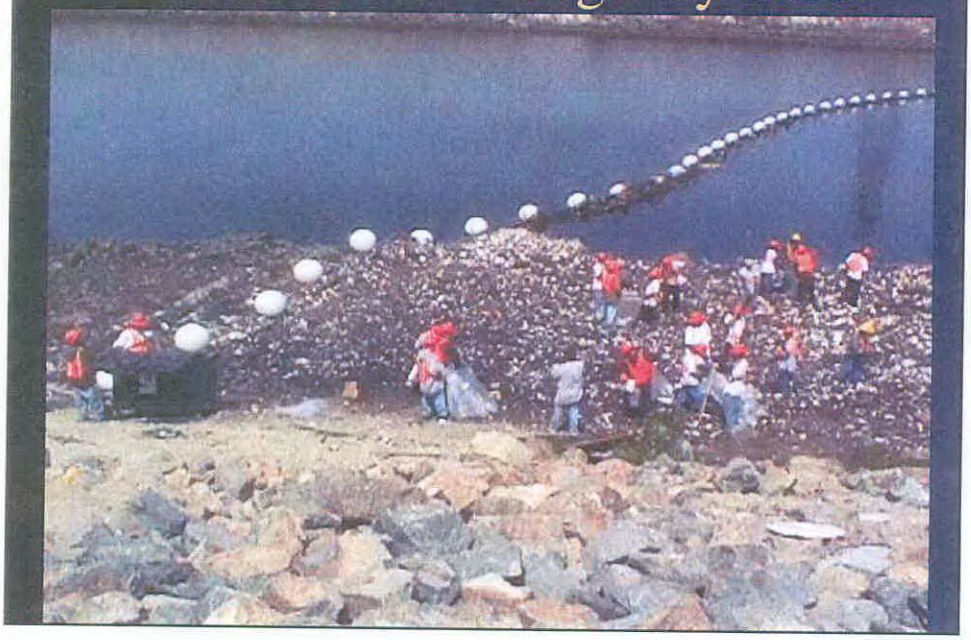
R0001924

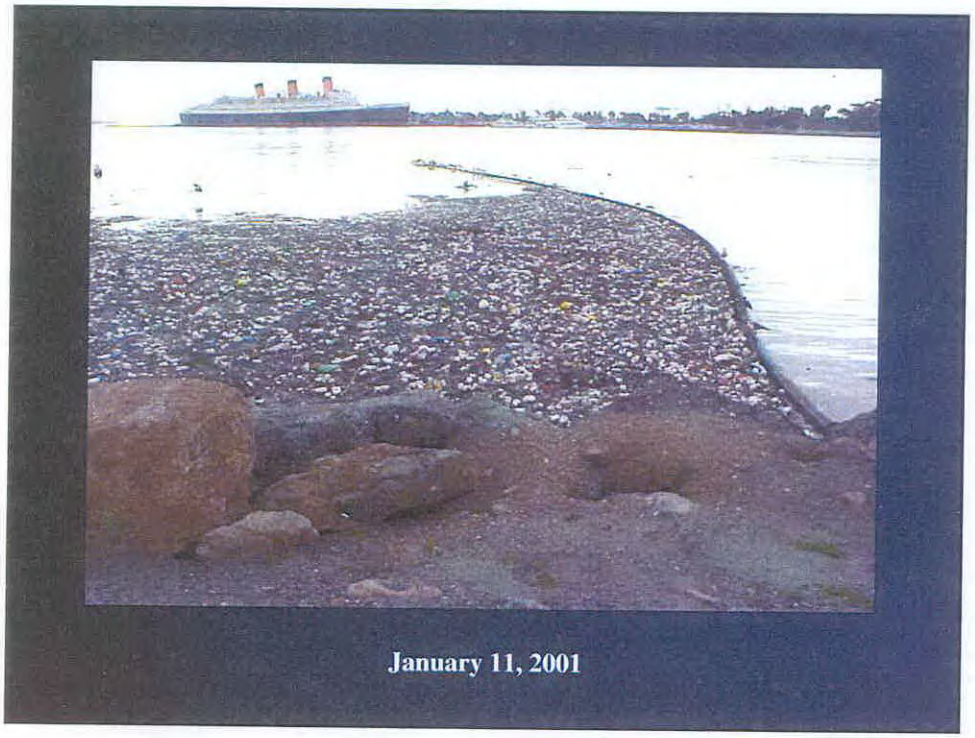
BEACH BLIGHT

Rainstorms pouring debris on shores

3,000 tons from river clutter coastline of L.B.

LA River trash caught by boom

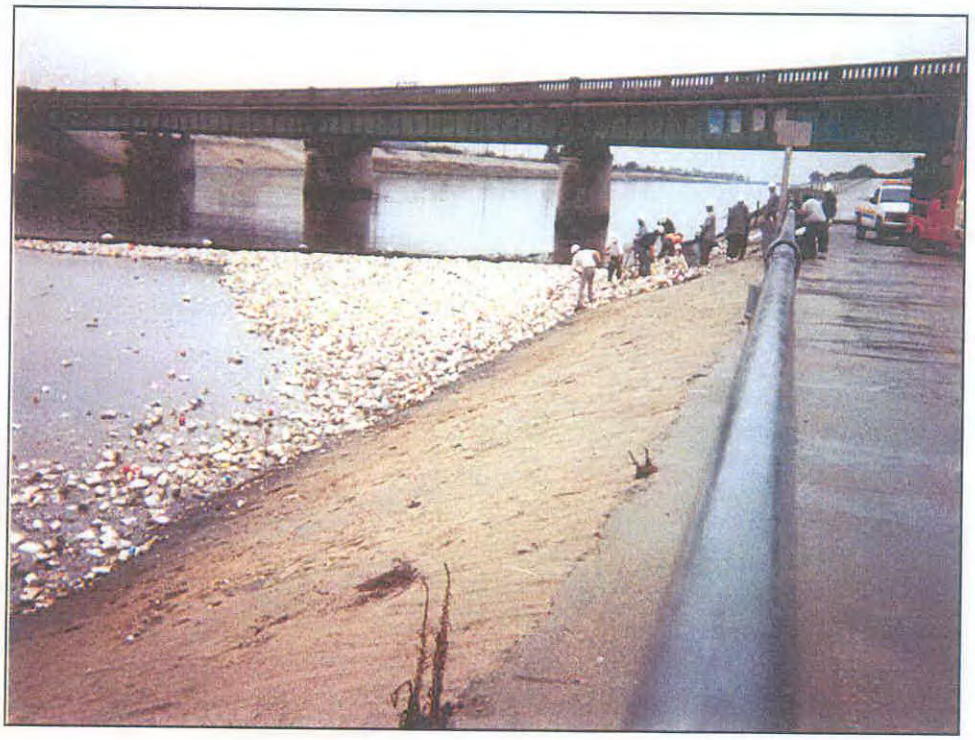


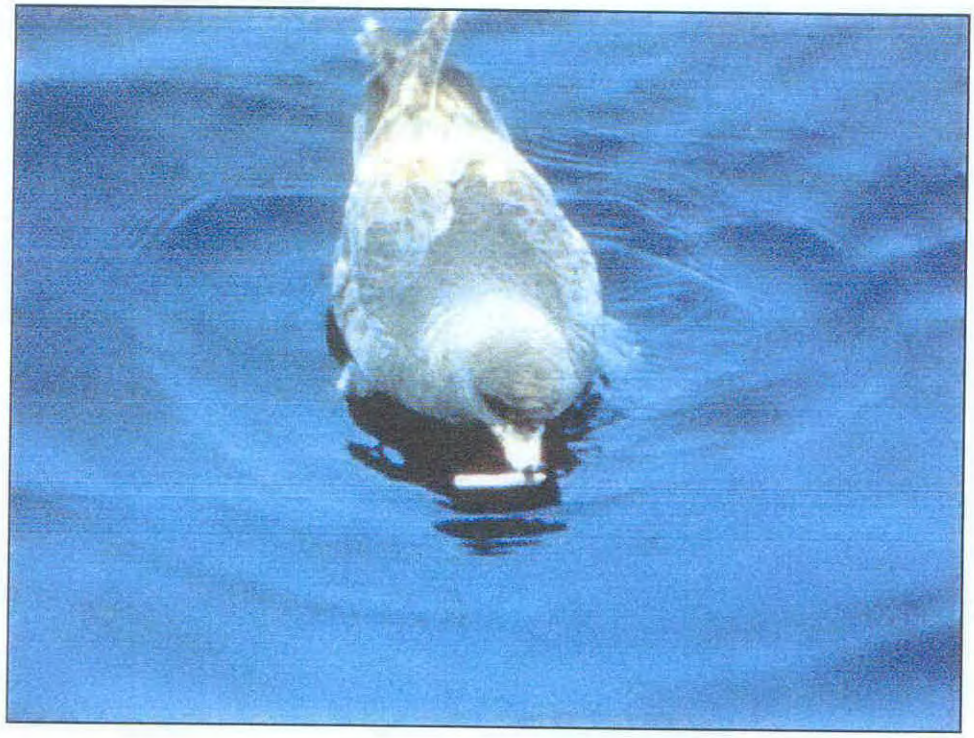


January 11, 2001

R0001928

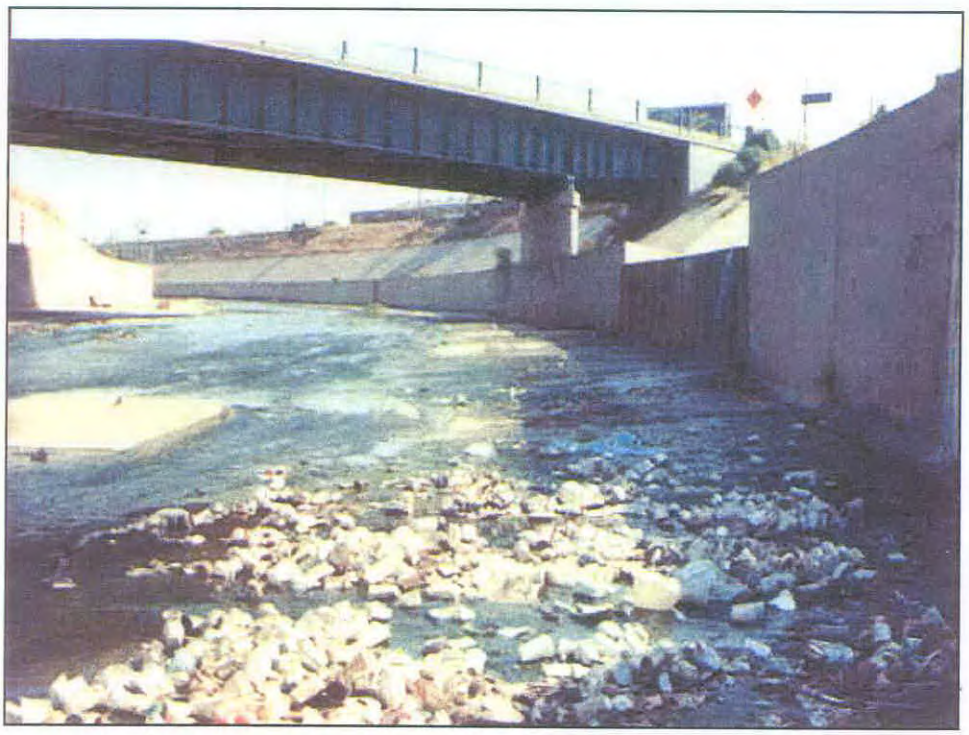
January 11, 2001





Trash in Ballona Creek

R0001933



STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER: WQ 2000 - 11

In the Matter of the Petitions of
THE CITIES OF BELLFLOWER, ET AL., THE CITY OF ARCADIA, AND WESTERN STATES PETROLEUM ASSOCIATION
Review of January 26, 2000 Action of the Regional Board
and
Actions and Failures to Act
by both the
California Regional Water Quality Control Board,
Los Angeles Region and Its Executive Officer
Pursuant to Order No. 96-054,
Permit for Municipal Storm Water and Urban Run-Off Discharges Within
Los Angeles County
[NPDES NO. CAS614001]

SWRCB/OCC FILES A-1280, A-1280(a) and A-1280(b)

BY THE BOARD:

On July 15, 1996, the Los Angeles Regional Water Quality Control Board (Regional Water Board) issued a revised national pollutant discharge elimination system (NPDES) permit in Order No. 96-054 (permit) to the 85 incorporated cities and the county within Los Angeles County (the County).[1] The permit covers storm water discharges from municipal separate storm sewer systems throughout the County.[2]

[1] This was the second storm water permit adopted for Los Angeles County and its cities. The first permit was the subject of an earlier Order. (In the Matter of Natural Resources Defense Council, Inc., Order WQ 91-04). In this permit, the County is designated as the Principal Permittee, and each city is designated as a permittee. The County is required to submit various documents on behalf of all of the permittees.
[2] The Regional Water Board has since issued a separate permit for one city, Long Beach. The relevant provisions of the Long Beach permit are similar to those in Order No. 96-054.

The permit contains provisions for the regulation of storm water discharges from development planning and construction.[3] Pursuant to these provisions, the County was required to submit Standard Urban Storm Water Mitigation Plans (SUSMPs).[4] The SUSMPs are plans that designate best management practices (BMPs) that must be used in specified categories of development projects. The County submitted SUSMPs, but the Regional Water Board approved the SUSMPs only after making revisions. The Executive Officer issued the revised SUSMPs on March 8, 2000.[5]

On February 25, 2000, the State Water Resources Control Board (State Water Board or Board) received a petition for review of the actions and failures to act regarding the SUSMPs from a number of cities, the Building Industry Association of Southern California and the Building Industry Legal Defense Foundation (jointly referred to as Cities). A second petition was received from the City of Arcadia. And a third petition was received from the Western States Petroleum Association (WSPA). On April 7, 2000, the petitioners filed amendments to their petitions, concerning the March 8, 2000 issuance of the SUSMPs. The Cities' amendment also revised the list of cities included in the petition. The Cities' petition now includes 32 cities. The petitions are legally and factually related, and have therefore been consolidated for purposes of review.[6] The petitioners also requested a stay of the SUSMPs. This request was denied by letter, dated May 11, 2000.

[3] Permit, Part 2.III. These provisions focus more on post-construction impacts of development than on discharges from construction activities.
[4] Permit, Part 2.III.A.1.c.
[5] These are referred to herein as the Final SUSMPs. The Final SUSMPs also apply to Long Beach, even though it is subject to a separate permit.
[6] Cal. Code of Regs., tit. 23, section 2054.

On June 7 and 8, 2000, the Board held a hearing in Torrance. Several entities, including the petitioners, the Regional Water Board, and several environmental groups[7], were designated parties. The evidence from that hearing has been included in the record before the Board. The record for comments on the petition was kept open until the end of the hearing. The parties were allowed to submit post-hearing briefs.[8]

I. BACKGROUND

In prior Orders[9] this Board has explained the need for the municipal storm water programs and the emphasis on BMPs in lieu of numeric effluent limitations. The emphasis for preventing pollution from storm water discharges is still on the development and implementation of effective BMPs, but with the expectation that the level of effort will increase over time. In its Interim Permitting Approach[10], the United States Environmental Protection Agency (U.S. EPA) stated that first-round permits should include BMPs, and expanded or better-tailored BMPs in subsequent permits where necessary to attain water quality standards. Dischargers, consultants, and academic institutions in California and nationwide have conducted numerous studies on the effectiveness of BMPs and appropriate design standards. While many questions are still

[7] The environmental groups are Natural Resources Defense Council, Inc., Santa Monica BayKeeper, and Heal the Bay.

[8] There are several documents that were not timely received and, therefore, are not made a part of the record before the Board. The hearing notice specified that all evidence from parties must be received by May 31, 2000. The Regional Water Board submitted documents on June 6, 2000. The hearing notice specified that policy statements were due by the close of the hearing. Several comment letters were received June 12, 13, and 19, 2000. None of these submittals are a part of the record. The post-hearing briefs were subject to a 10-page limit. The environmental groups submitted objections to the post-hearing brief submitted by the Cities. First, the environmental groups challenge the length of the brief. All briefs were subject to a 10-page limit. The Cities submitted a 10-page brief, with a 22-page attachment showing extensive proposed revisions to the SUSMPs. This submittal violates the page limit, and only the brief is considered part of the record. Second, the environmental groups claim that an e-mail message referred to by the petitioners is subject to attorney-client privilege and should not have been used in this hearing. This e-mail message, from the Regional Water Board's counsel to one of its engineers, was placed in the Regional Water Board's administrative record and submitted to the State Water Board. Any privilege that may have attached to the message has been waived and no longer exists. Finally, the post-hearing brief from the City of Arcadia was received late and will not be considered. Documents submitted late for interim deadlines (such as the deadline for submitting responses to the petitions), have been included in the record.

[9] See, especially Orders WQ 91-03 (In the Matter of Citizens for a Better Environment et al.) and WQ 91-04.

[10] Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits. (61 Federal Register 57425.)

outstanding, more is expected of municipal dischargers, and many are implementing more effective programs.

While storm water management plans are improving, our knowledge of the impacts is also growing. Urban runoff has been determined to be a significant contributor of impairment to waters throughout the state. In Los Angeles specifically, beach closures are sometimes associated with urban runoff. In adopting the SUSMPs, the Regional Water Board took note of the urgent need for preventing further pollution from urban runoff and storm water discharges.

It is important to emphasize the role of the SUSMPs within the totality of regulating storm water discharges, and the purpose of these particular control measures. The requirement to prepare SUSMPS was part of the development controls in the permit. In addition to development controls, the permit requires education, public outreach, programs to restrict illicit connections and discharges, and controls on public facilities. In the context of the entire effort required by the permit, the development controls can be seen as preventing the existing situation from becoming worse.

The Final SUSMPs include a list of mandatory BMPs for nine categories of development. There are provisions that are applicable to all categories and lists of BMPs for individual categories. Requirements applicable to all categories include provisions to limit erosion from new development and redevelopment, requirements to conserve natural areas, protection of slopes and channels, and storm drain stenciling. Examples of BMPs specific to categories of discharge include design of loading docks for commercial projects and design of fueling areas for retail gasoline outlets. In most respects, the Final SUSMPs were similar to those proposed by the County. The significant departures were the inclusion of a numeric design standard for structural or treatment control BMPs, and the inclusion of certain types of projects that were not

covered in the County's proposal. The design standard creates objective and measurable criteria for the amount of runoff that must be treated or infiltrated by BMPs.

The record indicates that the purpose of the development controls, including the SUSMPs, is not simply to prevent pollution associated with construction runoff. As the petitioners point out, construction discharges are already subject to this Board's Statewide Construction Permit. The development controls in the SUSMPs, on the other hand, focus on post-construction runoff. They are aimed at limiting not just the pollutants in runoff from the new development, but also the volume of runoff that enters the municipal storm sewer system. By limiting runoff from new development, the SUSMPs prevent increased impacts from urban runoff generally. There is adequate technical information in the record to show that by controlling the volume of runoff from new development, BMPs can be effective in reducing the discharge of pollutants in storm water runoff.

The Procedure for Adopting the SUSMPs

The permit requires a program for controls on Development Planning and Construction. It involved a number of submissions by the County in consultation with the Cities. The first step was submission of a checklist for determining priority projects and exempt projects. The checklist was due on January 30, 1998. A list of recommended BMPs for development projects was also due on that date. The SUSMPs were due within six months of approval of the BMP list, and were to incorporate BMPs for certain categories of development. Following approval of the SUSMPs, the cities and County were to implement development programs for priority projects, consistent with the BMP list and the SUSMPs.

The BMP list was not approved until April 22, 1999. Thereafter, the County submitted proposed SUSMPs on July 22, 1999. The Regional Water Board held a public workshop on

August 10, 1999. Following the workshop, the County submitted revisions to the SUSMPs on August 12, 1999. On August 16, 1999, the Regional water Board gave notice that it would discuss the SUSMPs in a public meeting on September 16, 1999. There was significant discussion at that meeting regarding the intent of the Executive Officer to approve the SUSMPs, but with revisions including a numeric design standard. At the conclusion of the meeting, the Regional Water Board members asked the Executive Officer to revise the SUSMPs and bring them back to another meeting. On December 7, 1999, the Executive Officer circulated revised SUSMPs for public review. This document incorporated a numeric design standard and made other revisions to the permittees' proposal. The Regional Water Board held a hearing on the SUSMPs on January 26, 2000. At that meeting, the Regional Water Board endorsed the SUSMPs revised by the Executive Officer, but directed him to make further changes. The Executive Officer issued the Final SUSMPs on March 8, 2000.

The Contents of the Final SUSMPs

The permit provides that the SUSMPs must incorporate the appropriate elements of the BMP list and, at a minimum, apply to seven development categories: 100-plus home subdivisions; 10-plus home subdivisions; 100,000-plus square foot commercial developments; automotive repair shops; retail gasoline outlets; restaurants; and hillside single-family dwellings.

The SUSMPs proposed by the County applied to these seven categories. Various BMPs applied to the different categories, and the SUSMPs contained narrative mitigation requirements for source control and treatment. The July proposals stated:

> "The development must be designed so as to mitigate (infiltrate and/or treat) the site runoff generated from impervious directly connected areas that may contribute pollutants of concern to the storm water conveyance system."

There were no numeric design criteria for mitigation. According to various participants, earlier County drafts had included design standards to mitigate flows from 0.6-inch storm events. But any numeric criteria had been removed from the version that was submitted.

In its revised SUSMPs, submitted on August 12, the County explained in its cover letter that the mitigation language did not mean that all runoff must be mitigated. Rather, the County's intent was to omit a numerical standard from the SUSMPs. The revised SUSMPs no longer referred to mitigation at all. Instead, the following language replaced the mitigation requirement:

> "The development must be designed so as to minimize, to the maximum extent practicable (MEP), the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas (DCIA), to the storm water conveyance system as approved by the building official."

The Final SUSMPs, as approved by the Executive Officer and the Regional Water Board, included several revisions from the County's submittal. The revision that is of greatest concern to the petitioners is the addition of Design Standards for Structural or Treatment Control BMPs.[11] The design standards require that developments subject to the SUSMPs shall be designed to mitigate storm water runoff (by treatment or infiltration) from one of the following:

> "1. The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area..., or
>
> 2. The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment..., or
>
> 3. The volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or
>
> 4. The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event."

[11] The Final SUSMPs also include the narrative language quoted from the County's August 22, 1999 proposal.

The Final SUSMPs also applied to two additional categories of development: parking lots over 5,000 square feet or with 25 or more spaces and exposed to storm water, and to developments in environmentally-sensitive areas. Other revisions included application to all projects in the categories instead of discretionary projects only and the definition of redevelopment.

II. CONTENTIONS AND FINDINGS[12]

Contention: The petitioners contend that the Regional Water Board erred in not complying with the Administrative Review Process within the permit, and acted arbitrarily and capriciously and in violation of the Clean Water Act and state law.

Finding: The permit required the County, in consultation with the cities subject to the permit, to submit SUSMPs. The permit includes some general minimum requirements for the SUSMPs.[13] The Executive Officer is granted authority to approve the SUSMPs.[14]

The permit also contains an administrative review process.[15] The permit states that the administrative review process "formalizes the procedure for review and acceptance of reports and documents" and "provides a method to resolve any differences in compliance expectations between the Regional Board and Permittees, prior to initiating enforcement action."[16] Following this introductory statement, the permit includes two procedures. The first is for review and approval or disapproval of reports and documents. The second is the dispute resolution section that must be followed prior to enforcement action.

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[12] This Order does not address all of the issues raised by the petitioners. The Board finds that the issues that are not addressed are insubstantial and not appropriate for State Water Board review. (See *People v. Barry* (1987) 194 Cal.App.3d 158, [239 Cal.Rptr. 349], Cal. Code Regs., tit. 3, § 052.)
[13] Permit, Part 2, III.A.1.c.
[14] Permit, Part 2, III.A.2.
[15] Permit, Part 2, I.G.
[16] *Id.*

The process for review of documents that are subject to the Executive Officer's approval is that the Executive Officer will notify the permittees of the results of the review and approval or disapproval within 120 days. If the Executive Officer does not do so, the permittees must notify the Regional Water Board of their intent to implement the documents without approval. The Executive Officer then has 10 days to respond, or the permittees may implement the program and the Executive Officer may not make modifications.

The dispute resolution procedure is to be used when the Executive Officer determines that a permittee's storm water program is insufficient to meet the permit's provisions. The Executive Officer must send a "Notice of Intent to Meet and Confer" with the permittee. A meet and confer period then ensues, resulting in a written "Storm Water Program Compliance Amendment (SWPCA)." The permittee is provided time to comply with the SWPCA. The Executive Officer is not allowed to take enforcement action against a permittee until the Executive Officer notifies the permittee in writing that the administrative review process has been exhausted and that a violation exists warranting enforcement.

The petitioners contend that the Executive Officer failed to notify the permittees that their SUSMPs were inadequate within 120 days of its submittal. The petitioners also argue that, by revising the SUSMPs without pursuing the dispute resolution process, the Regional Water Board "violated" the terms of the permit.

The provision for review of documents, which clearly includes the SUSMPs, requires that the Executive Officer notify the permittees of the results of the review and approval or disapproval within 120 days. The County submitted the revised SUSMPs on August 12, 1999. Within 120 days, the Regional Water Board held a workshop where staff expressed their concerns with the SUSMPs. Also within 120 days the Regional Water Board itself held a public

meeting where there was extensive discussion and concern by board members that the SUSMPs did not include a numeric standard. And, prior to any notification by the permittees that they would proceed with implementing their SUSMPs, the Regional Water Board held a hearing January 26, 2000, where it directed the Executive Officer to issue the SUSMPs with revisions. The Executive Officer did so on March 8, 2000.

It is clear from the record that the Executive Officer, and the Regional Water Board itself, did inform the permittees that the SUSMPs were inadequate. There was no requirement for a specific form for expressing disapproval of documents. The extensive discussion and meetings on the need for revisions to the SUSMPs, and the Executive Officer's approval of revised SUSMPs, plainly refutes the allegation that the Regional Water Board never notified the permittees of its disapproval of the County's proposed SUSMPs.

The permittees also claim that the Regional Water Board "violated" the permit by failing to institute the meet and confer process.[17] The dispute resolution process, which includes meet and confer, did not apply to the decision to disapprove the proposed SUSMPs. That process is only required when the Regional Water Board ultimately takes an enforcement action against a permittee. It is separate from the process for review and approval or disapproval of documents, and does not even appear to relate to possible enforcement actions for submission of inadequate documents. This is illustrated by the fact that the provision regarding documents refers to submittals from both the Principal Permittee and the individual permittees, while the dispute resolution provision refers only to the permittees. This distinction is relevant because the County is charged with submitting the documents, while the individual permittees are responsible for compliance. A fair reading of the entire section on the administrative review process is that the

[17] We note that permits are issued to permittees to allow discharges to waters of the state. It is only permittees, and not Regional Water Boards, who can be charged with violating permits.

review and approval or disapproval of documents applies to submission of documents by the County on behalf of the cities, while the dispute resolution process applies to enforcement actions against any permittees for failing to implement adequate programs.

Contention: The petitioners contend that the Regional Water Board was not authorized to revise the SUSMPs to add more stringent requirements.

Finding: The petitioners contend that the mitigation standards in the SUSMPs are more stringent than the requirement in the permit to reduce pollutants in storm water runoff to the maximum extent practicable (MEP)[18]. The issue of what level of protection constitutes MEP will be discussed *Infra*, in the discussion of the reasonableness of the numeric standards. But the petitioners also make certain procedural claims on this point. They argue that in approving the BMP list, the Regional Water Board determined that those BMPs constituted MEP and that the Board could not add additional BMPs in the SUSMPs. They also contend the Regional Water Board itself had no authority to "usurp" the Executive Officer's role in reviewing the SUSMPs.[19] Finally, the petitioners contend that the Regional Water Board was not authorized to mandate a program for the permittees without amending the permit.

The permit requires the County to submit a list of BMPs for approval. The Regional Water Board approved this list. Following approval of the list, the County was required to submit the SUSMPs, which must "incorporate the appropriate elements of the recommended BMPs list."[20] The petitioners contend that by approving the list, the Regional Water Board determined that those BMPs constituted MEP, and that under the terms of the permit the Regional Water Board could not require additional BMPs.

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[18] The technology-based standard for controls under municipal storm water permits is MEP. For a fuller discussion of this standard, see Order WQ 91-03.

[19] It is undisputed that, at its January 26, 2000 meeting, the Board directed the Executive Officer to make additional revisions to the SUSMPs.

[20] Permit, Part 2, III.A.1.c.

In addressing this contention, we face what appears to be a fundamental misunderstanding of the numeric design standards on the part of the petitioners. The design standards are objective criteria that developers must achieve in designing their BMPs. The design standards are not separate BMPs. The standards tell what magnitude of storm event the BMPs must be designed to treat or infiltrate. They do not specify the BMPs that must be employed.

The SUSMPs as submitted by the County specify BMPs for various categories of development. Many of these BMPs are designed to minimize the pollutants in storm water runoff, by reducing flow through infiltration or by treatment. Examples of BMPs proposed by the County include infiltration basins and trenches, oil/water separators, and media filtration. The County's proposed SUSMPs also included language requiring minimizing the introduction of pollutants to the storm water conveyance system. That language remains unchanged in the Final SUSMPs. The only significant difference between the two versions of the SUSMPs was that the Regional Water Board established numeric criteria for designing the BMPs.

In adopting the Final SUSMPs, the Regional Water Board based its decision on the MEP standard.[21] The Regional Water Board did not significantly revise the BMP list or specify further the actions that developers must take to comply with the SUSMPs. Thus, we find that the Regional Water Board did not inappropriately revise its determination of what constituted MEP.

The Regional Water Board is the political body responsible for water quality control in the Los Angeles region.[22] While the Regional Water Board may delegate specified powers and duties to its Executive Officer,[23] it can at any time act on its own behalf. The fact that the Board authorized its Executive Officer to approve the SUSMPs in the permit did not mean that the Board thereby denied itself the opportunity to provide direction to the Executive Officer in his

[21] Resolution R-00-02.
[22] Water Code sections 13200 and 13225.
[23] Water Code section 13223.

approval. Such an interpretation of its delegation authority would result in an improper failure of the Board to assume responsibility for water quality in the region.

We also find that the Regional Water Board was authorized to revise the SUSMPs to achieve compliance with the permit's requirements. The SUSMPs are a part of implementation of the permit. Because the permit regulates storm water discharges throughout the entire Los Angeles region and it is implemented by 85 cities and the County, it is obvious that the permit could not spell out every detail of the program for the five-year term of the permit. Instead, the implementation is through the submission, review and approval, and implementation of various programs, including the SUSMPs.[24] Where it receives a submission that it finds is not consistent with the requirements of the permit, it is reasonable for the Regional Water Board to be able to require revisions. The Regional Water Board is not required to amend the permit each time it approves a submittal or approves a submittal with revisions. On the other hand, if the Regional Water Board's action in requiring revisions is inconsistent with the terms of the permit, then the Board should not act without first amending the permit. While the Regional Water Board could have required the County to make the revisions rather than making them itself, we see no harm in the Regional Water Board's approach.

As will be discussed below, in most respects the Final SUSMPs are consistent with the permit. But there are some portions of the SUSMPs that are not consistent, and in those cases the SUSMPs provisions are further revised in this Order.

Contention: The petitioners make various procedural claims, including that they were denied due process, and that the Regional Water Board violated the Administrative Procedure

[24] A fuller discussion of the use of storm water management plans to incorporate a developing program is found in Order No. WQ 91-03.

Act, the California Environmental Quality Act (CEQA), and the California Constitution, Article XIII B, section 6 (regarding state mandates).

Finding: The petitioners point out that at the January 26, 2000 Regional Water Board hearing, there was some confusion over late changes to the SUSMPs and they contend they were not provided adequate opportunity to comment. There was significant discussion of the SUSMPs over several months. We do not agree with the petitioners that a program of this magnitude must necessarily take years to develop. But we are concerned that at the January 26, 2000 hearing, interested persons and permittees were not given adequate time to review late revisions or to comment on them. Given the intense interest in this issue, the Regional Water Board should have diverged from its strict rule limiting individual speakers to three minutes and conducted a more formal process. Such a process should provide adequate time for comment, including continuances where appropriate.[25] But to the extent the Regional Water Board's process caused any harm, this Board cured those harms. We held a two-day hearing in Los Angeles County, where all parties were allowed significant time to present their positions and testimony. In addition, we allowed the introduction of new evidence that had not been presented to the Regional Water Board. At this point, all parties have been afforded a full opportunity to review the Final SUSMPs, to present their positions and evidence, and to engage in cross-examination. The petitioners' due process rights have been protected.

The Board has already addressed the contentions regarding compliance with other laws in prior decisions. The Administrative Procedure Act exempts the adoption of permits from its requirements.[26] While the SUSMPs are not a permit, they are implementing documents for a

[25] For future adjudicative proceedings that are highly controversial or involve complex factual or legal issues, we encourage regional water boards to follow the procedures for formal hearings set forth in Cal. Code of Regs., tit. 23, section 648 et seq.

[26] Government Code section 11352; See, Order No. 95-4 (In the Matter of the City and County of San Francisco).

permit, and are therefore subject to the exemption. Moreover, they are relevant only to this permit, and are not a general rule of application. The constitutional provisions regarding state mandates also do not apply to NPDES permits.[27] As will be explained below, the SUSMPs as revised herein, are consistent with MEP and therefore are federally mandated. The provisions of CEQA requiring adoption of environmental documents also do not apply to NPDES permits.[28] Again, as an implementing document for the permit, there is no requirement for a separate CEQA analysis.[29]

Contention: The petitioners contend that the SUSMPs do not properly apply the maximum extent practicable standard.

Finding: The permit, consistent with Clean Water Act section 402(p)(3)(B)(iii), requires controls to reduce the discharge of pollutants to the maximum extent practicable, or MEP.[30] In approving the Final SUSMPs, the Regional Water Board acknowledged that one of the primary objectives of the municipal storm water program is the requirement to reduce the discharge of pollutants from storm water conveyance systems to the MEP.[31] While all parties appear to agree that the standard for the SUSMPs is MEP, they disagree about what level of effort is necessary to comply with that standard.

The petitioners approach this issue from two angles. First, they contend that the SUSMPs will not provide water quality benefits that reflect MEP. Second, they contend that there could be adverse impacts on groundwater quality that have not been adequately evaluated.

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[27] See, Order No. WQ 90-3 (In the Matter of San Diego Unified Port District).
[28] Water Code section 13389.
[29] We do note with interest the environmental groups' comment that if the permittees believed it was necessary to comply with the APA and CEQA prior to adoption of the SUSMPs, then they themselves would have violated those acts in their submissions of the proposed SUSMPs.
[30] Permit, Finding 13.
[31] Final SUSMPs, at page 2; Resolution No. R-00-02, at page 3.

Storm Water Design Standards as MEP

In adopting the Final SUSMPs, the Regional Water Board found that many rivers and streams in Los Angeles County are impaired for pollutants found in storm water and urban runoff, and that storm water runoff carries pollutants from nearly all types of developed properties.[32] Pollutant loading from the aggregate of development in the basin results in impairments from sediments, metals, complex organic compounds, oil and grease, nutrients, and pesticides.[33] The Final SUSMPs reflect two goals: to reduce the amounts of these pollutants in runoff and to reduce the ability of runoff to act as a conveyance system to deliver more pollutants to receiving waters. The Final SUSMPs, which include lists of BMPs and design standards requiring treatment or infiltration, address these two goals.

Clean Water Act section 402(p)(3)(B)(iii), which sets forth the requirements for establishing MEP in municipal storm water permits, provides that such permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." The United States Environmental Protection Agency (U.S. EPA), in a guidance document, explains that BMPs should be used in first-round storm water permits, and "expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards."[34] The Clean Water Act, as interpreted by U.S. EPA, does require that, in a second-round permit,[35] expanded BMPs may be appropriate. In light of the number of water

[32] Resolution No. R-00-02.
[33] *Id.*
[34] Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits, 61 Federal Register 57425 (1996).
[35] The original permit was issued in 1990. The 1996 permit is a second-round permit.

bodies impaired by runoff in Los Angeles County, it was appropriate to expand the scope of BMPs during the permit term.

The regulations implementing section 402(p) specifically require municipalities to have controls to reduce the discharge of pollutants from their storm sewer systems that "receive discharges from areas of new development and significant redevelopment," including post-construction discharges.[36] Clearly, it was appropriate for the Regional Water Board to require BMPs for new development and significant redevelopment. The permittees, who submitted their own version of SUSMPs with listed BMPs for categories of development, appear to have no real quarrel with this general mandate.

This Board has already endorsed requirements to limit the flow of the "first flush" of storm water, which may contain more significant pollutants.[37] The permittees' own version of the SUSMPs required mitigation of storm water runoff by treatment or infiltration, thus conceding the propriety of these two approaches to lessening the impact of storm water discharges. The crux of the disagreement is that the Regional Water Board added numeric design standards to establish the amount of runoff that must be treated or infiltrated, and required the mandatory application of these standards to categories of development.

The addition of measurable standards for designing the BMPs provides additional guidance to developers and establishes a clear target for the development of the BMPs. The U.S. EPA guidance manual suggests the use of design criteria and performance standards for post-construction BMPs.[38] The numeric criteria the Regional Water Board adopted essentially

[36] 40 CFR section 122.26(d)(2)(iv)(A)(2).
[37] In the Matter of National Steel and Shipbuilding Company, et al., Order WQ 98-07, at slip opinion 7.
[38] Guidance Manual for the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Strom Sewer Systems, at page 6-4 (November 1992).

requires that 85 percent of the runoff from the development be infiltrated or treated.[39] In adopting these standards, the Regional Water Board based its decision on a research review of standards in other states and a statistical analysis of the rainfall in the area. The standard was set to gain the maximum benefit in mitigation while imposing the least burden on developers.[40] In light of the evidence of the use of this or more stringent standards in other states, the expert testimony supporting this standard, the endorsement by U.S. EPA in its comments, and the cost-effectiveness of its implementation (discussed below), the Regional Water Board acted appropriately in determining that the standards reflect MEP.[41]

We also find that the Regional Water Board appropriately applied these standards to seven of the categories listed in the SUSMPs: single-family hillside residences, 100,000 square foot commercial developments, automotive repair shops, restaurants, home subdivisions with 10 to 99 housing units, home subdivisions with 100 or more housing units, and parking lots with 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff.[42] These categories, except for parking lots, were already targeted for special treatment in the permit. The evidence shows that each listed category can be a significant source of pollutants and/or runoff following development. It is appropriate that the design standards apply so that BMPs for these categories of development result in the infiltration or treatment of a significant about of the runoff.

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[39] Four different methods of calculation are permitted, so the percentage of capture may vary slightly.

[40] At the hearing in this matter, Regional Water Board staff explained that the standard was set at the bottom of the "knee" of the curve where the benefits of the mitigation requirements decrease and the cost increases. Other states have set the standard higher along this curve, requiring 90 to 95 percent mitigation.

[41] This conclusion in no way departs from our acceptance of BMPs in lieu of numeric effluent limitations in storm water permits. (See, e.g., Order WQ 91-03 and Order WQ 91-04.) The numeric standard is a design standard for BMPs. It does not quantify or limit the pollutants in the effluent. It also does not specify which of the listed BMPs must be employed.

[42] As discussed below, this Board is revising the SUSMPs to delete the application of the design standards to retail gasoline outlets and to locations within or directly adjacent to or discharging directly to environmentally-sensitive areas.

Potential Impacts on Ground Water

The petitioners contend that infiltration of runoff may lead to ground water pollution, and that the Regional Water Board did not properly consider such potential impacts. The mitigation standards provide for a waiver where there is a risk of ground water contamination because a known unconfined aquifer lies beneath the land surface or an existing or potential underground source of drinking water is less than ten feet from the soil surface.[43] The Final SUSMPs also include a discussion on how to use infiltration so that the risk of contamination of groundwater is reduced, and where infiltration is not appropriate.[44]

The Regional Water Board did consider the potential impacts to groundwater from infiltration, and included appropriate limitations and guidance on its use as a BMP. These provisions will ensure adequate protection of groundwater from any adverse impacts due to infiltration.

Contention: The petitioners contend the Regional Water Board failed to show that the SUSMPs as adopted are cost-effective and that the benefits to be obtained outweigh the costs.

Finding: The petitioners refer to the Preamble to the Phase II storm water regulations[45] as the basis for their economic argument. The quoted language, however, does not wholly support the petitioners' contention. The Preamble states that President Clinton's Clean Water Initiative clarifies "that the maximum extent practicable standard should be applied in a site-specific, flexible manner, taking into account cost considerations as well as water quality effects."[46] It is clear that cost should be considered in determining MEP; this does not mean that

[43] Final SUSMP, page 14.
[44] *Id.*, at page 15.
[45] 64 Federal Register 68722 and following. These regulations do not apply to the permit, but the general language on MEP is relevant to EPA's interpretation of the standard.
[46] 64 Federal Register 68722, 68732 (December 8, 1999).

the Regional Water Board must demonstrate that the water quality benefits outweigh the economic costs.

While the standard of MEP is not defined in the storm water regulations or the Clean Water Act, the term has been defined in other federal rules. Probably the most comparable law that uses the term is the Superfund legislation, or CERCLA, at section 121(b). The legislative history of CERCLA indicates that the relevant factors, to determine whether MEP is met in choosing solutions and treatment technologies, include technical feasibility, cost, and state and public acceptance.[47] Another example of a definition of MEP is found in a regulation adopted by the Department of Transportation for onshore oil pipelines. MEP is defined as to "the limits of available technology and the practical and technical limits on a pipeline operator . . . ."[48]

These definitions focus mostly on technical feasibility, but cost is also a relevant factor. There must be a serious attempt to comply, and practical solutions may not be lightly rejected. If, from the list of BMPs, a permittee chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a permittee employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP requires permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive. Thus while cost is a factor, the Regional Water Board is not required to perform a cost-benefit analysis.

In reviewing the record, it is apparent that the Regional Water Board did evaluate the cost of the SUSMPs. While the petitioners claim there is no evidence in the record to show the

[47] 132 Cong. Rec. H 9561 (Oct. 8, 1986).
[48] 49 CFR section 194.5.

SUSMPs are necessary and cost effective, the opposite is true. The record is replete with documentation of costs of pilot mitigation projects, studies from similar programs in other states, and research studies. The Regional Water Board complied with the requirement to consider cost.

The Regional Water Board found that the cost to include BMPs that will meet the mitigation criteria will be one to two percent of the total development cost. This amount appears reasonable, especially in light of the amount of impervious surface already in Los Angeles County and the impacts on impaired water bodies. In considering the cost of compliance, it is also important to consider the costs of impairment. The beach closures in the Los Angeles region, well documented in the evidence, have reached critical proportions. These beach closures clearly have a financial impact on the area, and should be positively affected by the SUSMPs.

We do note that there could be further cost savings for developers if the permittees develop a regional solution for the problem. We recommend that the cities and the County, along with other interested agencies, work to develop regional solutions so that individual dischargers are not forced to create numerous small-scale projects. While the SUSMPs are an appropriate means of requiring mitigation of storm water discharges, we also encourage innovative regional approaches.[49]

Contention: The petitioners have raised contentions regarding details of the SUSMPs, including the amount of time allowed for inclusion of SUSMPs in local ordinances, and their application to both "discretionary" and "non-discretionary" projects. In addition, during the hearing certain ambiguities in the wording of the Final SUSMPs became apparent, including the provisions regarding redevelopment and environmentally-sensitive areas. In this portion of the

[49] We note that the SUSMPs as written do not in any way preclude the development of regional solutions approved by the Regional Water Board as a means to comply with the BMP and design standard requirements.

Order we address these issues and also the application of the design standards to retail gasoline outlets (RGOs) and the waiver funding requirements.

Finding: The testimony at the hearing in this matter revealed that there are specific provisions of the SUSMPs that create confusion as to the types of development projects subject to the mitigation design standards. The petitioners also contend that application of the standards to specific types of development either is unreasonable or is inconsistent with the terms of the permit. The specific requirements are discussed below.

Retail Gasoline Outlets

Petitioner WSPA contends that RGOs should be excluded from the SUSMPs. Its petition raised the same general contentions as the other petitioners, but at the hearing WSPA presented evidence specific to RGOs. In particular, WSPA raised questions about the propriety of applying the design standards for BMPs to RGOs. In considering this issue, we conclude that construction of RGOs is already heavily regulated and that owners may be limited in their ability to construct infiltration facilities. Moreover, in light of the small size of many RGOs and the proximity to underground tanks, treatment may not always be feasible, or safe. The mandatory BMPs that are included in the SUSMPs may be adequate to achieve MEP at RGOs, but the Regional Water Board should add additional mandatory BMPs, such as use of dry cleanup methods (e.g. sweeping) for removal of litter and debris, use of rags and absorbents for leaks and spills, restricting the practice of washing down hard surfaces unless the wash water is collected and disposed of properly, annual training of employees on proper spill cleanup and waste disposal methods, and the inclusion of BMPs to address trash receptacle areas and air/water supply

areas.[50] We conclude that because RGOs are already heavily regulated and may be limited in their ability to construct infiltration facilities or to perform treatment, they should not be subject to the BMP design standards at this time, and recommend that the Regional Water Board undertake further consideration of a threshold relative to size of the RGO, number of fueling nozzles, or some other relevant factor. This Order should not be construed to preclude inclusion of RGOs in the SUSMP design standards, with proper justification, when the permit is reissued.

Redevelopment Projects

The SUSMPs were written to apply to new development and to some types of redevelopment in nine categories of projects. The definition of "redevelopment" reflected the intent of the Regional Water Board to define the scope of redevelopment projects subject to the requirements. That definition[51], however, was somewhat confusing, and it was apparent from testimony at the hearing that the parties had different understandings of the scope of redevelopment subject to the SUSMPs. In their post-hearing briefs, the various parties appeared to agree on the actual intent of the Regional Water Board in including redevelopment in the SUSMPs. This intent was to include redevelopment that adds or creates at least 5,000 square feet of impervious surface to the original development and, where the addition constitutes less than 50 percent of the original development, to limit the application of the BMP design standards to the addition.

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[50] These BMPs are from a list of BMPs in a publication of the California Storm Water Quality Task Force. (Best Management Practice Guide – Retail Gasoline Outlets. March 1997.) This publication includes BMPs in addition to those listed in the SUSMPs. All BMPs recommended in this publication should be mandated.

[51] The SUSMPs state: "Redevelopment" means, on an already developed site, the creation or addition of at least 5,000 square feet of impervious surfaces or the creation or addition of fifty percent or more of impervious surfaces or the making of improvements to fifty percent or more of the existing structure. Redevelopment includes, but is not limited to: the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces.

While some parties requested further requirements for development, it appears that the Regional Water Board's original intent was relatively simple to apply and results in a fair and appropriate application of the SUSMPs' requirements to redevelopment. Therefore, we will revise the definition in the SUSMPs accordingly.

Environmentally-Sensitive Areas

The permit required that the SUSMPs address at least seven development categories.[52] The final SUSMPs added two more categories: parking lots of 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff; and location within or directly adjacent to an environmentally-sensitive area (ESA). The petitioners contend that the addition of ESAs was inappropriate because the permit refers only to "development categories"[53] and ESA is a location category.

Whether or not the Regional Water Board went beyond the permit's terms in including this category, we find a fundamental problem with the language of the SUSMPs regarding ESAs. All of the other categories are relatively simple to apply because they describe the types of development that fall within the category. For instance, the threshold for a commercial development is 100,000 square feet. If the development is smaller, it is not subject to the SUSMPs. But for developments within ESAs, the SUSMPs contain no threshold. This absence led to speculation by the petitioners that something as small as a new patio on a home in an ESA would make the SUSMPs applicable. The Regional Water Board, at the hearing and in its post-hearing brief, conceded that there should be some threshold. While the Regional Water Board

[52] The categories listed in the permit are: single-family hill residences, 100,000 square-foot commercial developments, automotive repair shops, retail gasoline outlets, restaurants, home subdivisions with 10 to 99 housing units, and home subdivisions with 100 or more housing units. Permit, Part 2, III.A.1.c.
[53] *Id.*

did recommend a specific threshold, we believe that it is inappropriate for this Board to add a threshold that has not been fully discussed by all interested persons.

While it may be appropriate to include more stringent controls for developments in ESAs, we also note that such developments are already subject to extensive regulation under other regulatory programs. Moreover, in light of the permit language limiting the SUSMPs to development categories, ESAs are not an appropriate category within the SUSMPs. The Regional Water Board may choose to consider the issue further when it reissues the permit.

Discretionary and Non-Discretionary, or Ministerial, Projects

The petitioners contend that the SUSMPs should apply only to projects that are considered "discretionary" within the meaning of California Environmental Quality Act (CEQA).[54] They argue that the inclusion of non-discretionary, or ministerial, projects is inconsistent with the terms of the permit.

The permit provisions on development projects do refer to "discretionary" projects in several places. The permittees are directed to develop a checklist for determining priority and exempt projects.[55] Priority projects are defined as development and redevelopment projects requiring discretionary approval, which may have a potential significant effect on storm water quality.[56] The permittees are also required to develop a BMP list.[57] In developing the SUSMPs, the permittees are required to incorporate appropriate elements of the BMP list.[58] Next, the permittees must develop a program on planning control measures for priority projects (which are limited to projects requiring discretionary approval), consistent with the list of BMPs and the

[54] Public Resources Code section 21000 *et seq.*
[55] Permit, Part 2, III.A.1.a.
[56] *Id.*
[57] Permit, Part 2, III.A.1.b.
[58] Permit, Part 2, III.A.1.c.

SUSMPs.[59] The permit further states that, in order to assure compliance with these requirements, the permittees must develop guidelines on preparing CEQA documents that link mitigation conditions to "local discretionary project approvals."[60]

Taken as a whole, the provisions of the permit appear to link the development requirements for SUSMPs to developments that receive discretionary approval by local governments, as defined in CEQA. The SUSMPs are an implementation tool for the permit and must be consistent with the permit. While the limitation of the SUSMPs to discretionary projects may not be sufficiently broad for an effective storm water control program, the Regional Water Board acted inappropriately in expanding the SUSMPs to include non-discretionary projects. The Regional Water Board may consider expanding the development controls beyond CEQA discretionary projects when it reissues the permit. But at this time, the SUSMPs must be revised so that they are limited to development projects requiring discretionary approval within the meaning of CEQA.[61]

Waiver Funding Requirement

Where a waiver is granted from the design standard requirements, the Final SUSMPs provide that the permittee must require the project proponent to transfer the cost savings to a storm water mitigation fund. The fund is to be operated by a public agency or a non-profit entity, to promote regional or alternative solutions for storm water pollution in the same storm watershed. The petitioners contend that the funding requirement will create an additional administrative burden.

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[59] Permit, Part 2, III.a.2.
[60] Permit, Part 2, III.a.3.b.
[61] We note that the Final SUSMPs already include a definition of "discretionary project" consistent with the definition in the CEQA guidelines. Final SUSMPs at page 4 of 25; Title 14, California Code of Regulations, section 15357. Apparently this definition was inadvertently retained after the Regional Water Board decided to expand the SUSMPs beyond discretionary projects.

The concept of a mitigation fund or "bank" is a positive idea for obtaining regional solutions to storm water runoff. As a long-term strategy, municipal storm water dischargers should work to establish regional mitigation facilities, which may be more cost-effective and more technically effective than mitigation structures at individual developments. But at this point there are not sufficient resources in place to require all permittees to establish such funds or to find appropriate non-profit organizations. Before mandating funding, preliminary questions should be answered, including who will manage the fund, what types of projects it will be used for, what entities can legally operate such funds, and how permittees will determine the amount of the assessments. It would be appropriate for the County to consider developing a program with the appropriate flood control agency, or as a model for the separate cities to develop. There may be suitable agencies to administer such funds, but the development of programs may take some time. The Regional Water Board should consider adopting such a program when it reissues the permit, after consultation with the appropriate local agencies.

III. CONCLUSIONS

Based on the discussion above, the Board concludes that:

1. The Regional Water Board complied with the procedural requirements of the permit, including the Administrative Review Process, in approving the Final SUSMPs.
2. The Regional Water Board was authorized to revise the SUSMPs by including more stringent requirements than the permittees had proposed.
3. The Regional Water Board complied with did not violate the Administrative Procedure Act, CEQA, or the Constitutional provisions on state mandates. The petitioners' due process rights have been protected
4. The Regional Water Board considered the costs of the SUSMPs, and acted reasonably in requiring these controls in light of the expected benefits to water quality.

5. The Final SUSMPs reflect a reasonable interpretation of development controls that achieve reduction of pollutants in storm water discharges to the maximum extent practicable.
6. The SUSMPs include adequate protections of groundwater quality from any impacts from infiltration.
7. The SUSMPs will be revised to clarify the intent of the Regional Water Board and to make them consistent with the permit. Specifically, retail gasoline outlets should not be subject to the BMP design standards because they are already heavily regulated and may be limited in their ability to construct infiltration facilities or to perform treatment. Redevelopment projects should be subject to the SUSMPs only if they result in creation or addition of 5,000 square feet of impervious surfaces. Environmentally-sensitive areas should not be listed as a category in the SUSMPs. The SUSMPs should only apply to discretionary projects. The requirement for funding by project proponents who receive waivers should be deleted. The SUSMPs will be amended as shown in the attachment to this Order.
8. In light of the revisions of the SUSMPs made by this Order, and to allow the permittees adequate time to adopt implementing ordinances, the deadline for adopting ordinances will be revised to January 15, 2001, and the effective date of the Final SUSMPs will be revised to February 15, 2001.

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IV. ORDER

IT IS HEREBY ORDERED that the Standard Urban Storm Water Mitigation Plans for Los Angeles County and Cities in Los Angeles County is revised consistent with the amendments attached hereto. In all other respects the petitions are dismissed.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on October 5, 2000.

AYE: Arthur G. Baggett, Jr.
Mary Jane Forster
John W. Brown
Peter S. Silva

NO: None

ABSENT: None

ABSTAIN: None

Maureen Marché
Administrative Assistant to the Board

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER: WQ 99 - 05

Own Motion Review of the Petition of
Environmental Health Coalition
to Review Waste Discharge Requirements Order No. 96-03,
NPDES Permit No. CAS0108740
for Storm Water and Urban Runoff from the
Orange County Flood Control District
and the
Incorporated Cities of Orange County
Within the San Diego Region,
Issued by the
California Regional Water Quality Control Board,
San Diego Region.

SWRCB/OCC File A-1041

BY THE BOARD:

In Order WQ 98-01, the State Water Resources Control Board (State Water Board) ordered that certain receiving water limitation language be included in future municipal storm water permits. Following inclusion of that language in permits issued by the San Francisco Bay and San Diego Regional Water Quality Control Boards (Regional Water Boards) for Vallejo and Riverside respectively, the United States Environmental Protection Agency (EPA) objected to the permits. The EPA objection was based on the receiving water limitation language. The EPA has now issued those permits itself and has included receiving water limitation language it deems appropriate.

In light of EPA's objection to the receiving water limitation language in Order WQ 98-01 and its adoption of alternative language, the State Water Board is revising its instructions regarding receiving water limitation language for municipal storm water permits. It is hereby ordered that Order WQ 98-01 will be amended to remove the receiving water limitation language contained therein and to substitute the EPA language. Based on the reasons stated here, and as a precedent decision,[1] the following receiving water limitation language shall be included in future municipal storm water permits.[2]

RECEVING WATER LIMITATIONS

The permittees shall comply with Discharge Prohibitions [ ][3] and Receiving Water Limitations [ ] through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the SWMP and other requirements of this permit including any modifications. The SWMP shall be designed to achieve compliance with Receiving Water Limitations [ ]. If exceedance(s) of water quality objectives or water quality standards (collectively, WQS) persist notwithstanding implementation of the SWMP and other requirements of this permit, the permittees shall assure compliance with Discharge Prohibitions [ ] and Receiving Water Limitations [ ] by complying with the following procedure:

[1] In SWRCB Order WR 96-1, the State Water Board determined that water quality orders are precedent decisions. (See Gov. Code §11425.60.)

[2] This language may be revised as necessary to ensure that terminology conforms with the rest of the permit.

[3] Insert appropriate numbers for prohibitions and limitations that implement water quality objectives and water quality standards.

a. Upon a determination by either the permittees or the Regional Water Board that discharges are causing or contributing to an exceedance of an applicable WQS, the permittees shall promptly notify and thereafter submit a report to the Regional Water Board that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of WQSs. The report may be incorporated in the annual update to the SWMP unless the Regional Water Board directs an earlier submittal. The report shall include an implementation schedule. The Regional Water Board may require modifications to the report.

b. Submit any modifications to the report required by the Regional Water Board within 30 days of notification.

c. Within 30 days following approval of the report described above by the Regional Water Board, the permittees shall revise the SWMP and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, implementation schedule, and any additional monitoring required.

d. Implement the revised SWMP and monitoring program in accordance with the approved schedule.

So long as the permittees have complied with the procedures set forth above and are implementing the revised SWMP, the permittees do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Regional Water Board to develop additional BMPs.

///

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ORDER

IT IS ORDERED that Order WQ 98-01 is revised as discussed above.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on June 17, 1999.

AYE: James M. Stubchaer
Mary Jane Forster
John W. Brown
Arthur G. Baggett, Jr.

NO: None

ABSENT: None

ABSTAIN: None

Maureen Marché
Administrative Assistant to the Board

KCB

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER WQ 98-01

Own Motion Review of the Petition of
ENVIRONMENTAL HEALTH COALITION
to Review Waste Discharge Requirements Order 96-03,
NPDES Permit No. CAS0108740,
for Storm Water and Urban Runoff from the
Orange County Flood Control District
and the
Incorporated Cities of Orange County
Within the San Diego Region,
Issued by the
California Regional Water Quality Control Board,
San Diego Region.

SWRCB/OCC File A-1041

BY THE BOARD:

On August 8, 1996, the Regional Water Quality Control Board, San Diego Region (Regional Water Board), adopted Waste Discharge Requirements Order 96-03, NPDES No. CAS0108740, for storm water discharge from municipal separate sewer systems for the incorporated cities of Orange County within the San Diego Regional Water Board's boundaries (Orange County permit).[1] The waste discharge requirements constitute a national pollutant discharge elimination system (NPDES) permit pursuant to section 402(p) of the federal Clean Water Act (CWA).

[1] On March 8, 1996, the Regional Water Quality Control Board, Santa Ana Region, issued waste discharge requirements for storm water discharge to the incorporated cities of Orange County within the Santa Ana Regional Water Board's boundaries that are essentially identical to the permit adopted by the San Diego Regional Water Board.

On September 6, 1996, the State Water Resources Control Board (SWRCB) received a petition from the Environmental Health Coalition (petitioner) contesting certain provisions of the NPDES permit.[2] The SWRCB did not take formal action on the petition within the 270 days specified in Title 23, California Code of Regulations, section 2052(d). The SWRCB will, on its own motion, review the Regional Water Board's action as authorized by California Water Code section 13320(a).

I. BACKGROUND

The primary issue raised by petitioner concerns the Regional Water Board's implementation of the CWA requirement that all NPDES permits must include technology-based effluent limitations and any more stringent limitation necessary to meet water quality standards. Federal and state requirements relevant to the issues raised in the petition are discussed below.[3]

CWA section 301(a) prohibits the discharge of any pollutant unless pursuant to an NPDES permit. (33 U.S.C. § 1311(a).) Section 301(b)(1)(A) requires compliance with effluent limitations necessary to achieve compliance with technology-based standards (e.g., best practicable control technology currently available or secondary treatment). Section 301(b)(1)(C) also requires compliance with any more stringent effluent limitation "necessary to meet water quality standards." (33 U.S.C.

[2] This order is based on the record before the Regional Water Board. The Regional Water Board also issued an NPDES permit to the Department of Transportation and a petition was filed challenging that permit. In preparing this order, we have reviewed the record for the petition challenging that permit and other documents noted in this Order.

[3] See State Water Resources Control Board Order WQ 91-03 (*Citizens For a Better Environment, et al.*) for an extensive discussion of the regulatory framework for municipal separate storm sewer systems

§ 1311(b)(1)(c).) CWA section 402 establishes requirements for NPDES permits. (33 U.S.C. § 1342.) NPDES permits must comply with section 301. Section 402(p) establishes specific NPDES permit requirements for municipal storm water discharges and for storm water discharges associated with industrial activities. Section 402(p) includes a technology-based standard for storm water permits issued to municipal separate storm sewer systems. Such permits must require:

> "... controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." (33 U.S.C. § 1342(p)(3)(B)(iii).)

To comply with CWA sections 301 and 402 for municipal separate storm water discharges, a municipal storm water NPDES permit must include effluent limitations to meet the technology-based standard to reduce pollutants to the "maximum extent practicable" and any more stringent effluent limitations necessary to meet water quality standards. The United States Environmental Protection Agency (EPA) has promulgated regulations to implement NPDES requirements in CWA section 402, including storm water requirements of CWA section 402(p).[4] (See 40 C.F.R. Part 122.26.)

[4] CWA Section 402(p) specifies that permits for industrial discharges are required to comply with all technology-based and water quality-based requirements. (Section 402(p)(3)(A).) In contrast, CWA Section 402(p) specifies that permits for municipal separate storm water discharges shall require controls to comply with technology-based requirements but does not specifically state that municipal permits must require controls to comply with water quality-based requirements. (Section 402(p)(3)(B).) EPA, however, has interpreted the Clean Water Act to require permits for municipal separate storm water discharges to include requirements to achieve compliance with water quality standards. See memorandum "Compliance with Water Quality Standards in NPDES Permits Issued to Municipal Separate Storm Sewer Systems" from E. Donald Elliott, General Counsel, EPA, to Nancy J. Marvel, Regional Counsel, EPA Region 9 (January 9, 1991).

CWA section 303 requires states to adopt water quality standards for surface waters. (33 U.S.C. § 1313.) Water quality standards consist of the designated uses of waters and the water quality criteria for such waters that would support the designated uses. The Regional Water Board in its Water Quality Control Plan for the San Diego region has adopted water quality standards by designating the beneficial uses for waters in the region and establishing water quality objectives (i.e., water quality criteria) to protect those uses. See Water Quality Control Plan for the San Diego Basin (9), September 8, 1994, at Chapters 2 and 3. The SWRCB has also adopted water quality control plans and policies that specify water quality standards which are relevant to this permit (e.g., the SWRCB Ocean Plan). To comply with CWA section 301, municipal storm water permits must include effluent limitations where necessary to meet these water quality standards.

NPDES permits issued by the Regional Water Boards, including municipal storm water permits, typically include a requirement entitled "discharge limitations" or "effluent limitations" that specifies the technology-based effluent limitations and a requirement entitled "receiving water limitations" or "receiving water standards" that specifies the water quality objectives in the Water Quality Control Plan relevant to the discharge and limitations necessary to attain those objectives. The receiving water limitations provision is used to implement the requirement of CWA section 301(b)(1)(C) to include more stringent effluent limitations necessary to meet

water quality standards.[5] The limitations necessary to meet water quality standards are also called the water quality-based effluent limitations. NPDES permits are generally required to include numeric effluent limitations to implement the technology-based standard and water quality-based effluent limitations to attain the water quality standards.[6] (40 C.F.R. § 122.44.) However, the federal regulations allow the use of best management practices (BMPs) to control or abate the discharge of pollutants when numeric effluent limitations are infeasible. (40 C.F.R. § 122.44(k).) The SWRCB has determined that for municipal separate storm water permits, BMPs constitute valid effluent limitations to comply with both the technology-based and water quality-based effluent limitation requirements.[7] See SWRCB Orders WQ 91-03 and WQ 91-04. In fact, narrative effluent limitations requiring implementation of BMPs are generally the most appropriate form of effluent limitations when designed to satisfy technology requirements, including reduction of pollutants to the maximum extent practicable, and water quality-based requirements of the CWA.

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[5] SWRCB Order WQ 91-03 concluded that municipal permits must include effluent limitations necessary to achieve water quality standards. See Order WQ 91-03 at slip op. 36. Orange County and other interested persons have argued that section 402(p) does not require municipal permits to meet water quality standards. While disagreeing, it should be noted that section 402(p) contains explicit authority for states to require provisions in addition to the "maximum extent practical" controls.

[6] See memorandum "Numeric Effluent Limitations in NPDES Permits" from Elizabeth Miller Jennings, Senior Staff Counsel, State Water Resources Control Board, to Central Valley Regional Water Quality Control Board (Aug. 1, 1997).

[7] EPA has issued a national policy entitled "Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits," 61 Fed. Reg. 43761 (Aug. 26, 1996), that addresses issues related to the type of effluent limitations that are appropriate to provide for attainment of water quality standards. The policy applies only to EPA, but EPA has encouraged states to adopt similar policies for storm water permits. The policy states that storm water permits need not include numeric water quality-based effluent limitations. Rather, BMPs should be used to attain water quality-based effluent limitations, which should be expanded in later permits if necessary to provide for attainment of water quality standards.

II. CONTENTIONS AND FINDINGS[8]

The petitioner seeks review of the Orange County permit adopted by the Regional Water Board. The Orange County NPDES permit, adopted by the Regional Water Board, applies to the incorporated cities in Orange County within the boundaries of the San Diego region. The Santa Ana Regional Water Board, on March 8, 1996, adopted an NPDES permit for storm water discharges from the incorporated cities of Orange County within the boundaries of the Santa Ana region.[9] Orange County had requested that the Santa Ana Regional Water Board adopt one permit for all of Orange County. The San Diego Regional Water Board preferred to retain jurisdiction but agreed to adopt a permit consistent with the permit adopted by the Santa Ana Regional Water Board. Both permits for Orange County are essentially identical and require the permittees to develop a plan establishing BMPs to control discharges to the "maximum extent practicable." The Orange County permittees adopted a plan called the "drainage area management plan" (DAMP) that was approved by the San Diego Regional Water Board on April 6, 1996.[10] Both permits also contain the same provision addressing receiving water limitations, which, in relevant part, states:

> "1. Receiving water limitations have been established based on beneficial uses, water quality objectives, and water quality standards contained in the Basin Plan, and amendments thereto, and on ambient water quality. They are intended to protect the beneficial uses and attain the water quality objectives contained in the Basin Plan. The discharge of urban storm water, or non-storm water, from a municipal storm sewer system

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[8] All other contentions raised in the petition which are not discussed in this order are dismissed. (Cal. Code Regs., tit. 23, § 2052; *People* v. *Barry* (1987) 194 Cal.App.3d 158 [239 Cal.Rptr. 349].)

[9] No petition was filed challenging the permit issued by the Santa Ana Regional Water Board.

[10] The DAMP was also approved by the Santa Ana Regional Water Board.

for which the permittees are responsible under the terms of this permit shall not cause continuing or recurring impairment of beneficial uses or exceedances of water quality objectives. The permittees will not be in violation of this provision so long as they are in compliance with the requirements set forth [in the following provision]."

"a. If the Executive Officer determines that a continuing or recurring impairment of beneficial uses or exceedances of water quality objectives has been caused by urban storm water discharges from the municipal storm sewer system, the following steps shall be taken. . . ."

The remainder of the provision requires the Executive Officer to evaluate the DAMP and if the Executive Officer determines that implementation of the DAMP will not have a reasonable likelihood of preventing future impairment of beneficial uses or exceedances of water quality objectives, the permittees would be required to submit a report evaluating impacts on water quality and proposing changes to implementation of the existing DAMP or proposing revisions to the DAMP. The permittees would then be required to implement the revised DAMP.

Petitioner contends that for several reasons, this receiving water limitations provision is inadequate under the CWA and its implementing regulations and under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). Petitioner points out that CWA section 402(b), and implementing regulations, require that NPDES permits issued by state agencies comply with the CWA. (33 U.S.C. 1342(b), 40 C.F.R. § 123.25.) The Porter-Cologne Act provides that permits issued subject to federal law must "ensure compliance with all applicable provisions of the [CWA and its implementing regulations], together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of

beneficial uses, or to prevent nuisance." (Cal. Water Code § 13377.) Petitioner contends that the receiving water limitations language fails to require attainment of water quality standards.

1. Contention: The receiving water limitations section fails to comply with the CWA and the Porter-Cologne Act because it does not prohibit discharges that "contribute to" as well as "cause" exceedances of water quality objectives as required by federal regulations.

Finding: The SWRCB agrees that the NPDES permit must prohibit discharges that "cause" or "contribute" to violations of water quality standards. Federal regulations specify requirements that must be included in each NPDES permit. (40 C.F.R. § 122.44.) Each NPDES permit must include limitations necessary to achieve water quality standards:

> "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." (40 C.F.R. § 122.44(d)(1)(i).)[11] (Emphasis added.)

The receiving water limitations language of the Orange County NPDES permit requires the permittees to be responsible for those discharges that "cause continuing or recurring impairment of beneficial uses or exceedances of water quality objectives." To comply with the CWA, the phrase quoted in the immediately preceding sentence shall be interpreted so as to require permittees to control discharges that contribute to exceedances

[11] This provision applies to state programs. See 40 C.F.R. section 123.25.

of water quality objectives. Of course such contributions would have to be substantial (in more than a *de minimis* amount) contributions.

2. Contention: The petitioner contends that the receiving water limitations section in the permit violates the CWA and implementing regulations because it does not require compliance with water quality standards. The permit states that the permittees "will not be in violation of [receiving water limitations] so long as they are in compliance with the requirements" for evaluating the DAMP.

Finding: The SWRCB disagrees with petitioner's contention. In SWRCB Order WQ 96-13, the SWRCB reviewed and approved the storm water permit for certain permittees in the Santa Clara Valley issued by the San Francisco Bay Regional Water Board. The Santa Clara Valley permit contains a receiving water limitations section that specifically prohibits discharges that cause or contribute to a violation of water quality objectives, and states that the permittees "shall comply . . . through the timely implementation of control measures and other actions to reduce pollution in the discharge." (Emphasis added.) The receiving water limitations provision in the Orange County permit prohibits discharges that cause exceedances of water quality objectives, and states that the "permittees will not be in violation of this provision so long as they are in compliance with the requirements" for evaluating and improving the effectiveness of the DAMP. The Orange County permit receiving water limitations section is not, as a practical matter, different than the Santa Clara Valley permit approved by this SWRCB. In each case, compliance with the receiving water limitations is achieved by following a

procedure to evaluate and improve the BMPs where necessary to comply with water quality standards.

The SWRCB has already determined that the use of BMPs to achieve both the technology-based effluent limitations and the water quality-based effluent limitations complies with the CWA and the Porter-Cologne Act. See SWRCB Order WQ 91-03. Accordingly, the SWRCB agrees that use of the phrase that the "permittees will not be in violation of . . ." complies with the CWA and, in fact, used that same phrase in SWRCB Water Quality Order 97-03-DWQ (Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities, NPDES General Permit No. CAS000001) (the General Industrial Permit).

3. Contention: The petitioner contends that the receiving water limitations provision violates the CWA and implementing regulations because the mechanism for determining exceedances of receiving water limitations is unworkable and, therefore, would not result in achievement of water quality standards. The permittees are not considered to be in violation of receiving water limitations as long as the process for evaluating the DAMP are followed. This process, however, will not result in achievement of water quality standards because (1) it is very difficult to demonstrate that urban runoff has "caused" an exceedance of water quality objectives; (2) Regional Water Board staff stated at the Board hearing at which the permit was adopted that there were inadequate resources to oversee the storm water program; (3) the permit does not require submittal of information on the adequacy of the DAMP until after the Executive Officer determines that the plan will not result in achievement of water quality objectives;

and (4) the permit places no time schedule on review of the adequacy of the plan to meet water quality standards. The permit does not require any change to the DAMP until directed by the Executive Officer. Due to these limitations, water quality standards are not likely to be achieved.

Finding: Petitioner has raised legitimate concerns. As discussed above, permittees will be required to control discharges that contribute to exceedances of water quality objectives. The SWRCB's charge under Water Code section 13320 is to determine whether the Regional Water Board has acted appropriately. In this case, the Regional Water Board has directed its Executive Officer to determine when receiving water limitations have been exceeded. In order for such determinations to be made the Executive Officer must devote sufficient resources to make such determinations in a timely manner. Provided this is the case, it can be concluded that the permit is adequate to achieve water quality standards. This conclusion to uphold the permit language is further predicated on the fact that to do otherwise would result in two inconsistent storm water permits for Orange County.

III. ADDITIONAL ISSUES

While upholding the permit as appropriate, the SWRCB has concerns that future storm water permits contain the strongest and clearest possible language to protect water quality. As evidenced by the discussion at the January 7, 1998 workshop review of this petition, there are serious disagreements as to how best to ensure such protection. A review of the record leads to the following conclusions:

- Future storm water permits should contain consistent requirements to ensure water quality protection.
- Such permits must comply with CWA and Porter-Cologne Water Quality Control Act requirements.
- Storm water permits must achieve compliance with water quality standards, but they may do so by requiring implementation of BMPs in lieu of numeric water quality-based effluent limitations.
- Permittees must ultimately be responsible for evaluating and revising BMPs to achieve compliance with water quality standards.
- Permits should be written to clearly identify water quality standards and to clearly require that permittees, through the implementation of BMPs, shall not cause or contribute to exceedances of such water quality standards.
- Given the unique nature of the storm water discharges, it is reasonable that implementation take place, where appropriate, on a phased basis.
- Determinations that additional BMPs are necessary to achieve water quality standards should be based on findings by the permittees or the Regional Boards that storm water discharges are a substantial (in more than a *de minimis* amount) contributor to continuing or recurring exceedances of such standards.

Based upon these conclusions and as a precedent decision,[12] the following receiving water limitation language shall be included in future municipal storm water permits.

RECEIVING WATER LIMITATIONS

1. Storm water discharges and authorized non-storm water discharges to any surface or ground water shall not adversely impact human health or the environment.

2. The SWMP shall be designed and implemented, or shall be in the process of being revised in accordance with the procedures set forth below to ensure that discharges authorized by this permit shall not cause or substantially (in more than a *de minimis* amount) contribute to a continuing or recurring exceedance of any applicable water quality standards contained in a Statewide Water Quality Control Plan or the applicable Regional Water Quality Control Board's Basin Plan.

3. If the discharges cause or contribute to an exceedance of the applicable water quality standards, permittee shall take the following steps:

   a. Upon a determination by either the facility operator or the Regional Water Board that discharges are causing or contributing to an exceedance of an applicable water quality standard, the facility operator shall promptly notify and thereafter submit a report to the appropriate Regional Water Quality Control Board that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of water quality standards. The report may be incorporated in the annual update to the SWMP unless the Regional Water Board directs an earlier submittal. The report shall include an implementation schedule. The Regional Water Quality Control Board may require modifications to the report.

   b. Submit any modifications to the report required by the Regional Board within 30 days of notification.

[12] In SWRCB Order WR 96-1, the SWRCB determined that water quality orders are precedent decisions. (See Gov. Code § 11425.60.)

c. Within 30 days following approval of the report described above by the Regional Water Quality Control Board, the facility operator shall revise its SWMP and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring required;

d. Implement the revised SWMP and monitoring program in accordance with the approved schedule; and

e. Reduce pollutants in storm water discharges and authorized non-storm water discharges, following implementation of the SWMP revised in accordance with paragraph 3 above, to levels which shall not cause or contribute to an exceedance of any applicable water quality standards.

4. So long as permittees have complied with the procedures set forth in paragraph 3 above and are implementing the revised SWMP, they do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Regional Water Board to develope additional BMPs.

IV. CONCLUSIONS

After review of the record and consideration of the contentions of the petitioner, and for the reasons discussed above, we conclude:

1. The federal regulations implementing CWA section 402(p) require NPDES permits to prohibit discharges of pollutants that "cause or contribute" to exceedances of water quality standards and the permit will be so interpreted.

2. The specific portion of the receiving water limitations provision that states that "permittees will not be in violation of this provision so long as they are in compliance with the requirements" specifying the process for evaluating and improving the effectiveness of the DAMP complies with the CWA.

3. The Regional Water Board acted appropriately in adopting the permit.

4. Receiving water limitation provisions of future municipal storm water permits shall be consistent with this Order.

V. ORDER

IT IS ORDERED that Order 96-03 shall be interpreted as discussed above.

It is further ordered that in other respects, the petition is denied.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on January 22, 1998.

AYE:	John Caffrey Marc Del Piero Mary Jane Forster John W. Brown
NO:	None
ABSENT:	James M. Stubchaer
ABSTAIN:	None

Maureen Marché
Administrative Assistant to the Board

DAVID DREIER
CALIFORNIA

CHAIRMAN
COMMITTEE ON
RULES

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Congress of the United States
House of Representatives
Washington, DC 20515

April 24, 2001

The Honorable Christine Todd Whitman
Administrator
United States Environmental Protection Agency
1101A
1200 Pennsylvania Avenue, Northwest
Washington, D.C. 20460

Dear Governor Whitman:

I have been contacted regarding a proposal for cities in Los Angeles County to assume responsibility for storm water compliance inspections for state-permitted industrial and commercial facilities. This proposal was outlined in a letter from Ms. Alexis Strauss, Director of the Water Division for Region 9, to Dennis Dickerson, Executive Office of the California Water Quality Control Board.

In discussions for the renewal of the regional National Pollutant Discharge Elimination System (NPDES) permit, the EPA has recommended that the state require the cities to implement an effective enforcement program. The letter states that the "storm water regulations envision a cooperative effort on the part of the NPDES permitting authority and permitted MS4s in the implementation of the industrial storm water program."

Several cities have expressed serious concerns with this proposal. They argue that the program requires states to permit and monitor these industrial facilities, and that shifting inspection and enforcement to the cities undermines the cooperative approach that EPA has advocated. Further, they contend that the purpose of their educational visits to industrial and commercial facilities has been inaccurately described. The letter states the educational visits were intended to "provide time for the permittees to gain experience in controlling pollutants in storm water discharges from these facilities." The cities believe that this was never the intent.

The cities request that the EPA revisit the issues addressed in the letter. They urge the Agency to clarify that it does not support or encourage the transfer of inspection responsibility to the cities. They seek your assistance in ensuring that the EPA works to bring stakeholders together to resolve conflicts, rather than force them to assume costly and complicated new duties.

The Los Angeles Regional Water Quality Control Board is currently negotiating the renewed MS4 permit. In view of the short timetable, I request a timely response to these important issues.

Sincerely,

David Dreier

DD:bmf
Encl.

Meeting on April 24, 2001

Tim Piasky, Director of Environmental Affairs, Building Industry Association of So. Cal (BIA)
Laura Gentile, USEPA, Region 9
Xavier Swamikannu, LA Regional Board
Carlos Urrunaga, LA Regional Board

On this day we met at the Regional Board (after the public workshop at the Los Angeles Central Library) in the afternoon. We discussed several issues brought up by Mr. Piasky of the BIA in regard to the draft LA County Municipal Storm Water Permit. We discussed the Receiving Water Limitations language and the SUSMP requirements and how they work.

After the discussions regarding the draft LA County Municipal Storm Water Permit, Mr. Piasky and I discussed non-compliance of the general storm water permit by the construction industry. We had a worthwhile conversation and agreed that more outreach was necessary to the construction industry. Mr. Piasky brought to our attention his creation of a program involving the "certification" of individuals for compliance purposes of the State of California general permit. Mr. Piasky asked us about initial funding for the program and we replied that our penalty assessments could potentially be used for that but he should contact Wendy Phillips for more information.

California Regional Water Quality Control Board
Los Angeles Region

Winston H. Hickox
Secretary for Environmental Protection

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640
Internet Address: http://www.swrcb.ca.gov/~rwqcb4

Gray Davis
Governor

April 26, 2001

Mr. Patrick H. West
City Manager
City of Paramount
16400 Colorado Avenue
Paramount, California 90723-5012

Dear Mr. Farfsing:

Comments pertaining to Regional Board Workshop on April 24, 2001

Thank you for your letter, dated April 20, 2001, in which you expressed your concern regarding the procedure for renewing the municipal storm water permit for the County of Los Angeles and the tentative agenda for our workshop on April 24, 2001.

Staff at the Regional Board are committed to making all reasonable efforts to facilitate public review and comment on the proposed permit, which our Board will consider for adoption on July 26, 2001. As we discussed at our workshop on Tueday, we have prepared a renewal schedule that allows permittees and interested parties one month to review both a first and second draft of the permit. The workshop on April 24, 2001 was not your only opportunity to submit comments. Written comments on the first draft (issued April 13, 2001) will be due on May 16th. And, as stated above, we plan to provide another month for public review of a second draft. Please note that the purpose of the April 24th workshop was two-fold: (1) to explain proposed changes to the permit, in order to facilitate review and public comment; and (2) to receive preliminary comments on the draft and, as appropriate, exchange information.

Again, thank you for your interest in renewing the municipal permit. Should you have questions, please do not hesitate to contact Xavier Swamikannu at (213) 576-6654.

Sincerely,

Wendy Phillips
Chief, Storm Water Section

R0001986

From: Megan Fisher
To: bdepoto@dpw.co.la.ca.us; ctrevizo@dpw.co.la.ca.us; ghowe@dpw.co.la.ca.us; Guangyu Wang; jdorsey@san.lacity.org; mariki@dpw.co.la.ca.us; Melinda Becker; mgold@healthebay.org; Michael Lyons; Renee DeShazo; sluce@healthebay.org; tjkim@dpw.co.la.ca.us; Tracy Patterson
Date: 4/26/01 11:58AM
Subject: LA MS4 monitoring agenda

Attached is the draft agenda for tomorrow morning's monitoring meeting (8am in LA River Conference Room).

See you there,

Megan Fisher
Environmental Specialist
Storm Water Section
Los Angeles Reginal Water Quality Control Board
(213) 576-6790

CC: Dan Radulescu; Wendy Phillips; Xavier Swamikannu

LA County MS4 Monitoring Program
Draft Agenda
Friday, April 27, 2001 from 8 - 11am
Los Angeles River Conference Room

1. **Clarifications/rationale for draft requirements:**

Tributary monitoring

- Questions/Concerns about draft language (County)
- Answers and clarification (RB, HtB)
- Source ID
- Discuss possible changes to draft language (everyone)

Bioassessment monitoring

- Questions/Concerns about draft language (County)
- Answers and clarification (RB, HtB)
- Assess biological and physical impacts of storm water to receiving waters
- Determine status of aquatic resources
- Data compatible with statewide efforts
- Standard requirement in NPDES permits
- Similar requirements in Ventura and San Diego MS4 permits
- Cost
- Discuss possible changes to draft language (everyone)

CTR ML methods

- Questions/Concerns (County)
- Rationale for requirement (RB)
- Ensure that monitoring can detect toxic pollutant levels

TSS and SSC monitoring

- Discuss removing from permit and recommending as special study (everyone)

2. **Other issues**

- Confirm addition of shoreline monitoring requirement as discussed at 4-25 meeting

- Discuss Co-permittees role in contributing to monitoring efforts (everyone)

- Other concerns regarding draft language (County)

From: Megan Fisher
To: Dan Radulescu; Xavier Swamikannu
Date: 4/27/01 11:09AM
Subject: Fwd: Re: SNA map

FYI

Dan, this email should go in the admin record. I'll give you a copy of the document that goes with it.

From: "Diana Hickson" <dhickson@dfg.ca.gov>
To: <Mfisher@rb4.swrcb.ca.gov>
Date: 4/27/01 9:18AM
Subject: Re: SNA map

Hi Megan,

Our standard disclaimer text is below. Lisa Kenner will email you the new SNA shapefile for LA County today. If you have any questions when you get it, let me know. As I told you on the phone, we don't have the reports for this new map yet.

You can download county maps of Significant Natural Areas from our web site:
ftp://maphost.dfg.ca.gov/outgoing/whdab/sna/
Maps are jpeg files in the map images directory ("*.jpeg"). (note Megan: these are the "old" maps)
The accompanying reports ("*.pdf") are in the reports directory.
The zipped ArcView shapefile is in the /sna directory;
let me know if you need the metadata.

If you haven't already done so, please take a look at the information about the SNA program at:
http://www.dfg.ca.gov/whdab/html/moresna.html

Please note that we are in the process of updating the criteria for determining SNAs. The old criteria (reflected in the maps on the ftp site) rely solely upon occurrences of rare species and habitats as reported to the California Natural Diversity Data Base, and do not consider other habitat values such as deer winter range, etc.

Also, we haven't updated SNAs based on the old criteria since early 1999 due to staffing problems. We hope to have new maps based on the old, but slightly modified, criteria and on updated CNDDB data in another month or two.

We are currently working with our regions to identify potential criteria for SNAs based on DFG's priorities, and hope to have draft criteria in six months. The Significant Natural Areas legislation states that DFG must consult with outside organizations before determining SNAs, and so when the draft criteria are done we will seek comments. However, we would appreciate any comments or suggestions you might have in the meantime. Also, if you have time, perhaps you can tell me how you are using the SNA data.

One more thing: the identification of SNAs is strictly for educational purposes and does not imply any additional authority by the Department over these areas. The Fish and Game Code clearly states that this identification will not, of itself, change or prevent the change in the use of any area so identified.

If you have any questions, or have problems downloading
the map or report, please let me know.

>>> "Megan Fisher" <Mfisher@rb4.swrcb.ca.gov> 04/26/01 03:34PM >>>
Hello Diana,

I spoke to you this morning regarding a map of LA County with Significant Natural Areas and a reference for their geographical boundaries. I just wanted to make a connection to ensure that you had my correct email address.

Thank you!!

Megan Fisher
Environmental Specialist
Storm Water Section
Los Angeles Regional Water Quality Control Board
(213) 576-6790

From: Megan Fisher
To: bdepoto@dpw.co.la.ca.us; ctrevizo@dpw.co.la.ca.us; ghowe@dpw.co.la.ca.us; Guangyu Wang; jdorsey@san.lacity.org; Kens@sccwrp.org; mariki@dpw.co.la.ca.us; Melinda Becker; mgold@healthebay.org; Michael Lyons; mmullin@san.lacity.org; Renee DeShazo; sluce@healthebay.org; steveb@sccwrp.org; stevew@sccwrp.org; tjkim@dpw.co.la.ca.us; Tom_Leary@ci.long-beach.ca.us; Tracy Patterson; Xavier Swamikannu
Date: 4/30/01 11:01AM
Subject: LA MS4 Monitoring Meeting

A meeting has been scheduled to disuss some technical details of the proposed monitoring program for the LA County MS4 permit. The main purpose of the meeting is to determine locations and numbers of stations for source ID and bioassessment monitoring. I will collect any useful maps that I can find in this office, but if you have any resources that might be helpful, please bring them.

The meeting will be:

Wednesday, May 9 at 1:30pm in the Library (at this office)

If you do not already have it, the first draft of the permit and monitoring program can be found at www.swrcb.ca.gov/rwqcb4/html/programs/Stormwater/renewal.html

Thank you,

Megan Fisher
Environmental Specialist
Storm Water Section
Los Angeles Regional Water Quality Control Board
(213) 576-6790

CC: Dan Radulescu; Wendy Phillips

UNITED STATES ENVIRONMENTAL PRO
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-

cc: DD, DS
WP, XS
JL, RS
AS RM

01 MAY 17
P 2:37

April 30, 2001

The Honorable Stephen Horn
U.S. House of Representatives
2331 Rayburn House Office Building
Washington, DC 20515

Dear Congressman Horn:

Thank you for your letter of April 12, 2001, to Christine Todd Whitman, Administrator, U.S. Environmental Protection Agency (EPA), and the accompanying correspondence from your constituent, Larry Forester, representing the Steering Committee for the Coalition for Practical Regulation. I have been asked to respond to your constituent's concerns regarding EPA, Region 9's letter of December 19, 2000 to the Los Angeles Regional Board concerning requirements for inspections of industrial and commercial facilities by municipal separate storm sewer system (MS4) permittees.

As you may be aware, urban runoff is the leading cause of water quality impairment in Santa Monica Bay and the Los Angeles area. This problem, and the State's inability to apply adequate resources to its storm water program, were key factors cited in a petition filed by the Natural Resources Defense Council (NRDC) to withdraw the NPDES storm water program administered by the Los Angeles Regional Board. Current storm water fees received by the State do not provide enough funds to meet all storm water program needs. The State currently collects about $3 million in fees annually from storm water dischargers, and these fees are used entirely to fund storm water program activities, including inspections, enforcement, permitting and other activities. However, the storm water fees cover only about 30% of the cost of the current program, with the rest of the funding coming from other sources. As such, the fees are not adequate to fully fund the State's program and its various activities including inspections.

In response to the NRDC petition, the October 5, 2000 meeting referenced in your constituent's letter was our first meeting with the State to discuss what steps the State could take to respond to the concerns in the petition. The State had already begun to substantially increase its staffing resources devoted to the storm water program and we are continuing to discuss ways to further increase the State's investment through grant money from EPA. Also discussed were the NPDES regulatory requirements for MS4 permits, specifically the existing Federal regulatory requirement that MS4 permittees implement inspection and pollution control programs for certain industrial and commercial facilities. Such programs are already required in many MS4 permits, such as the permits for Orange, Riverside and San Diego Counties, and they play a significant role in ensuring the overall effectiveness of the storm water program through the combined efforts of the State and MS4 permittees.

The storm water program is intentionally a flexible program that allows for different approaches to best address unique local challenges such as those presented by arid environments. The scope of an MS4 inspection program is normally negotiated with the State when a permit is reissued. We agree that a cooperative effort between the State and MS4 permittees on inspections is needed, and we believe that neither the MS4 permittees nor the State should be saddled with the entire inspection burden for industrial and commercial facilities. The State is also responsible for enforcing its general NPDES storm water permits, while the MS4 permittees need to enforce local storm water ordinances (often similar to the State general permits).

EPA has been intensively involved with all nine California Regional Boards and the State Water Resources Control Board to effectively implement the storm water program. From the initial issuance of the MS4 permits to the current round of reissuing those permits, we have been working closely with the State to encourage stakeholder participation and cooperation in the MS4 storm water programs. EPA staff have been participating in the monthly meetings between the State and the MS4 permittees to discuss the pending reissuance of the Los Angeles County MS4 permit, and we are committed to maintaining a cooperative and constructive dialogue among the stakeholders. As mentioned above, the October 5, 2000 meeting was an initial meeting with the State on how to resolve the NRDC petition, and the existing monthly meetings with the Los Angeles County MS4 permittees have been a key forum for cities to provide input on the permit and engage in an ongoing dialogue with the State and EPA. We welcome and encourage active participation by all permittees in these monthly meetings.

We trust this information will be helpful in responding to your constituent's concerns. If we can be of further assistance, please call our Congressional Liaison Officer, Sunny Nelson at (415) 744-1562.

Sincerely,

Alexis Strauss
Director
Water Division

cc: Dennis Dickerson, Los Angeles Regional Board

City of MONROVIA

1887

All-America City

Department of Public Works

April 18, 2001

Mr. Dennis A. Dickerson
Executive Director
Regional Water Quality Control Board – Los Angeles
320 W. 4th Street, Suite 400
Los Angeles, CA 90013

2001 MAY -1 P 2:46

Re: NPDES Permit/Workshop - Concerns

Dear Mr. Dickerson:

On April 16, 2001, the City of Monrovia received its copy of the First Draft – Los Angeles County Municipal Storm Water NPDES permit, the tentative workshop agenda and first draft staff report. I am writing to express my concerns regarding the limited about of time the permitees will have to review the permit and accompanying staff report prior to the April 24th workshop. As I understand the time schedule that the Regional Board is presented with to issue the next NPDES permit for Los Angeles County, an apparent less than two week time period to review the report and permit is somewhat concerning.

Like many of other cities within the Los Angeles River, we want to work with you and your staff to make the public comment period at the upcoming workshop as productive as possible, and for you to fully hear and understand our concerns. Given the length of the 86 page draft permit including its new proposed requirements, and 40 page staff report, is this an adequate amount of time to ensure a complete and effective dialogue at the upcoming April 24th workshop?

Secondly, as I review the agenda, it appears that there is very limited time for public comment after your staff has made their presentations. It is my hope that this can be remedied. The City of Monrovia shares many of the major concerns with the new permit, as referenced in the Coalition for Practical Regulation's April 13th correspondence, and is concerned if these issues will be able to be addressed in such a short period of time.

R0001995

415 South Ivy Avenue • Monrovia, California 91016-2888 • (626) 932-5575 • FAX (626) 932-5559

The City of Monrovia very much appreciates the opportunity to comment at the upcoming workshop, and sincerely wants to work with you to make the comment period productive. We look forward to hearing from you with respect to these issues. If you have any questions, please contact me at (626) 932-5544.

Thank you for your attention to this matter.

Sincerely,

David Fike

David Fike
Director of Public Works

cc: City Manger
Coalition for Practical Regulation
Management Analyst II

From: "Wolfe, Don" <DWOLFE@dpw.co.la.ca.us>
To: "'jbishop@rb4.swrcb.ca.gov'" <jbishop@rb4.swrcb.ca.gov>
Date: 5/2/01 1:30PM
Subject: Trash Monitoring

G. Trash Monitoring

The Principal Permittee, working with the Regional Board staff, shall develop and implement a trash monitoring program for the Los Angeles River and Ballona Creek watersheds.

CC: "Grant, Terri" <TGRANT@dpw.co.la.ca.us>, "Kubomoto, Rod" <RKUBOMO@dpw.co.la.ca.us>, "Ariki, Mustafa" <MARIKI@dpw.co.la.ca.us>

From: Megan Fisher
To: bdepoto@dpw.co.la.ca.us; ctrevizo@dpw.co.la.ca.us; ghowe@dpw.co.la.ca.us; Guangyu Wang; jdorsey@san.lacity.org; Kens@sccwrp.org; LB Nye; mariki@dpw.co.la.ca.us; Melinda Becker; mgold@healthebay.org; Michael Lyons; mmullin@san.lacity.org; Renee DeShazo; sluce@healthebay.org; steveb@sccwrp.org; stevew@sccwrp.org; tjkim@dpw.co.la.ca.us; Tracy Patterson; Xavier Swamikannu
Date: 5/8/01 11:54AM
Subject: LA MS4 Monitoring Meeting

Topics of discussion for tomorrow's MS4 Monitoring Meeting are attached. The meeting starts at 1:30, here in the Library. Please bring any maps or other documents that may be useful.

Thanks!
Megan Fisher
Environmental Specialist
Storm Water Section
Los Angeles Regional Water Quality Control Board
(213) 576-6790

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
***For a list of simple ways to reduce demand and cut your energy costs, see the tips at: http://www.swrcb.ca.gov/news/echallenge.html ***

CC: Dan Radulescu

LA MS4 MONITORING MEETING TOPICS
May 9, 1:30-3:30

Follow-up from April 27 meeting

- Removed requirement to analyze Suspended Sediment Concentration and particle size distribution
- Changed minimum level reference from CTR to SIP
- Added Permittee implementation of identified BMPs for TREs
- Added shoreline monitoring requirement from Hyperion permit
- Removed bacteria monitoring requirement

1. **Tributary Monitoring**
   - Identify tributary monitoring stations based on priorities in each watershed:
   - Ballona Creek
   - Malibu Creek
   - Los Angeles River
   - San Gabriel River
   - Dominguez Channel
   - Determine scientific justification for number of stations, and a staggered or rotating schedule, if necessary

2. **Bioassessment**
   - Identify number of stations, locations and frequency
   - Determine staggered or rotating schedule, if necessary
   - Examine possibility of using the same locations as trib stations

3. **Receiving Waters Studies**
   - Discuss changing sediment toxicity and benthic community back to regular monitoring. Discuss possible language- determine locations and frequency.
   - Continue to require participation in Bightwide03 Regional Monitoring.

4. **Natural Stream Study (3:00)**
   Discuss Ventura's study and the possibility of extending it to an LA County watershed (Matt Yeager)

5. **Other issues**
   - Minimum Levels

6. Schedule next meeting (coordinate with SCCWRP)

LA MS4 MONITORING MEETING TOPICS
May 9, 1:30-3:30

1. **Tributary Monitoring**
   - Identify tributary monitoring stations based on priorities in each watershed:
     - Ballona Creek
     - Malibu Creek
     - Los Angeles River
     - San Gabriel River
     - Dominguez Channel
   - Determine scientific justification for number of stations, and a staggered or rotating schedule, if necessary

2. **Bioassessment**
   - Identify number of stations, locations and frequency
   - Determine staggered or rotating schedule, if necessary
   - Examine possibility of using the same locations as trib stations

3. **Natural Stream Study (3:00)**
   Discuss Ventura's study and the possibility of extending it to an LA County watershed (Matt Yeager)

4. Schedule next meeting (coordinate with SCCWRP 714-372-9203)

LA COUNTY MS4 MONITORING PROGRAM MEETING 5-09-01

NAME	ORGANIZATION	PHONE	EMAIL
Steve Rowe	LACDPW		
Mike Mullin	City LA stormwater		
Xavier Swamikannu	RWQCB - LA	213-576-6654	XSwami@rb4.swrcb.ca.gov
BILL DEPOTO	LACDPW	626-458-4313	BDEPOTO@DPW.CO.LA.CA.US
John Dorsey	City LA / stormwater	(213) 847-6347	jdorsey@san.lacity.org
Megan Fisher			
Tracy Patterson	RWQCB - LA	213-576-66661	tpatters@rb4.swrcb.ca.gov
Melinda Becker	"	213-576-6681	mbecker@rb4.swrcb.ca.gov
Shelley Luce	Heal the Bay	310 453 0395	Sluce@healthebay.org
Dan So	LACDPW		
BING HUA	LACDPW	626-458-4364	
TJ KIM	LACDPW	626-458-4324	tjkim@dpw.co.la.ca.us

R0002001

5-9-01 Monitoring Plan?

trib obj - verify model + source ID

if only measure tribs miss many other points of inputs - characterize portions of watershed
City of LA - 2nd month - no obvious areas for bacteria or metals

How many samples per storm - 10 grabs
EPA - 3 samples + composite - over first 3 hours of storm

do cumulative loading to show where 85% of loading comes from

identify tribs that contribute

graph pounds per acre + cumulative
- total rainfall over 4 years

aerial photos

15 twice/year in Malibu 250,000

no soft bottom in Ballona

LA River - Glendale Basin

San Gabriel

twice annually for first 3 years or

field recon of soft bottom

have Dick + Hame come down + choose

Ventura

continuous hydrologic model - for flow info - linked to field study - morphology, habitat + bioassess

what year storm causes erosion?

Santa Clara or Malibu

state located in LA Basin

develop numeric criteria to ensure bank protection

HB - characterize stream morphology in Malibu

County will make proposal

talk to Matt about language

1:30 30th 30 + 31

10am May 22 not 1-2:3 10-12 9:30

30th June 5

put in sed + benthic

29 morning

tribe - focus on metals
one watershed per year & chlorpyriphos

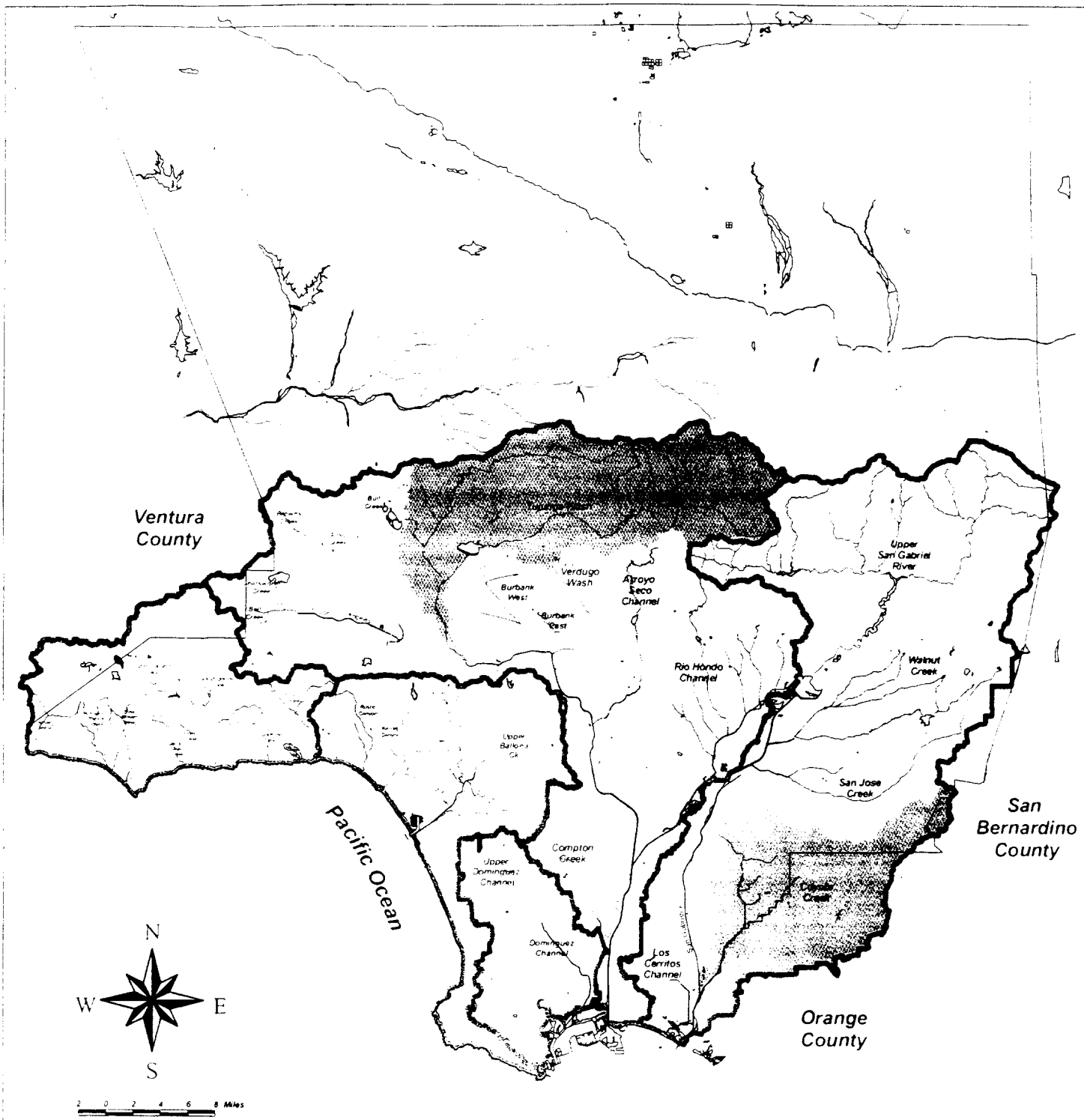
Ballona - metals - Stenthrond sport triangle
LA + San Gabriel

chlorpyrifos - being phased out

dry weather for nutrients?

Mike Mullin

R0002003



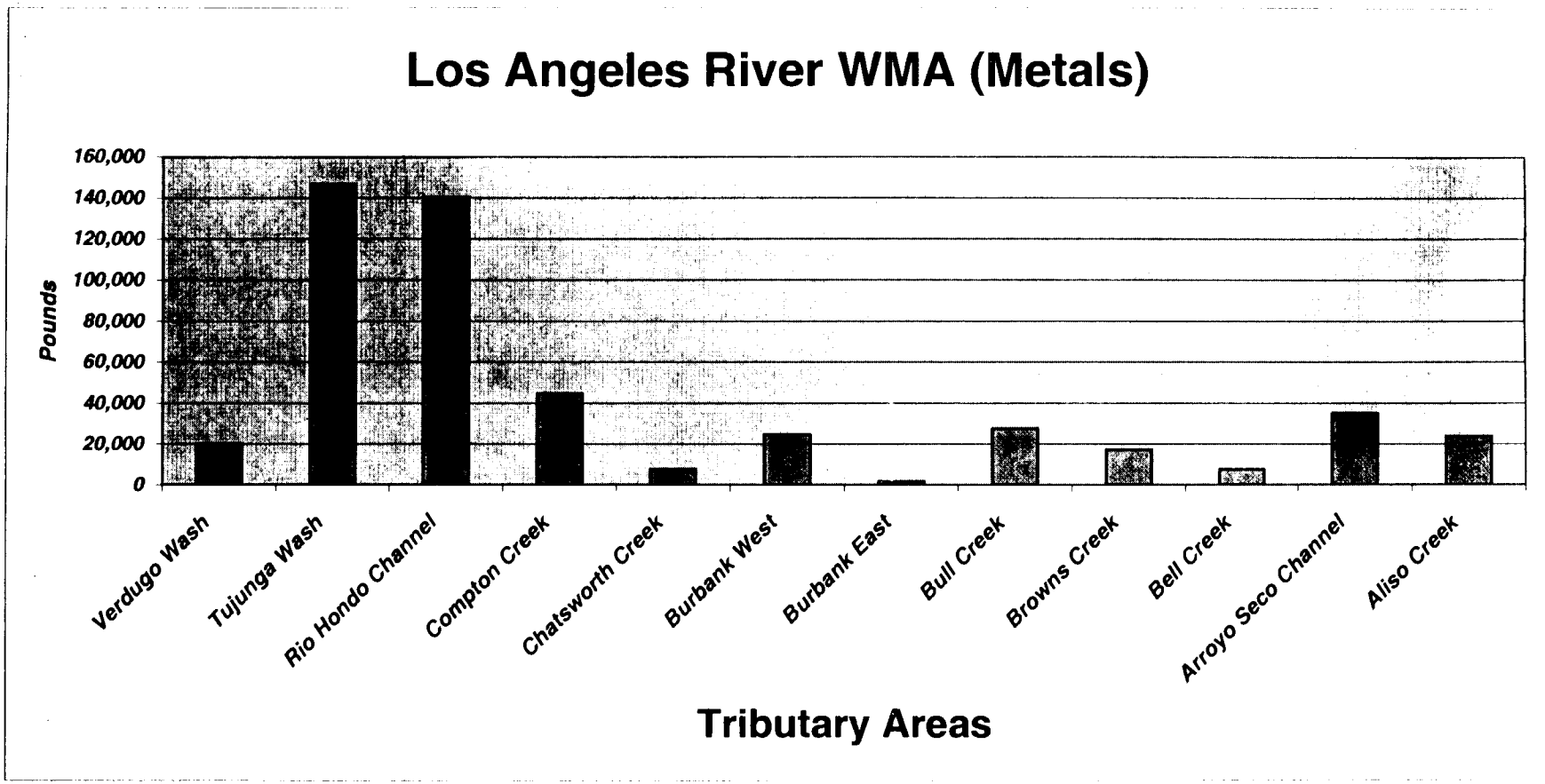
Major Sub-Watersheds

in Los Angeles County

P:\EPPUB\WATERGIS\PROJECTS\DEPOTOVPROP13.APR

May 2, 2001

R0002004


Los Angeles River WMA (Metals)
Pounds
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
Verdugo Wash
Tujunga Wash
Rio Hondo Channel
Compton Creek
Chatsworth Creek
Burbank West
Burbank East
Bull Creek
Browns Creek
Bell Creek
Arroyo Seco Channel
Aliso Creek
Tributary Areas

County Proposal for Monitoring Program

1. **Mass Emissions**

- Estimated cost: **$889,000** (It is assumed that the SIP level DLs are used).

2. **BMP Effectiveness Study**

- We plan to test the effectiveness of 5 structural BMPs for 5 storm events. Two samples need to be taken at upstream and downstream of each BMP.
- We participate in BMP task force.
- Maximum contributory amount: $387,000 (Our own BMP tests + Fund for BMP task force)

3. **Toxicity Monitoring**

- Estimated cost of Water Column Toxicity Monitoring: **$60,000**.
- Estimated cost of Toxicity Identification Evaluations (TIEs): **$33,000**.
- Maximum contributory amount for Toxicity Reduction Evaluations (TREs) implementation and toxicity monitoring under TREs: **$300,000/year**.

4. **Urban Stream Bioassessment**

- 20 random reach segments + 3 reference stations for the bioassessments.
- Monitor each station twice annually for only the first and last storm seasons during the permit period.
- Maximum contributory amount: **$120,000**.

5. **Receiving Waters Studies**

- As replacements of Receiving Waters Studies, sediment toxicity and benthic monitoring on a regular basis might be added.
- Participate in Bightwide03 Regional Monitoring (Sediment task force?).
- Estimated cost: **???**

6. **Tributary/Source Identification Monitoring**

- Using the Pollutant Loading model, we will locate 8 tributary stations for Nutrients and Metals.
- A staggered monitoring schedule will be developed to monitor 8 tributary areas over 5 years.
- Estimated cost: **$192,000**.

Waterbody	***TMDL***	***Consent Decree Year***
Malibu	Nutrients	2002
Malibu Creek Lakes and Tributaries	Metals	
Ballona Creek	Metals	2004

Los Angeles River	Nutrients	2001
Los Angeles River	Metals	2004
San Gabriel River	Nutrients	2003
San Gabriel River	Metals	2006
Santa Monica Bay Beaches	Metals	2004

7. Natural Stream Study

- We will participate in a study in natural stream channels in Malibu Creek watershed.
- Maximum contributory amount: **$230,000.**

8. Monitoring reports

- Estimated cost: **$100,000.**

9. Total cost of the monitoring program: $3,511,000.

FYI.

-----Original Message-----

From: Kim, TJ

Sent: Monday, May 07, 2001 9:05 AM

To: Megan Fisher (E-mail)

Subject: SB 72 Senate Bill - INTRODUCED.html

Please see the attachment. According to SB72 Section 1 (b).(5).(D), the state board shall develop a uniform storm water monitoring program including minimum detection limits. I am wondering if it means the CTR level detection limits. Do you have any info of the minimum detection limits mentioned in the attachment? I guess no matter what they are, we should go with them because the state board will develop them before January 1, 2003.

<<SB 72 Senate Bill - INTRODUCED.html>>

BILL NUMBER: SB 72 INTRODUCED
BILL TEXT

INTRODUCED BY Senator Kuehl

JANUARY 10, 2001

An act to add Section 13383.5 to the Water Code, relating to water.

LEGISLATIVE COUNSEL'S DIGEST

SB 72, as introduced, Kuehl. Storm water.

Under the Clean Water Act, all permits issued under the national pollutant discharge elimination system (NPDES) permit program are required to include effluent limitations that meet applicable water quality standards. Under existing law, the State Water Resources Control Board and the California regional water quality control boards prescribe waste discharge requirements for the discharge of storm water by municipalities and industries.

This bill would require the state board to develop, before January 1, 2003, a uniform storm water monitoring program for regulated municipalities and industries, as specified, and would require the requirements established under that program to be included in all storm water permits. The bill would require every regulated municipality and industry, before January 1, 2003, to implement a storm water monitoring program, as prescribed. The bill would require regional water quality control boards, commencing in 2004, to summarize the results of the storm water monitoring programs in their regions, as specified.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: no.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 13383.5 is added to the Water Code, to read:

13383.5. (a) As used in this section, "regulated municipalities and industries" means the municipalities and industries required to obtain a storm water permit under Section 402(p) of the Clean Water Act (33 U.S.C. Sec. 1342(p)) and implementing regulations.

(b) Before January 1, 2003, the state board shall develop a uniform storm water monitoring program for regulated municipalities and industries within the state. This program shall include, but is not limited to, all of the following:

(1) Standardized methods for collection of storm water samples.

(2) Standardized methods for analysis of storm water samples.

(3) A requirement that every sample analysis under this program be completed by a state certified laboratory.

(4) A standardized reporting format.

(5) A minimum monitoring program for regulated municipalities and industries that includes, but is not limited to, all of the following:

(A) Standard sampling intervals and frequencies.

(B) Standard sampling and analysis programs to quality assurance

and quality control.

(C) Standard pollutant minimum sampling requirements, including both of the following:

(i) Requiring regulated industries to sample for pH, total suspended solids (TSS), specific conductance, total organic carbon compounds (TOC), or oil and grease, and any toxic pollutants likely to be present in storm water discharges, including constituents potentially present in raw materials, manufacturing processes, waste processes, and the final manufactured product on the site.

(ii) Requiring regulated municipalities to sample for semivolatiles, metals, pesticides, nutrients, PAHs, benzene tuolene ethylene xylene (BTEX), PCBs, pH, TSS, fecal indicators, toxicity, and any other pollutant identified in Section 303(d) of the Clean Water Act (33 U.S.C. 1313(d)).

(D) Minimum detection limits.

(E) Annual reporting requirements for regulated municipalities and industries.

(F) A requirement that regulated municipalities assess impacts on receiving waters, pollutant loads, and best management practices (BMP) efficacy.

(c) For purposes of setting sampling intervals and frequencies for regulated industries under subparagraph (A) of paragraph (5) of subdivision (b), the board shall require water quality sampling at least five times during each rainy season.

(d) The storm water monitoring program developed pursuant to subdivision (b) shall apply to all regulated municipalities and industries and the requirements established under that program shall be included in all storm water permits.

(e) Before January 1, 2003, every regulated municipality and industry shall implement a storm water monitoring program. This program shall include, at a minimum, all of the components of the program developed by the state board pursuant to subdivision (b). Regulated industries may not be monitored by group.

(f) Commencing in 2004, the regional boards shall summarize the results of the storm water monitoring programs in their regions as part of their water quality assessments. Commencing in 2004, the state board shall include a summary of the storm water monitoring results for the state as part of its biennial report pursuant to Section 305(b) of the Clean Water Act (33 U.S.C. Sec. 1315(b)).

____ CORRECTIONS Text -- Pages 2,3,4.

____

LA County MS4 Monitoring Program
Draft Agenda
Friday, April 27, 2001 from 8 - 11am
Los Angeles River Conference Room

1. Clarifications/rationale for draft requirements:

Tributary monitoring
- Questions/Concerns about draft language (County)
- Answers and clarification (RB, HtB)
  - Source ID
- Discuss possible changes to draft language (everyone)

Bioassessment monitoring
- Questions/Concerns about draft language (County)
- Answers and clarification (RB, HtB)
  - Assess biological and physical impacts of storm water to receiving waters
  - Determine status of aquatic resources
  - Data compatible with statewide efforts
  - Standard requirement in NPDES permits
  - Similar requirements in Ventura and San Diego MS4 permits
  - Cost
- Discuss possible changes to draft language (everyone)

CTR ML methods
- Questions/Concerns (County)
- Rationale for requirement (RB)
  - Ensure that monitoring can detect toxic pollutant levels

TSS and SSC monitoring
- Discuss removing from permit and recommending as special study (everyone)

2. Other issues

- Confirm addition of shoreline monitoring requirement as discussed at 4-25 meeting

- Discuss Co-permittees role in contributing to monitoring efforts (everyone)

- Other concerns regarding draft language (County)

County's Proposal for Monitoring Program

1. Mass Emissions

- The CTR level of detection limits don't apply to regulation of stormwater discharge.
- If the purpose of lowering detection limits is to identify toxicity in stormwater runoff, toxicity tests need to be performed first in order to identify constituents of concern. Chemical tests on those constituents at the CTR level will follow to confirm toxicity if necessary.
- Estimated cost: **$573,000** (The CTR level DLs will be used for the first storm and existing DLs for the rest of storms and dry weather samples).

2. BMP Effectiveness Study

- We plan to test the effectiveness of 5 structural BMPs for 5 storm events. Two samples need to be taken at upstream and downstream of each BMP.
- We participate in BMP task force.
- Maximum contributory amount: **$387,000** (Our own BMP tests + Fund for BMP task force)

3. Bacteria

- We already funded the SCCWRP's project

4. Toxicity Monitoring

- Estimated cost of Water Column Toxicity Monitoring: **$60,000**.
- Estimated cost of Toxicity Identification Evaluations (TIEs): **$33,000**.
- Maximum contributory amount for Toxicity Reduction Evaluations (TREs) implementation and toxicity monitoring under TREs: **$300,000**.

5. Urban Stream Bioassessment

- We will participate in a regional bioassessment study.
- Maximum contributory amount: **$100,000**.

6. Receiving Waters Studies

- We commit to performing a series of water toxicity studies in this permit. Sediment, plume and benthic studies will follow if we find needs from the results of the water toxicity studies.

7. Tributary/Source Identification Monitoring

- Using the Pollutant Loading model, we will locate 8 tributary stations for Nutrients and Metals.
- A staggered monitoring schedule will be developed to monitor 8 tributary areas over 5 years.
- Estimated cost: **$192,000**.

Waterbody	*TMDL*	*Consent Decree Year*
Malibu	Nutrients	2002
Malibu Creek Lakes and Tributaries	Metals	
Ballona Creek	Metals	2004
Los Angeles River	Nutrients	2001
Los Angeles River	Metals	2004
San Gabriel River	Nutrients	2003
San Gabriel River	Metals	2006
Santa Monica Bay Beaches	Metals	2004

8. **Natural Stream Study**

- We will participate in a study in natural stream channels in Malibu Creek watershed.
- Maximum contributory amount: **$100,000**.

9. **Monitoring reports**

- Estimated cost: **$100,000**.

10. **Trash Monitoring**

- Trash Monitoring should not be a monitoring requirement.

11. **Total cost of the monitoring program: $1,845,000.**

LA County MS4 Monitoring Program
Draft Agenda
Friday, April 27, 2001 from 8 - 11am
Los Angeles River Conference Room

1. **Clarifications/rationale for draft requirements:**

Tributary monitoring

- **Questions/Concerns about draft language (County)**

  a) What are the objectives of this program?
  b) If the primary purpose of this program is to identify pollutant sources, desktop analyses will be performed first on constituents listed in Attachment 2 to identify tributary areas that produce most pollutant loads. After that, we will compare our findings with data obtained from the modified tributary monitoring.
  c) Explain the structure of the staggered monitoring schedule. (monitor 4 stations for 5 years?)
  d) Seeking participation of other permittees in this program is not feasible.

- **Answers and clarification (RB, HtB)**
  - **Source ID**
- **Discuss possible changes to draft language (everyone)**

Bioassessment monitoring

- **Questions/Concerns about draft language (County)**

  a) We prefer to participate in a regional bioassessment study.
  b) We suggest performing bioassessment twice every 5 years for 23 stations for the purpose of collecting historical data if we can't find any regional studies.
  c) It is our understanding that there are no chemical or physical analyses in conjunction with bioassessment for now.

- **Answers and clarification (RB, HtB)**
  - **Assess biological and physical impacts of storm water to receiving waters --** Different than Receiving Waters Studies?
  - **Determine status of aquatic resources**
  - **Data compatible with statewide efforts**
  - **Standard requirement in NPDES permits**
  - **Similar requirements in Ventura and San Diego MS4 permits**
  - **Cost**
- **Discuss possible changes to draft language (everyone)**

CTR ML methods

- **Questions/Concerns (County)**

a) The CTR level of detection limits don't apply to regulation of stormwater discharge.

b) If the purpose of lowering detection limits is to identify toxicity in stormwater runoff, toxicity tests need to be performed first in order to identify constituents of concern. Chemical tests on those constituents at the CTR level will follow to confirm toxicity ~~if necessary~~.

- **Rationale for requirement (RB)**
  - **Ensure that monitoring can detect toxic pollutant levels**

<u>TSS and SSC monitoring</u>

- **Discuss removing from permit and recommending as special study (everyone)**

2. **Other issues**

- **Confirm addition of shoreline monitoring requirement as discussed at 4-25 meeting**

- **Discuss Co-permittees role in contributing to monitoring efforts (everyone)**

- **Other concerns regarding draft language (County)**

Monitoring Program Review

Element	Board Draft	Comments	Priority
Mass Emission	1. The Principle Permittee shall monitor mass emissions from the following six mass emission stations: Ballona Creek, Malibu Creek, Los Angeles River, San Gabriel River, Coyote Creek and Dominguez Channel.	1. We will select a site in Dominguez Channel/LA Harbor WMA and construct a sampling station for the 2001-2002 storm season.	1
	2. All samples shall be analyzed for Suspended-Sediment Concentration (SSC) and Total Suspended Solids (TSS). Particle size distribution shall also be determined, depending on the development of appropriate sample handling and analytical methods.	2. This is new. Since the analysis procedure is not clear, the lab is not sure if it can perform this test. We need to understand the purpose of these analyses before performing them.	
	3. Method detection limits (MDLs) for priority pollutants shall be modified, pursuant to the California Toxics Rule.	3. The CTR level DLs don't apply to regulation of storm water discharges.	
	4. Estimated cost: $889,000	4. Estimated cost: $573,000 [CTR level DLs will be used for the first storm and existing DLs for the rest of storms]	
Toxicity	1. Water Column Toxicity Monitoring The Principal Permittee shall analyze two wet weather samples and two dry weather samples from each mass emission station for toxicity per year. 2. Estimated cost: $60,000.		4
TIEs	1. Toxicity Identification Evaluations (TIE) The Principal Permittee shall conduct Phase I TIEs on wet weather samples when two consecutive samples from the same monitoring station show toxicity and on dry weather samples when two consecutive dry weather samples from the same monitoring station show toxicity. 2. Estimated cost: $33,000.		5
TREs	1. Toxicity Reduction Evaluations (TRE) Following the identification of a toxic pollutant, the Principal Permittee shall perform a TRE for that pollutant and submit it to the Regional Board Executive Officer for approval within one year. TREs shall include procedures for investigating the causes and identifying corrective actions for toxicity problem. 2. During TRE development and implementation, the Principal Permittee shall continue monitoring the first storm and one dry weather event per year for toxicity at the subject station. Two years after the TRE has been approved, the Principal Permittee shall analyze two wet weather and two dry weather samples for toxicity to evaluate the effectiveness of the TRE. 3. Maximum contributory amount: $300,000 [toxicity monitoring + TRE development)]		6

Tributary	1. The Principal Permittee shall develop and implement a tributary/source identification monitoring program. At a minimum the program shall consist of station identification, monitoring, and analysis of data for a minimum total of 20 tributary stations throughout the five major watersheds. 2. To the extent practicable, station selections shall be representative of specific sources of pollutants identified through the Land Use Model. 3. Estimated cost: $480,000	1. Using the Pollutant Loading model, identify 8 high priority tributary areas. Develop a staggered monitoring schedule to cover all 8 tributary stations during 5 years. 2. No EMCs for trash and pesticides --> Can't assess pollutant loading using the model. 3. SCCWRP performs research on bacteria using EPA water quality models. 4. Estimated cost: $192,000	9
Receiving Waters	1. San Pedro Bay Study: Support plume and benthic studies in Dominguez Ch., LA River and SG River ($900,000) 2. Continuation of Santa Monica Bay Study ($400,000) 3. Estimated Cost: $1,300,000		8
Bioassessment	1. The Principal Permittee shall develop and implement an urban stream bioassessment monitoring program. At a minimum, the program shall consist of station identification, sampling, monitoring and analysis of data for 23 bioassessment stations in order to determine the biological and physical integrity of urban streams within Los Angeles County. 2. Estimated cost: $300,000	1. Bioassessment is intended to detect biological responses to pollution. It is a supplement to chemical analyses. Bioassessment coupled with chemical analyses helps identify probable causes of impairment not detected by chemical analyses alone. We suggest performing bioassessment twice every 5 years for 23 stations for the purpose of collect historical data. 2. Estimated cost: $60,000.	7
Bacteria	1. The Principal Permittee and the City of Los Angeles shall participate in the SCCWRP's development and calibration of water quality models in an effort to characterize the presence and persistence of indicator bacteria in dry and wet weather. 2. Estimated cost: $300,000		3
Trash	1. Develop a baseline trash monitoring program, pursuant to the Los Angeles River and Ballona Creek trash TMDLs. 2. Estimated cost: $10,000,000 ($2,000,000/yr * 5yrs)	1. Trash monitoring should not be a monitoring requirement.	11
Natural Stream	1. Participate in a study in natural stream channels in the Malibu Creek watershed. 2. Maximum contributory amount: $100,000.		10
BMP	1. Participate in studies to evaluate the effectiveness of structural and treatment control best management practices. 2. Test the effectiveness of 5 structural BMPs for 5 storm events. (Estimated cost is $87,000, assuming that 2 samples are taken for each structural BMP.)	1. We participate in BMP Task Force.	2
Report	1. Estimated cost: $100,000		
Cost	1. Total cost: $13,949,000.		

4-27 Monitoring

- look at pollutants of concern + possible concern
- SIP MDL minimum of first stan/year

H+B concerned with 25% drop off

303(d) list - didn't use adequate MDLs

- longer MDs for 2 years then recalculate

- track TMDL trib based on land use

City with draft program + determine key trib + come up with feasible number

Formally invite SCCWRP to meeting to determine trib

identify trib before permit

Specify how many

other permits + Ventura contract with F+G

sites should compliment other permits

H+B will do next 3 years of bioassessment

Bioassessment station @ same meeting

TMDL says 13267 will require baseline

remove "baseline" + add exact TMDL requirements?

What does participate mean - they

discuss Benthic Monitoring

May 9 1:30 pm. - 4 Store Bay & Meisburg
Library Ken Schiff
Mike Mullin
Long Beach

From: Megan Fisher
To: bdepoto@dpw.co.la.ca.us; bhau@dpw.co.la.ca.us; ghowe@dpw.co.la.ca.us; Guangyu Wang; jdorsey@san.lacity.org; Melinda Becker; mgold@healthebay.org; mmullin@san.lacity.org; nwaiso@dpw.ca.la.ca.us; sluce@healthebay.org; Tracy Patterson; Xavier Swamikannu
Date: 5/9/01 5:02PM
Subject: Tributary monitoring

Another meeting has been scheduled to discuss final language for the tributary and bioassessment monitoring requirements in the LA County MS4 permit. I will email you all an agenda and the County's proposal prior to the meeting, which will be:

May 30 at 1:30 in the Library

Megan Fisher
Environmental Specialist
Storm Water Section
Los Angeles Regional Water Quality Control Board
(213) 576-6790

CC: Dan Radulescu

From: Megan Fisher
To: bdepoto@dpw.co.la.ca.us; bhua@dpw.co.la.ca.us; ghowe@dpw.co.la.ca.us; nwaiso@dpw.co.la.ca.us; tjkim@dpw.co.la.ca.us
Date: 5/9/01 5:33PM
Subject: tributary proposal

At today's meeting, we requested that the County draft a proposal for tributary monitoring stations, based on an evaluation of your data for land use type, area, and rainfall for the last four years. We have decided (based on the TMDL schedule) that it may be more cost-effective to locate all stations in the LA River, San Gabriel, and Ballona Watersheds, focusing only on metals, and chlorpyrifos in LA River. Please narrow the proposal to these areas.

We agreed that you could submit the proposal to us by May 24.

Please let me know if you have any questions.

Thanks,
Megan
(213) 576-6790

CC: Dan Radulescu; Melinda Becker; Xavier Swamikannu

From: "Kim, TJ" <TJKIM@dpw.co.la.ca.us>
To: "'Megan Fisher'" <Mfisher@rb4.swrcb.ca.gov>, "DePoto, Bill" <BDEPOTO@dpw.co.la.ca.us>, "Hua, Bing" <BHUA@dpw.co.la.ca.us>, "Howe, Glenn" <GHOWE@dpw.co.la.ca.us>, "So, Wai" <NWAISO@dpw.co.la.ca.us>, "Kim, TJ" <TJKIM@dpw.co.la.ca.us>
Date: 5/10/01 8:01AM
Subject: RE: tributary proposal

Good morning Megan,
There is no chlorpyrifos water quality data available for the analysis. As I said, we can conduct studies only on metals and nutrients for now. Please let me know if you have any questions.

-----Original Message-----
From: Megan Fisher [mailto:Mfisher@rb4.swrcb.ca.gov]
Sent: Wednesday, May 09, 2001 5:34 PM
To: BDEPOTO@dpw.co.la.ca.us; bhua@dpw.co.la.ca.us; ghowe@dpw.co.la.ca.us; nwaiso@dpw.co.la.ca.us; TJKIM@dpw.co.la.ca.us
Cc: Dan Radulescu; Melinda Becker; Xavier Swamikannu
Subject: tributary proposal

At today's meeting, we requested that the County draft a proposal for tributary monitoring stations, based on an evaluation of your data for land use type, area, and rainfall for the last four years. We have decided (based on the TMDL schedule) that it may be more cost-effective to locate all stations in the LA River, San Gabriel, and Ballona Watersheds, focusing only on metals, and chlorpyrifos in LA River. Please narrow the proposal to these areas.

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Please let me know if you have any questions.

Thanks,
Megan
(213) 576-6790

CC: Dan Radulescu <DRADULES.RB4Post.Region4@rb4.swrcb.ca.gov>, Melinda Becker <mbecker.RB4Post.Region4@rb4.swrcb.ca.gov>, Xavier Swamikannu <XSWAMI.RB4Post.Region4@rb4.swrcb.ca.gov>

From: Megan Fisher
To: bdepoto@dpw.co.la.ca.us; bhua@dpw.co.la.ca.us; ghowe@dpw.co.la.ca.us; Guangyu Wang; jdorsey@san.lacity.org; Kens@sccwrp.org; Melinda Becker; mgold@healthebay.org; Michael Lyons; mmullin@san.lacity.org; nwaiso@dpw.co.la.ca.us; sluce@healthebay.org; stevew@sccwrp.org; tjkim@dpw.co.la.ca.us; Tracy Patterson; Xavier Swamikannu
Date: 5/14/01 9:57AM
Subject: Another meeting

Another meeting has been scheduled to discuss the LA MS4 monitoring requirements. The purpose of this one is to discuss any questions and issues about the objectives, methods, studies, etc..., prior to the issuance of the second draft. Ken Schiff and/or Steve Weisberg from SCCWRP will be here. Due to schedule constraints, we had to schedule this one for May 31, the day after the meeting to go over the trib station proposal. Sorry for the back-to-back meetings!

Thursday, May 31 at 9:30 in the Library

Megan Fisher
Environmental Specialist
Los Angeles Regional Water Quality Control Board
(213) 576-6790

CC: Dan Radulescu

California Regional Water Quality Control Board

Los Angeles Region

Winston H. Hickox
Secretary for Environmental Protection

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640
Internet Address: http://www.swrcb.ca.gov/~rwqcb4

Gray Davis
Governor

FAX TRANSMITTAL

DATE: MAY 1 1 2001

TO : Eduard Schroder
City of Signal Hill

FAX NO. (562) 989-7393

FROM:
DAN RADULESCU
CRWQCB LA REGION
PHONE 213 576 6668
FAX 213 576 6660

TEL.# (213) 576 - 6669
FAX# (213) 576 - 6660

NUMBER OF PAGES SENT (INCLUDING THIS COVER PAGE): 7

MESSAGE:

Hello,

As requested I enclosed a copy of the Regional Board Resolution 98-08

vbc 3/17/99

MESSAGE CONFIRMATION

MAY-14-2001 12:40 MON

FAX NUMBER: 2135766660
NAME : CRWQCB LA REGION

NAME/NUMBER : 915629897393
PAGE : 007
ELAPSED TIME : 02'34"
MODE : G3 STD ECM
RESULTS : [O.K]

EPA

Los Angeles Regional Water Quality Control Board

01 Centre Plaza Drive
Monterey Park, CA
91754-2156
(213) 266-7500
FAX (213) 266-7600

Pete Wilson
Governor

May 5, 1998

To: Los Angeles County Municipal Storm Water Permittees

REGIONAL BOARD APPROVAL OF RECOMMENDED BEST MANAGEMENT PRACTICES (NPDES Permit No. CAS614001)

Dear Permittees:

On March 31, 1998, we sent you a copy of the Tentative Board Resolution approving the recommended BMPs for Development Construction and Industrial/Commercial Education (Site Visits) Programs, and for Municipal Sidewalk and Street Washing Activities.

On April 13, 1998, after a public hearing, the Regional Board considered and approved (contained in the attached Resolution No. 98-08) the recommended BMPs for the Industrial/Commercial Education (Site Visits) Program and for the Municipal Sidewalk and Street Washing Activities. The BMPs for Development Construction will be resubmitted for the Board's consideration after the revised Development Construction Model Program has been approved by the Board's Executive Officer.

If you have any questions or need additional information, please call me at (213) 266-7593 or Dr. Xavier Swamikannu at (213) 266-7592.

Sincerely,

VINNIE D. JESENA, P.E.
Chief, Los Angeles Coastal
Watershed Unit

Attachments as stated

EPA

Los Angeles
Regional Water
Quality Control
Board

01 Centre Plaza Drive
Monterey Park, CA
91754-2156
(213) 266-7500
FAX (213) 266-7600

Pete Wilson
Governor

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If you have any questions or need additional information, please call me at (213) 266-7593 or Dr. Xavier Swamikannu at (213) 266-7592.

Sincerely,

VINNIE D. JESENA, P.E.
Chief, Los Angeles Coastal
Watershed Unit

Attachments as stated

Our mission is to preserve and enhance the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations.

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

Resolution No. 98-08

APPROVING BEST MANAGEMENT PRACTICES
FOR
MUNICIPAL STORM WATER AND URBAN RUNOFF MANAGEMENT PROGRAMS
IN
LOS ANGELES COUNTY

(NPDES NO. CAS614001)

WHEREAS, THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION FINDS:

1. Pursuant to the requirements of Order No. 96-054, Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges Within the County of Los Angeles (Permit), the Principal Permittee, in consultation with Permittees, has developed a model program for Industrial/Commercial Education. This program must include Best Management Practices (BMPs) to control/minimize the discharge of pollutants to receiving waters.

2. The Permit required the City of Los Angeles to conduct a study on pollutants entering storm drains from street and sidewalk washing operation by: (i) characterizing municipal street washing and sidewalk washing; (ii) assessing the impacts of such activities; and (iii) recommending appropriate BMPs to control any adverse impact. Accordingly, the City of Los Angeles has completed and submitted a final report entitled *A Study of Pollutants Entering Storm Drains from Street and Sidewalk Washing Operations in Los Angeles, California* that includes recommended BMPs for said activities.

3. The Permit also requires that the BMPs be approved by the Regional Board before the Permittees incorporate them into their regulatory programs.

4. The BMPs have been evaluated and are considered appropriate for the respective program/activity.

THEREFORE BE IT RESOLVED THAT:

1. The Best Management Practices contained in the following Attachments are approved:

   a. Attachment 1 -- Industrial/Commercial Program (Site Visit); and

   b. Attachment 2 -- Sidewalk and Street Washing.

2. Permittees consider these BMPs in their regulatory programs in accordance with the provisions of Order No. 96-054.

I, Dennis Dickerson, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Los Angeles Region, on April 13, 1998.

DENNIS A. DICKERSON
Executive Officer

Resolution No. 98-08

BMP List Index

Table 1 is an index to all BMP lists and their SIC codes

Table 1 *Index of BMP Lists for Industrial/Commercial Facilities*		
Attachment 1		
Page Section	*SIC Codes (exceptions in parentheses)*	*Industry Types*
A	24 (2434)	Timber Products Facilities
B	26	Paper and Allied Products Mfg Facilities
C	28 (283)	Chemicals and Allied Products Mfg Facilities
D	29	Asphalt Paving and Roofing Materials Manufacturers and Lubricant Manufacturers
E	32	Glass, Clay, Concrete, and Gypsum Product Facilities
F	33	Primary Metals Facilities
G	10	Metal Mining Facilities
H	12	Coal Mines and Coal Mining-Related Facilities
I	13	Oil & Gas Extraction Facilities
J	14	Mineral Mining and Processing Facilities
K	4953	Hazardous Waste Treatment, Storage or Disposal Facilities
L	4953	Landfills and Land Application Sites
M	5015	Automobile Salvage Yards
N	5093	Scrap & Waste Recycling
O	4911	Steam Electric Power Generating Facilities
P	40 41 42 43 5171	Vehicle and Equipment Maintenance Areas at Land Transportation Facilities
Q	44	Vehicle and Equipment Maintenance Areas at Water Transportation Facilities
R	373	Ship & Boat Building or Repairing Yards
S	45	Vehicle and Equipment Maintenance and Deicing Areas at Air Transportation Facilities
T	4952	Treatment Works

Page Section Refers to the Best Management Practices List for the Industrial/Commercial Education Site Visit Program (January 5, 1998) 4/13/98

Table 1 *Index of BMP Lists for Industrial/Commercial Facilities*		
Attachment 1		
Page Section	*SIC Codes (exceptions in parentheses)*	*Industry Types*
U	20 21	Food and Kindred Products Facilities
V	22 23	Textile Mills, Apparel, and Other Fabric Product Manufacturing Facilities
W	2434 25	Wood and Metal Furniture and Fixture Manufacturing Facilities
X	27	Printing and Publishing Facilities
Y	30 39	Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries
Z	31	Leather Tanning and Finishing Facilities
AA	34	Fabricated Metal Products Industry
AB	35 (357) 37 (373)	Facilities that Manufacture Transportation Equip., Industrial, or Commercial Machinery
AC	357 38 36	Manufacturers of Electronic and Electrical Equipment
Attachment 2		
Page Section	*SIC Codes (exceptions in parentheses)*	*Commercial Types*
AD	5013 5014 7532-7534 7536-7539	Vehicle Service Facilities
AE	5541	Gasoline Stations
AF	5812	Restaurants

Page Section Refers to the Best Management Practices List for the Industrial/Commercial Education Site Visit Program (January 5, 1998)

Resolution No. 98-08

ATTACHMENT 2

Recommended Best Management Practices
for
Municipal Sidewalk and Street Washing Operations

TYPE OF DISCHARGE	RECOMMENDED BMPS
SIDEWALK WASH WATER	1. Remove trash, debris, and free standing oil/grease spills/leaks (use absorbent material, if necessary) from the area before washing; and 2. Use high-pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallon per square feet of sidewalk area.
STREET/ALLEY WASH WATER FROM AREAS WITH UNSANITARY CONDITIONS*	Collect and divert wash water to the sanitary sewer - publicly-owned treatment works (POTW) Note: POTW approval may be needed.

* This BMP is only to be applied in areas impacted by transient populations. Each Permittee is required to apply this BMP in areas where the congregation of transient populations can reasonably be expected to result in a significant threat to water quality.

4/13/98
p:\lactrm\bmpwsh98.doc

From: Megan Fisher
To: bdepoto@dpw.co.la.ca.us; bhua@dpw.co.la.ca.us; ghowe@dpw.co.la.ca.us; Guangyu Wang; jdorsey@san.lacity.org; Kens@sccwrp.org; Melinda Becker; mgold@healthebay.org; Michael Lyons; mmullin@san.lacity.org; nwaiso@dpw.co.la.ca.us; sluce@healthebay.org; stevew@sccwrp.org; tjkim@dpw.co.la.ca.us; Tracy Patterson; Xavier Swamikannu
Date: 5/15/01 12:05PM
Subject: May 31 meeting cancelled
Monitoring

Due to the conflicting Basin Plan review meeting, the LA MS4 monitoring meeting scheduled for May 31 at 9:30 has been cancelled. The purpose of the meeting was to discuss technical questions and overall issues, and to get input from SCCWRP on these things. We can discuss rescheduling at the next meeting.

The May 30 meeting, at 1:30, is still on. Next week, I will email you a preliminary draft and the County's trib station proposal for discussion.

Megan Fisher
Environmental Specialist
Los Angeles Regional Water Quality Control Board
(213) 576-6790

CC: Dan Radulescu

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

In Reply
Refer to: WTR-5

MAY 16 2001

2001 MAY 21 P 2:47

James DeStefano
Interim City Manager
City of Diamond Bar
21825 E. Copley Drive
Diamond Bar, CA 91765-4178

Dear Mr. DeStefano:

Thank you for your letter of April 30, 2001, regarding EPA, Region 9's letter of December 19, 2000 to the Los Angeles Regional Board concerning requirements for inspections of industrial and commercial facilities by municipal separate storm sewer system (MS4) permittees. Your letter requested clarification of a number of issues in the December 19, 2000 letter.

As you may be aware, urban runoff is the leading cause of water quality impairment in Santa Monica Bay and the Los Angeles area. This problem, and the State's inability to apply adequate resources to its storm water program, were key factors cited in a petition filed by the Natural Resources Defense Council (NRDC) to withdraw the NPDES storm water program administered by the Los Angeles Regional Board. Current storm water fees to the State do not provide enough funds to meet all storm water program needs. In response to the NRDC petition, we met with NRDC and the State on October 5, 2000 to discuss what steps the State could take to respond to the concerns in the petition. The State had already begun to substantially increase its staffing resources devoted to the storm water program and we are continuing to discuss ways to further increase the State's investment through grant money from EPA. Also discussed were the NPDES regulatory requirements for MS4 permits, specifically the existing Federal regulatory requirement that MS4 permittees implement inspection and pollution control programs for certain industrial and commercial facilities. Such programs are already required in many MS4 permits, such as the permits for Orange, Riverside and San Diego Counties, and they play a significant role in ensuring the overall effectiveness of the storm water program through the combined efforts of the State and MS4 permittees.

The scope of an MS4 inspection program is normally negotiated with the State when a permit is reissued. We agree that a cooperative effort between the State and MS4 permittees on inspections is needed, and we believe that neither the MS4 permittees nor the State should be saddled with the entire inspection burden for industrial and commercial facilities. The State is also responsible for enforcing its general NPDES storm water permits, while the MS4 permittees need to enforce local storm water ordinances (which are often similar to the State general permits).

With regards to the intent of the "educational visits" in the existing MS4 permit, we contacted Los Angeles Regional Board staff to obtain additional information on this matter since the permit was issued by the Los Angeles Regional Board. According to Board staff, the intent of the "educational visits" in the 1996 permit was to provide a period of time during which MS4 permittees could engage in outreach activities to industrial and commercial facilities concerning storm water pollution control and best management practices which could be implemented by the facilities to reduce pollutant discharges. Since storm water pollution control was new to some facilities, the Board thought that such outreach was appropriate prior to actual enforcement of the pollution control measures. The Board also intended, however, that future permits, such as the permit under development at the present time, would require enforcement of local storm water pollution control ordinances. We believe that this is generally consistent with the characterization in our letter.

EPA has been intensively involved with all nine California Regional Boards and the State Water Resources Control Board to effectively implement the storm water program. From the initial issuance of the MS4 permits to the current round of reissuing those permits, we have been working closely with the State to encourage stakeholder participation and cooperation in the MS4 storm water programs. EPA staff have been participating in the monthly meetings between the State and the MS4 permittees to discuss the pending reissuance of the Los Angeles County MS4 permit, and we are committed to maintaining a cooperative and constructive dialogue among the stakeholders. We welcome and encourage active participation by all permittees in these monthly meetings.

Should you have any questions, please call me at (415) 744-1860, or refer your staff to Eugene Bromley of the CWA Standards and Permits Office at (415) 744-1906.

Sincerely,

Alexis Strauss 15 May 2001

Alexis Strauss
Director, Water Division

cc: Dennis Dickerson, Los Angeles Regional Board

Association of Ground Water Agencie

April 18, 2001

Mr. Dennis Dickerson, Executive Officer
Los Angeles Regional Water Quality Control Board
320 W. 4th St., Suite 200
Los Angeles, CA 90013

SUBJECT: STANDARD URBAN STORM WATER MITIGATION PLAN

Dear Mr. Dickerson:

The Association of Ground Water Agencies (AGWA) is a coalition of groundwater basin managers in the Southern California region whose mission is to enhance the effective management of groundwater resources. AGWA is also dedicated to promoting and protecting the reliability of existing groundwater supplies, encouraging conjunctive use of groundwater and surface water resources and promoting the protection and enhancement of groundwater quality.

We recently learned of the Regional Board's Standard Urban Storm Water Mitigation Plan (SUSMP), and we are concerned that SUSMP could have a negative impact on water quality in groundwater basins. At our meeting on March 19, 2001 Ms. Wendy Phillips of your staff gave a presentation on the Regional Board's storm water program, which we found very informative. However, our concerns over the potential impacts of SUSMP on local water resources remain.

As you know, groundwater basins provide an important and valuable supply of water to Southern California's communities, and their protection is of utmost importance. While SUSMP is designed to strengthen your municipal storm water program, it appears that several of the Best Management Practices (BMPs) identified in SUSMP will expose the groundwater basins to untreated storm water discharges. For example, the use of infiltration BMPs will expose local groundwater basins to the same contamination from which you are protecting other waterways. We encourage you to reconsider these BMPs, in consideration of the potential harm they pose to groundwater basins.

Another area in which we would like to obtain additional information pertains to the authorization for the SUSMP regulations. We would like information on the federal and state laws that the Regional Board is citing as authority for implementing the SUSMP. Please provide us with the statutes and/or regulations that authorize this plan.

725 North Azusa Avenue
Azusa, California 91702
Tel (626) 815-1300
Fax (626) 815-1303
http://www.agwa.org

Thank you for your consideration of our concerns. If you have any questions, please call me at (714) 378-3220.

Sincerely,

William R. Mills Jr., P.E.
Chairman

cc: State Water Resources Control Board
North Coast Regional Water Quality Control Board
San Francisco Bay Regional Water Quality Control Board
Central Coast Regional Water Quality Control Board
Central Valley Regional Water Quality Control Board
Lahontan Regional Water Quality Control Board
Colorado River Basin Regional Water Quality Control Board
Santa Ana Regional Water Quality Control Board
San Diego Regional Water Quality Control Board

May 16, 2001

Dennis Dickerson, Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Building Industry Association of Southern California

1330 South Valley Vista Drive
Diamond Bar, California 91765
909 396 9993
fax 909 396 9316
http://www.biasc.org

Municipal Storm Water Permit for Los Angeles County and Cities

Dear Mr. Dickerson:

On behalf of the more than 1,750 members of the Building Industry Association of Southern California ("BIA/SC"), we would like to acknowledge the time, effort and expertise that went into developing the Proposed Municipal Storm Water Permit (Proposed Permit) and thanks the Los Angeles Regional Water Quality Control Board staff for developing the Fact Sheet/Technical Report to accompany the Proposed Permit. This additional information was very helpful during our review of the Proposed Permit.

BIA/SC members strive to make the American dream of home ownership a reality for all residents of Southern California. Our members are landowners, developers, homebuilders, and construction contractors throughout the region and state. All segments of our association are impacted by the Proposed Permit, including land owners within your jurisdictional boundaries, potential builders requiring land resources to satisfy the ever growing demand for housing, and construction employees relying on jobs in the region.

Regulations such as this Proposed Permit can have a detrimental affect on our members' ability to provide more affordable urban, infill homeownership opportunities. California has 9 of the nation's 10 least affordable housing markets, including 7 of the top 7. A kindergarten teacher in Downtown Los Angeles needs over $78,096 in additional income to afford the median-priced home. Yet, we are under-producing housing. Last year marked the 10th consecutive year of housing production at roughly 50 percent of demand. The annual housing deficit for Los Angeles County, forecast by the Department of Housing and Community development, is expected to be 28,000 units. We cannot continue down this path if we hope to achieve a higher quality of life for the citizens of our region. This quality of life should be free from constant worries about rent hikes, tedious hours on the road, the need to leave a satisfying job and the dawning realization that owning a home is just not possible.

We understand that a higher quality of life also includes good water quality. This is why we have begun to implement a CLEAN Water Plan within our industry.

Key elements of this plan include:

1. C - Create practical regulations by promoting and supporting sound environmental policies and participating proactively in the water quality regulatory process.
2. L - Lead an industry-wide change in the way our industry approaches water quality issues so that the building industry can become a leader in the effort to develop and implement water quality solutions for our region.
3. E - Educate the industry on water quality compliance issues through workshops, seminars, newsletters, trade magazine and certification programs. Our educational efforts will also extend to new homebuyers and the general public.
4. A - Advance technological and design innovations which improve water quality and can be used in building designs
5. N - Nurture comprehensive regional solutions by working for inclusion of regional Best Management Practice (BMP) options in water quality regulations and promoting the involvement of other stakeholders in developing regional solutions.

Based on the foregoing, we ask that you consider the following comments on the Proposed Permit and work with us to find solutions that provide affordable housing and good water quality for the citizens of our region.

Findings Discussion

1. **Finding 2** states the following:

Development and urbanization especially threaten environmentally sensitive areas. Such areas have a much lower capacity to withstand pollutant shocks than might be acceptable in the general circumstance. In essence, development that is ordinarily insignificant in its impact on the environment may in a particular sensitive environment become significant. These environmentally sensitive area include Areas of Special Biological Significance, water bodies designated with a RARE beneficial use, Significant Natural Areas, and impaired water bodies listed under Clean Water Act Section 303(d).

Comment: This finding lacks basis and should be removed. The intent of this finding is to show that environmentally sensitive areas (ESA's) are less able than other areas to withstand societal impacts. This is unproven and misinterprets the labeling of ESA's. ESA's are listed as such because they are considered areas of higher environmental priority when compared to other areas. This does not mean that these areas are less able to withstand societal impacts. It means they have been deemed to carry a higher priority when compared to other areas. This is why ESA's are already heavily regulated. The State Water Resources Control Board said as much in its SUSMP ruling, which removed ESA's as a priority development category.

2. **Finding 7** states the following:

The increased volume, increased velocity, and discharge duration of storm water runoff from developed areas greatly accelerates downstream erosion and impairs stream habitat. Studies have demonstrated a direct correlation between the degree of imperviousness of an area and the degradation of its receiving waters. Significant declines in the biological integrity and physical habitat of streams and other receiving waters have been found to occur with as little as 10 percent conversion from natural to impervious surfaces. Percentage impervious cover is a reliable indicator and predictor of potential water quality degradation expected from new development. (Impervious Cover as An Urban Stream Indicator and a Watershed Management Tool, Schuler, T. and R. Claytor, In, Effects of Water Development and Management on Aquatic Ecosystems (1995), ASCE, New York.)

Comment: This finding makes a blanket statement as though all developed areas accelerate downstream erosion and impair stream habitat. Developing land in certain areas does have the potential to accelerate downstream erosion and impair stream habitat, however BMPs can be implemented to minimize this impact and a large portion of development in Los Angeles County occurs in areas that will not cause downstream erosion due to the presence of concrete-lined channels. This statement should be changed to read "developed areas have the potential to accelerate downstream erosion..." It should also be noted that this finding is based on one study, not multiple studies as mentioned.

Part 2. Receiving Water Limitations Discussion:

1. **Receiving Water Limitations 1 and 2** state the following:

    1. *Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited.*
    2. *Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance.*

    Comment: These items are not in compliance with State Water Resources Control Board (State Board) Order No. WQ 99-05, which required specific receiving water limitation language to be included in future municipal storm water permits. These two items are not included in this required language and should, therefore, be removed from the Proposed Permit. If left in the Permit, these two items would most likely create a situation where all dischargers would be in non-compliance of this Order from day one of implementation. Therefore, it should also be noted at the end of the Receiving Water Limitations section that compliance with the receiving water limitation procedure is adequate to maintain full compliance with the Permit and the Clean Water Act. This is the explicit intent of State Board Order No. WQ 99-05.

Part 4.C Programs for Development Planning Discussion:

1. **Section C.1** states the following:

The Permittees shall implement a development-planning program with immediate effect that will require all planning priority development and redevelopment projects to,

a) Minimize impacts from storm water and urban runoff on the biological integrity of natural drainage systems and water bodies in accordance with requirements under CEQA, Section 404 of the CWA, local ordinances and other legal authorities;

b) Maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground;

c) Minimize the quantity of storm water directed to impermeable surfaces and the MS4;

d) Minimize pollution emanating from parking lots through the use of appropriate treatment control BMPs and good housekeeping practices;

e) Establish reasonable limits on the clearing of vegetation from the project site including, but not limited to, regulation of the length of time during which soil may be exposed and in certain environmentally critical situations, the prohibition of bare soil;

f) Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from the development site.

Comment: The use of the words minimize and maximize are overly broad and subject to wide discretion and problematic enforcement. We suggest inserting the wording "to the extent technically and economically feasible" after each of these words. Item (e) appears to attempt to address erosion control during the construction phase. Erosion control is already addressed in the Construction section of this Permit and is also regulated in the State General Construction Permit. Therefore, this requirement is out of place here and should be deleted. Item (f) is already addressed in the SUSMP portion of the Permit and is not necessary in this section, and should therefore be deleted.

2. **Section C.2 Peak Flow Control** states the following:

The Permittees shall establish and enforce numerical criteria no later than [90 days from permit adoption] to control the post-development peak storm runoff discharge rates in natural drainage systems to maintain or reduce pre-development peak discharge rates to prevent down-stream erosion, and to protect stream habitat. Natural drainage systems include, but are not limited to, the following:

a) Malibu Creek

b) Topanga Canyon

c) Upper Los Angeles River

d) Upper San Gabriel River

e) Soft-bottom segments of other receiving waters within Los Angeles County

Comment: The requirement to control the post-development peak storm runoff discharge rates should be made one of the requirements listed in Section C.1 for planning priority

development and redevelopment projects. Unfortunately, even when listed as a requirement in this section, the ability for Permittees to enforce and developers to implement this requirement is impossible due to the major questions still unanswered. Two of these questions are, "What effect is downstream erosion having on stream habitat and what numerical criteria is necessary to protect this stream habitat?" We suggest that Los Angeles County, in coordination with the Executive Advisory Committee (EAC) and the Building Industry, work with Ventura County Flood Control District to develop answers to these questions and to establish appropriate numerical criteria. They should be given two years from Permit adoption to establish this criteria and also to establish which receiving water segments require implementation of this criteria. For this reason, items a) – e) should be deleted. Implementation should not be required until adoption of this numerical criteria by the Regional Water Quality Control Board.

3. **Section C.3 Standard Urban Storm Water Mitigation Plans** states the following:

   a) *Each Permittee shall require that single-family hillside home developments:*
      (1) Conserve natural areas
      (2) Protect slopes and channels
      (3) Provide storm drain system stenciling and signage
      (4) Divert roof runoff to vegetated areas before discharge
      (5) Direct surface flow to vegetated areas before discharge

   b) *Each Permittee shall require that a Standard Urban Storm Water Mitigation Plan as approved by the Regional Board in Board Resolution No. R 00-02 be implemented for the following categories of developments with immediate effect:*
      (1) Single-family hillside residential developments of 10,000 square feet or more
      (2) Ten or more unit homes (includes single family homes, multifamily homes, condominiums, and apartments)
      (3) A 100,000 or more square feet industrial/ commercial development
      (4) Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534, and 7536-7539)
      (5) Retail gasoline outlets
      (6) Restaurants (SIC 5812)
      (7) Parking lots 5,000 square feet or more or with 25 or more parking spaces

   c) *Each Permittee shall require, no later than 180 days from permit adoption that a Standard Urban Storm Water Mitigation Plan be implemented for all projects located in or directly adjacent to or discharging directly to an environmentally sensitive area, where, the development will:*
      (1) create 2,500 square feet or more of impervious area, or
      (2) alter the area of imperviousness of the site to ten or more percent of the naturally occurring condition, and
      (3) discharge storm water and urban runoff that is likely to impact a sensitive biological species or habitat

Comment: The requirements for single-family hillside residence listed in section C.3.a should be deleted, as there have been no studies to justify the inclusion of single-family hillside residence as a priority development category to include in the SUSMP. The pollutant loading from single-family hillside residence are minimal when compared to other development categories and the downstream erosion potential is still yet to be determined, as discussed in Section C.2, Peak Flow Control.

Section C.3.b requires that a SUSMP as approved by the Regional Board in Board Resolution No. R 00-02 be implemented. Instead of referencing this SUSMP, we suggest attaching a SUSMP to the Permit, so as to alleviate any confusion and to have a one-stop document. We also recommend that the single-family hillside residential category be deleted and the ten or more unit homes category be combined with the industrial/commercial category to read "A commercial, industrial or residential development with 100,000 or more square feet of directly connected impervious area which is not considered low or moderate income housing." The definition for directly connected impervious area to be added to the definitions section is "the area covered by a building, impermeable pavement, and/or other impervious surfaces, which drains directly into the storm drain without first flowing across permeable land area (e.g. lawns). It is not clear why residential development is even included as a priority development category when the water quality data collected to date has not shown residential land use to be of a high concern. Furthermore, even if residential development is included as a priority development, there is no reason why it should have a lower threshold (10+ homes) than commercial/industrial development (100,000 square feet) when the water quality data shows that commercial and industrial land use is of much higher concern than residential land use. Also, the inclusion of residential development in the SUSMP, is helping to prevent "smart growth" by creating a disincentive to high density, infill development that is needed to responsibly increase housing supply and affordability in urban, job rich areas of Los Angeles. This is why low or moderate income housing should be exempt from SUSMP requirements.

Section C.3.c requires that a SUSMP be implemented for all projects located in or directly adjacent to or discharging directly to an environmentally sensitive area (ESA). This requirement should be deleted because the State Water Resources Control Board has determined, in response to an appeal filed regarding the SUSMP, that developments within ESA's are already subject to extensive regulation under other regulatory programs. Nothing in the Findings of the proposed Permit has provided ample reasoning to have the ESA's reinstated as a priority development category. The Finding listed to justify this requirement is based on invalid assumptions.

4. **Section C.4 Numerical Design Criteria** states the following:

The Permittees shall require that post-construction treatment control BMPs incorporate, at a minimum, the following design criteria to mitigate (infiltrate, filter or treat) storm water runoff:

a) Volumetric Structural or Treatment Control BMP

(1) *the 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998), or*

(2) *the volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/ Commercial, (1993), or*

(3) *the volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or*

(4) *the volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event.*

AND/ OR

b) *Flow Based Structural or Treatment Control BMP*

(1) *the flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity, or*

(2) *the flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County*

(3) *the flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above*

Comment: The design standards included in the Permit can be used as defining Maximum Extent Practicable when structural treatment control BMPs are needed, however the design standard should be revised to require mitigation of the 80th percentile storm event and not the 85th percentile storm event. The 80th percentile storm event is consistent with both the Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998) and the California Stormwater Best Management Practices Handbook as defining MEP. Using the 85th percentile storm event as the design standard goes beyond MEP definition and therefore the intent of the Clean Water Act.

5. **Section C.5 Applicability of Numerical Design Criteria** states the following:

The Permittees shall require the following categories of planning priority projects to design and implement post-construction treatment and structural controls to mitigate storm water pollution prior to issuing grading or building permits:

a) *Single-family hillside residential developments of 10,000 square feet or more*

b) *Ten or more unit home development (includes single family homes, multifamily homes, condominiums, and apartments)*

c) *A 100,000 or more square feet industrial/ commercial development*

d) *Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534 and 7536-7539)*

e) *Retail gasoline outlets [suggested criteria: projected gasoline output of 25,000 gallons per month or more; or with four or more fueling dispensers, or with 24 or more dispensing meters or projected average daily traffic of 100 cars or more or 5,000 square feet or more of surface area]*

f) *Restaurants (SIC 5812) [5,000 square feet or more]*

g) *Parking lots 5,000 square feet or more or with 25 or more parking spaces*

h) *Projects located in, adjacent to or discharging directly to environmentally sensitive areas that meet threshold conditions identified above.*

Comment: As stated before, categories (a), (b) and (h) should be deleted and category (c) should be revised to read, "A commercial, industrial or residential development with 100,000 or more square feet of directly connected impervious area which is not considered low or moderate income housing."

6. **Section C.6** states the following:

Each Permittee shall require the implementation of SUSMP and post-construction control requirements for the following categories of development planning projects no later than March 9, 2003, to conform to USEPA Phase II requirements:

a) *One acre (40,000 square feet) industrial/commercial development*

Comment: This requirement is meant to comply with USEPA Phase II requirements, however Phase II requirements do not require implementation of SUSMP requirements. Phase II requires the operator of a small MS4 to develop, implement and enforce a program to reduce pollutants in post-construction runoff to the MS4 from new development and redevelopment projects that result in the land disturbance of greater than or equal to 1 acre. This does not mean that projects 1 acre or larger require SUSMP compliance, only that a program be developed to reduce pollutants in post-construction runoff. Requiring this program to be the SUSMP goes beyond what would be considered maximum extent practicabe (MEP) and should be deleted.

7. **Section C.8 Redevelopment Projects** states the following:

The Permittees shall apply the SUSMP, or site specific requirements including post-construction storm water mitigation to all projects that undergo significant redevelopment in their respective categories. Significant redevelopment means the creation or addition or replacement of 5,000 square feet of impervious surface area on an already developed site.

Where significant redevelopment results in an increase of more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post development storm water quality control requirements, the entire project must be mitigated.

Comment: We suggest adding the wording, "priority development" before the word "projects" in the second line of the paragraph to provide more guidance to plan checkers trying to determine which projects to apply this definition to. We also request removal of the word "replacement" from this definition so as to remain in compliance with the State Water Resources Control Board (State Board) Order emanating from the SUSMP appeal. The redevelopment definition was a main point of contention for this appeal and the State Board rendered a decision regarding this item. Since no new evidence or information has emerged since the State Board SUSMP appeal decision, there remains no reason to differentiate from their definition of redevelopment, which did not include "replacement" as part of the redevelopment definition.

8. **Section C.10 Mitigation Funding** states the following:

The Permittees shall identify no later than [120 days from permit adoption] a funding mechanism[s] and management framework, for endorsement by the Regional Board Executive Officer, to support regional solutions to storm water pollution, where the following situations occur:

a) A waiver for impracticability is granted or threat to ground water exists

b) Legislative funds become available

c) Off-site mitigation is required because of loss of environmental habitat

Comment: Section C.10.a requires a waiver of impracticability before a project can opt out of the Development Planning requirements and pay an in-lieu fee instead. This may be adequate if impracticability is defined to include the many situations where it is not technically or economically feasible to comply with the development planning requirements. We also suggest adding a section immediately following this section to provide incentive and direction for regional storm water mitigation programs. The wording for this section can be, "A Permittee or Permittee group may apply to the Regional Board for approval of a regional storm water mitigation program. The Executive Officer in the exercise of his discretion shall approve such a regional program if he determines that it is likely to result in equal or greater water quality benefit than project-by-project mitigation, as described above. Permittees and project proponents that participate in any approved regional storm water mitigation program shall in so doing satisfy all applicable requirements of this Order."

9. **Section C.11 California Environmental Quality Act (CEQA) Document Update** states the following:

Each Permittee shall modify planning procedures for preparing and reviewing CEQA documents to consider potential storm water quality impacts and provide for appropriate

mitigation, with immediate effect. The CEQA guidelines shall require consideration of the following:

a) Potential Impact of project construction on storm water runoff

b) Potential Impact of projects post-construction activity on storm water runoff

c) Potential for discharge of storm water from areas from material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas

d) Potential for discharge of storm water to impair the beneficial uses of the receiving waters or areas that provide water quality benefit

e) Potential for the discharge of storm water to cause significant harm on the biological integrity of the waterways and water bodies

f) Potential for significant changes in the flow velocity or volume of storm water runoff that can cause environmental harm

g) Potential for significant increases in erosion of the project site or surrounding areas

Comment: The California Environmentally Quality Act (CEQA) was formed to function as follows, "The Legislature finds and declares that it is the policy of the state to ensure that the long-term protection of the environment, consistent with the provision of a decent home and suitable living environment for every Californian, shall be the guiding criterion in public decisions." As you can see, CEQA is intended to balance environmental protection with adequate housing. Unfortunately, this draft Permit is heavily weighted with attempts at protecting the environment and no attempts or concerns related to increasing California's housing supply in order to meet the needs of a growing population and workforce. Therefore, we suggest adding wording in this CEQA requirement that is consistent with the Legislature's intent to balance housing needs with environmental concerns. We also suggest that the listed CEQA considerations be listed as examples of CEQA guidelines and not as specific requirements, since the Regional Water Quality Control Board has no explicit authority to specifically order municipalities to require detailed items in their CEQA review.

Section 4.D Programs for Construction Sites

1. **Section D.1** states the following:

1. For construction sites less than 1 acre, each Permittee shall:

a) Implement an educational program to discuss storm water pollution prevention and controls at construction sites and distribute educational materials targeted to the construction community during meetings, workshops, pre-construction meetings, and inspections;

b) Train employees in targeted positions (whose jobs or activities are engaged in construction activities including construction inspection staff) regarding the

requirements of the storm water management program no later than (180 days from adoption of this Order), and annually thereafter; and

c) *Require the implementation of a minimum set of BMPs to prevent pollution and control storm water runoff discharges. These minimum BMPs shall, at a minimum, include:*

- *Requirements for the use of effective erosion and sediment controls at construction sites;*
- *Requirements for structural and non-structural Best Management Practices (BMPs) for controlling runoff at construction sites;*
- *Site plan review and verification of BMP implementation; and*
- *Each Permittee is encouraged to prioritize sites to be inspected during wet weather to determine compliance with the minimum BMPs*

Comment: In order to maintain consistency with the Development Construction Model Program that was approved by your Board, we suggest changing the category threshold for projects from 1 acre to 2 acres. Construction sites below 2 acres in size should only be required to meet minimum requirements since placing additional requirements on these projects will tremendously impact the ability to provide affordable housing, while provide little benefit to the environment. We also suggest, based on the poor cost/benefit ratio of stepping up requirements on smaller projects, that items (a) and (b) and the last two bulleted items be deleted. To do our part in helping with construction compliance, we are in the process of working with the other construction related trade associations to develop a full-scale construction training program that we will use to train personnel on sediment/erosion control and the development and implementation of minimum BMPs, Local SWPPPs and State SWPPPs.

2. **Section D.2** states the following:

2. *For construction sites one acre and greater each Permittee shall require that in D.1 above and require the preparation, submittal, and implementation of a Local Storm Water Pollution Prevention Plan (Local SWPPP), prior to issuance of a grading permit for construction projects, that meets one or more of the following criteria:*

a) *Will result in soil disturbance of one acre or more in size;*

b) *Is within, directly adjacent to, or is discharging directly to an environmentally sensitive area; or*

c) *Is located in a hillside area.*

The Local SWPPP shall include appropriate construction site BMPs and maintenance schedules. A State required SWPPP may be substituted by a Local SWPPP if the Local SWPPP is at least as inclusive as the requirements for a State SWPPP. The BMPs may be selected from documents such as the California Storm Water BMP Handbook, the Caltrans Storm Water Quality Handbook, Ventura County Stormwater Quality Standard Sheet, American Society of Civil Engineers (ASCE) database or similar guidance

documents. In addition, each Permittee shall ensure the following minimum requirements are effectively implemented at all construction sites regardless of size:

a) Sediments generated on the project site shall be retained using adequate structural drainage controls;

b) No construction-related materials, wastes, spills, or residues shall be discharged from the project site to streets, drainage facilities or adjacent properties by wind or runoff;

c) Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the project site; and

d) Erosion from slopes and channels will be prevented by implementing BMPs including, but not limited to: limiting of grading scheduled during the wet season; inspecting graded areas during rain events; planting and maintenance of vegetation on slopes; and covering erosion susceptible slopes.

The Local SWPPP must include the rationale used for selecting or rejecting BMPs. The project architect, or engineer of record, or authorized qualified designee, must sign a statement on the Local SWPPP to the effect:

"As the architect/engineer of record, I have selected appropriate BMPs to effectively minimize the negative impacts of this project's construction activities on storm water quality. The project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activity."

The landowner shall sign a statement to the effect:

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/or inaccurate information, failing to update the Local SWPPP to reflect current conditions, or failing to properly and/or adequately implement the Local SWPPP may result in revocation of grading and/or other permits or other sanctions provided by law."

The Local SWPPP certification shall be signed by the landowner as follows:

For a corporation: by a responsible corporate officer which means (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of the construction activity if authority

to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality or other public agency: by an elected official, a ranking management official (e.g., County Administrative Officer, City Manager, Director of Public Works, City Engineer, District Manager), or the manager of the construction activity if authority to sign Local SWPPPs has been assigned or delegated to the manager in accordance with established agency policy.

Comment: In order to maintain consistency with the Development Construction Model Program that was approved by your Board, we suggest changing the category threshold for projects requiring a Local SWPPP to projects between 2 acres and 5 acres. We also suggest changing section 2.a to read, "Will result in soil disturbance of two acres or more in size or". Section 2.b should be deleted because, as the State Water Resources Control Board stated in response to the SUSMP appeal, environmentally sensitive areas are over-regulated as it is. Section 2.c should be changed to read, "Is located in a hillside area and soil disturbance will occur at the project site in the rainy season." This will help maintain consistency with the Development Construction Model Program that was developed with a multi-stakeholder effort and eventually adopted by your Board.

As for the minimum requirements to be implemented at all construction sites, we suggest adding Maximum Extent Practicable (MEP) wording to all of the requirements, as there needs to be this threshold to comply with the intent of the Clean Water Act. We also suggest deleting the requirement for "limiting of grading scheduled during the wet season". The intent of construction regulations is to keep sediments on site. The sites are already required to implement BMPs necessary to keep sediments on site. Grading should not be restricted, but should only require sediment and erosion control BMPs which meet MEP standards of implementation.

3. **Section C.4** states the following:

   4. *For sites five acres and greater, each Permittee shall require that in D.1 above and:*

      a) *Require proof of filing of a Notice of Intent (NOI) for coverage under the State General Construction Activity Storm Water Permit and a copy of the SWPPP prior to issuing a grading permit for all projects requiring coverage under the state general permit. On March 10, 2003, for sites one acre and greater, each Permittee shall require proof of filing a Notice of Intent (NOI) for coverage under the State General Construction Activity Storm Water Permit and a copy of the SWPPP prior to issuing a grading permit for all projects requiring coverage under the state general permit. The prepared SWPPP may satisfy the requirement under D.2. (in-lieu of Local SWPPP).*

      Each Permittee shall require proof of an NOI and a copy of the SWPPP at any time a transfer of ownership takes place for the entire development or portions of the common plan of development where construction activities are still on-going.

b) *Each Permittee shall use an electronic system to track grading permits issued by each Permittee.*

Comment: This requirement is not entirely consistent with the State General Construction Permit. We suggest that the SWPPP's be required to be prepared and available at the site before commencement of grading activity and not be required to be submitted to the Permittee before permit approval. The State General Construction Permit creation was a collaborative process involving all stakeholders leading to a successful permit program. We should not start changing this process using the Municipal Stormwater Permits.

CONCLUSION

In May 2000, the California Department of Housing and Community Development ("HCD") issued a report to serve as the Statewide Housing Plan Update. "Raising the Roof: California Housing Development Projects and Constraints, 1997-2020" summarizes the crisis and outlook for California housing as follows:

"Few issues facing California are as important as the State being able to meet its future housing needs. Between 1997 and 2020, California will likely add more than 12.5 million new residents and should form approximately 5 million new households. Almost all of this growth will occur in metropolitan areas. To meet the housing needs of California's growing population, homebuilders and developers will have to build an average of 220,000 housing units each year between now and 2020."

"Achieving this level of production will be difficult. From 1980 to 1990, a period of tremendous housing construction throughout the State, annual production (as measured by single- and multi-family permits) averaged just over 200,000 units. Between 1990 and 1997, production averaged only 91,000 units per year. In 1999, a boom year for the housing market nationally, there were less than 140,000 residential permits."

"Two conclusions stand out from this research above all others. The first is that California will need an unprecedented amount of new housing construction – more than 200,000 units per year through 2020 – if it is to accommodate projected population and household growth and still be reasonably affordable. California will need more suburban housing, more infill housing, more ownership housing, more rental housing, more affordable housing, more senior housing, and more family housing. California will also need more diverse housing, and more diverse neighborhoods. California's high land and construction costs, coupled with the cumbersome and open-ended nature of the local entitlements process, have served to discourage innovative land planning, site design, and building design." (*Raising the Roof*, HCD, pp. 3, 9.)

> Contributing to the existing and projected crisis, according to *Raising the Roof*, is not only the significant cost of regulatory compliance, but also the mere existence of the ever-increasing labyrinth of local, state, and national regulations that must be satisfied. (See, e.g., *Raising the Roof*, pp. 77-116.)

Based upon the foregoing, we respectfully request that you consider the ramifications of having your Board adopt the proposed Permit in its current format. We have raised many issues that should be thoughtfully reviewed and addressed. We are very willing to discuss these issues in more detail at any time.

The stakes are high, especially given Southern California's housing needs. The absence of meaningful consideration of these issues will have a major impact on affordable housing, jobs, wages and livability with little improvement in water quality. We urge you to thoroughly review the comments we have provided and to concentrate on what is best for water quality and the livelihood of our society.

By working together to address the various issues we have raised and to implement our CLEAN Water Plan, we are confident that we can achieve the balance necessary to greatly improve water quality while also meeting California's housing needs. We thank you for your consideration of our comments.

If you have any questions, please feel free to contact me, or our Director of Environmental Affairs, Tim Piasky at (909) 396-9993.

Very truly yours,

Richard J. Lambros
Executive Vice President

TBP/RJL

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OUR FILE NO:
00006-0875

2001 MAY 15 P 2:00

May 14, 2001

Mr. Dennis Dickerson,
Executive Officer,
California Regional Water Quality Control Board –
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Re: Comments on April 13, 2001, "DRAFT WASTE DISCHARGE REQUIREMENTS FOR MUNICIPAL STORM WATER AND URBAN RUNOFF DISCHARGES WITHIN THE COUNTY OF LOS ANGELES AND THE INCORPORATED CITIES, EXCEPT FOR THE CITIES OF LONG BEACH AND SANTA CLARITA"

Dear Mr. Dickerson:

On behalf of the City of Alhambra, let me thank you and your staff for the opportunity to offer comments on the April 13, 2001, "DRAFT WASTE DISCHARGE REQUIREMENTS FOR MUNICIPAL STORM WATER AND URBAN RUNOFF DISCHARGES WITHIN THE COUNTY OF LOS ANGELES AND THE INCORPORATED CITIES, EXCEPT FOR THE CITIES OF LONG BEACH AND SANTA CLARITA" (the "First Draft") of the new storm water permit for Los Angeles County. This letter supplements my prior email, of April 10, 2001, which offered comments on the "Discussion Draft." We are pleased to note that a number of the suggestions offered in those comments have been incorporated in the First Draft. We also want to take this opportunity to thank you and your staff for the Workshop you conducted at the Central Library. It was, we believe, a most worthwhile endeavor.

Nevertheless, the City of Alhambra, (and, we believe, a number of other cities) are concerned over a number of serious issues raised by the First Draft. These concerns include the invasion by the Regional Board, through the land use control features of the Storm Water Quality Management Plan ("SQMP") of the well-established right of local governments to control land use. In addition, the provisions of the First Draft which would impose "Peak Flow Control" and

post-construction "Numerical Design Criteria" appear to be attempts to control not the discharge of pollutants, but the discharge of unpolluted storm water. We believe that the Board is mistaken that the Clean Water Act authorizes it to regulate the discharge of water, rather than the discharges which the Congress addressed in the Clean Water Act, the discharge of pollutants. We are also particularly concerned that the "Peak Flow Control" and post-construction "Numerical Design Criteria" exceed the Board's authority to prescribe how the Clean Water Act's goals of reducing the discharge of pollutants to waters of the United States are to be achieved, and in so doing, violate the limitations of § 13360 of the California Water Code.

We also have grave concerns over other, and numerous, inconsistencies between provisions of this First Draft and the controlling US EPA regulations. Of particular concern is the use of vague terminology and definitions that are inconsistent with the EPA's definitions, for no apparent reason. If adopted in its present form, the Permit would impose more severe requirements on the City than required by the Clean Water Act and the EPA's implementing regulations. More detailed comments may be found in the enclosure. Those comments appear in the approximate order in which the matter in question appears in the First Draft of the permit, and not necessarily in the order of importance.

The City of Alhambra asks that this letter be included in the administrative record of this matter. The City reserves the right to offer further comments.

Very truly yours,

RUFUS C. YOUNG, JR.
Of BURKE, WILLIAMS & SORENSEN, LLP

cc: Honorable Mayor and Members of the City Council

Comments on April 13, 2001,
"DRAFT WASTE DISCHARGE REQUIREMENTS FOR MUNICIPAL STORM WATER AND URBAN RUNOFF DISCHARGES WITHIN THE COUNTY OF LOS ANGELES AND THE INCORPORATED CITIES, EXCEPT FOR THE CITIES OF LONG BEACH AND SANTA CLARITA"

1. The First Draft's **FINDINGS**, under "Nature of Discharges and Sources of Pollutants," beginning on page 3, fail to comply with the requirements of the U.S. EPA in 40 CFR § 122.27(d)(1)(iii) and (iv) for the permit to address source identification and general discharge characterization of the pollutants addressed by this First Draft.

2. Paragraph 3, under "Nature of Discharges and Sources of Pollutants," beginning on page 3, after enumerating pollutants from extraneous sources over which "Permittees have no or limited" authority to control, nevertheless illogically goes on to suggest that Permittees can implement control measures to reduce the entry of these pollutants into storm water...." If the Permittees have no authority to control those pollutants' entry into stormwater (i.e., at the source), the board should eliminate any suggestion that the Permittees are to reduce the entry of these pollutants into storm water.

3. The "Permit Background" section, paragraphs 8-12, pages 4 and 5, should be revised to meet the requirements of 40 CFR § 122.26(d)(1)(iii).

4. The "Permit Coverage" section heading, page 5, should be replaced with a new title, "Permit Coverage and Exemptions" as ¶ 13 addresses coverage, but ¶ 14 addresses exemptions to the coverage of this First Draft.

5. The "Permit Coverage" section, pages 5 and 6, should address the exclusion of pollutants over which the Permittees have no control, as recognized in paragraphs 3 and 4 under "Nature of Discharges and Sources of Pollutants," beginning on page 3, and Part 3.B..

6. In paragraph 18, pages 6-7, under "Federal, State and Regional Regulations" (and throughout the document) the citation to the "Federal Clean Water Act" should be changed. That law is the "Clean Water Act" and not the "Federal Clean Water Act." The "F" in federal should be lower case. The citation should be made complete, by adding "33 U.S.C. Sections 1251-1387."

7. Also in paragraph 18, pages 7-8, as the U.S. EPA has defined Municipal Separate Storm Sewer Systems (MS4) into three different categories: large, medium and small, these terms should be incorporated for clarity and consistency purposes.

8. In paragraph 24, the cite to CZARA is incomplete, as it fails to indicate just what CZARA amended. Consider changing the period after CZARA to a comma and adding "to the Coastal Zone Management Act of 1972, 16 U.S.C. Sections 1451-1465."

9. Paragraph 31, page 8, refers to Board Resolution No. R-00-02, the Standard Urban Storm Water Mitigation Plans (SUSMPs), the State Board's Order No. WQ 2000-1 and the State Board's Chief Counsel's policy memorandum of December 26, 2000. We disagree that these have the precedential and binding effects for which they are cited, and suggest that, in any event they were wrongly decided and are contrary to section 101(b) of the Clean Water Act and conflict with local governments' authority over land use. The CWA provides that its programs, including the NPDES program, are not meant to infringe on local land use authority:

> It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States . . . to plan the development and use (including restoration, preservation, and enhancement) of land and water resources . . . . (33 U.S.C. § 1251(b), CWA § 101(b))

This policy was relied upon recently by the Supreme Court of the United States in a case in which the court limited agency jurisdiction under the CWA. In *Solid Waste Agency of Northern Cook County v. Army Corps of Engineers*, 531 U.S. ___, 121 S.Ct. 675 (2001), the Court struck down a rule of the Army Corps of Engineers under which the Corps claimed jurisdiction over isolated intra-state wetlands. The Court found that the rule:

> would result in a significant impingement of the States' traditional and primary power over land and water use. *See, e.g., Hess v. Port Authority Trans-Hudson Corporation,* 513 U.S. 30, 44 (1994) ("[R]egulation of land use [is] a function traditionally performed by local governments"). Rather than expressing a desire to readjust the federal-state balance in this manner, Congress [through the CWA] chose to "recognize, preserve, and protect the primary responsibilities and rights of States ... to plan the development and use . . . of land and water resources . . . ." 33 U.S.C. § 1251(b).

Through the SUSMP provisions of their NPDES permits, the Regional Boards are attempting to regulate many matters inextricably bound to local land use authority, including requirements that local governments amend their General Plans and modify their CEQA project approval processes to require new development and redevelopment projects to adhere to the SUSMP provisions. These encroachments upon local land uses

and land use authority violate § 101(b) of the CWA, as they interfere with, and do not protect and preserve local governments' traditional sphere of influence over such matters.

It has long been recognized that within the State of California, "the front line role in land use planning and zoning is in the hands of the local government," and not state government or executive agencies. "[T]he state land use planning and zoning law 'leaves wide discretion to a local government not only to determine the contents of its land use plans, but to choose how to implement these plans.'" *Building Indus. Assoc.*, 211 Cal.App.3d at 296 n.12 (quoting *Yost v. Thomas*, 36 Cal.3d 561, 565 (1984)). Furthermore:

> the Legislature has been sensitive to the fact that planning and zoning in the conventional sense have traditionally been deemed municipal affairs. it [the Legislature] has thus made no attempt to deprive local governments (chartered city or otherwise) of their right to manage and control such matters, bur rather has attempted to impinge upon local control only to the limited degree necessary to further legitimate state interests. (*Los Angeles v. California*, 138 Cal.App.3d 526, 533 (1982).

10. Paragraph 36, page 9, cites State Board Order No. WQ 99-05 as specifying standard receiving water language to be included in permits. We disagree that this State Board Order No. WQ 99-05 retains its vitality, in view of the decision by the Ninth Circuit Court of Appeals in *Defenders of Wildlife v. Browner*, 191 F.3d 1159, 1164-66 (9th Cir., 1999).

11. In paragraph 37, page 9, California Water Code (CWC) § 13263(a) is paraphrased. This paraphrasing fails to include an important cross-reference to CWC § 13241. This should be corrected by adding the missing language: "and the provisions of CWC § 13241."

12. Paragraph 41, page 10, fails to recognize that there are projects which, by statute, are exempt from CEQA, and for that reason, paragraph 41 should be revised to incorporate recognition of this concept. This matter is more fully addressed in the petition filed by this firm on behalf of the Cities of Camarillo and Moorpark, in their appeal of the action of the Executive Officer with respect to the modification of the Ventura County SQUIMP. That petition is incorporated here by this reference.

13. In Part 2, RECEIVING WATER LIMITATIONS, in paragraphs 1 and 3, on pages 13 and 14, the terms "water quality standards" and "water quality objectives" are used. These are defined terms: the first letter in each word in these terms should be capitalized.

14. In Part 2, RECEIVING WATER LIMITATIONS, paragraph 1, page 13, states that "Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited." This seemingly absolute requirement conflicts with paragraph 3, under "Nature of Discharges and Sources of Pollutants," beginning on page 3. There, the Board recognizes that "[c]ertain pollutants present in storm water and/or urban runoff may be derived from extraneous sources over which "Permittees have no or limited" authority or jurisdiction. It is simply inconsistent and unreasonable for the Board, having recognized in paragraph 3 of the FINDINGS that there are pollutants in Storm Water and urban runoff over which the Permittees have no or limited jurisdiction, to nevertheless impose an absolute prohibition in paragraph 1 of Part 2 over such discharges. The Board should modify paragraph 1 of Part 2 to limit the requirement to those pollutants as to which the Permittee has jurisdiction, as appears to have been done in paragraph 2 of Part 2. See comment 15, below. See also Part 3.B, limiting the responsibility of Permittees to "discharges within its boundaries over which it has the authority to enforce the requirements of this Order." At a minimum, Part 3.B should be cross-referenced in Part 2, paragraphs 1 and 2.

In any event, this "or contribute" prohibition, of even de minimis contributions, ignores the federal "Maximum extent practicable" standard. MS4 permits are issued under Section 402(p)(3)(B) of the CWA, which requires that:

> Permits for discharges from municipal storm sewers --
>
> > (iii) shall require controls to reduce the discharge of pollutants to the *maximum extent practicable,* including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. (33 U.S.C. § 1342(p)(3)(B)(iii) (emphasis added))

The phrase "maximum extent practicable" or MEP, is the federal standard under which it is determined whether the removal of pollutants from the MS4 is sufficient. The use of the term "practicable" has been interpreted by the Ninth Circuit to provide flexibility as to how clean is clean enough; the water in the MS4 need not strictly comply with receiving water standards nor be clean enough to drink, reflecting the need to balance water quality goals with land use restrictions.

Section 13241 of the California Water Code requires a similar balancing when regional boards issue permits, including permits for MS4s. Among the factors regional boards must consider are:

> (c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
>
> (d) Economic considerations.

There is no demonstration, nor can there be, that this "zero contribution" level can be reasonably achieved. The Office of the Chief Counsel for the SWRCB has addressed this last point. In a 1993 memorandum, Elizabeth M. Jennings, Senior Staff Counsel for the SWRCB, wrote:

> On [Section 402(p)'s] face, it is possible to discern . . . the intent of Congress in establishing *the MEP standard.* First, the requirement *is to reduce, the discharge of pollutants, rather than totally prohibit such discharge.* Presumably, the reason for this standard. . . is the knowledge that *it is not possible for municipal dischargers to prevent the discharge of all pollutants in storm water.* (Memo from Elizabeth Miller Jennings, Senior Staff Counsel, SWRCB, to Archie Mathews, Division of Water Quality, at 2 (Feb. 11 1993) (emphasis added)).

By the "zero contribution" standard, the Permit actually requires what has already been labeled impossible by the Office of Chief Counsel for the SWRCB.

The Permit language apparently is based on SWRCB Order WQ 99-05. In that Order, the SWRCB concluded that "the Federal regulations implementing CWA Section 402(p) require NPDES permits to prohibit discharges of pollutants that 'cause or contribute' to exceedances of water quality standards." However, subsequent to that Order, the Ninth Circuit specifically determined that this interpretation was incorrect. See *Defenders of Wildlife v. Browner*, 191 F.3d 1159 at 1164-66 (9th Cir., 1999). As interpreted by the Ninth Circuit Court of Appeals, Section 402(p) "[does] not require municipal storm-sewer discharges to strictly comply with state water-quality standards" promulgated under Section 301 of the CWA. *Id.* Rather, the unambiguous language of Section 402(p) creates a different and less stringent standard requiring a MS4 permittee to reduce pollutants to the MEP.

15. In Part 2, RECEIVING WATER LIMITATIONS, paragraph 2, page 13, provides that "Discharges from the MS4 of storm water, or non-storm water, for which a permittee is responsible, shall not cause or contribute to a condition of nuisance." This statement at least introduces the concept of responsibility. However, that concept is not defined. It is suggested that the concept be related to jurisdiction, as discussed in the preceding comment, and in part 3.B.

16. In Part 2, RECEIVING WATER LIMITATIONS, in paragraph 2, page 13, the term "storm water" is used. "Storm Water" is a defined term. The first letter in each word should be capitalized.

17. In Part 2, RECEIVING WATER LIMITATIONS, in paragraph 3, page 13, in the second and third sentences, the term "receiving water limitations" is used, apparently as a defined term. However, as the term is not defined, it is elastic, as it appears to mean something other than Water Quality Standards or Water Quality Objectives. This elasticity exposes permittees, to say nothing of the Board, to potential CWA citizen suit liability. The term "receiving water limitations" should be defined.

18. The title of Part 3.B, "Responsibilities of Each Permittees," on page 15, should be revised to correct the singular-plural inconsistency.

19. In Part 3, STORM WATER QUALITY MANAGEMENT PLAN IMPLEMENTATION, MONITORING, AND REPORTING, Section B, page 15, the second sentence of the introductory paragraph provides "[a] Permittee is required to comply with the requirements of this Order applicable to discharges, which originate from places within its boundaries over which it has authority to enforce the requirements of this order." This statement does not account for the possibility of pollutants which originate outside a Permittee's boundaries, but which flow into a Permittee's boundaries. Nor does this address whether or not a Permittee is required to and/or has the authority to enforce the requirements of this Order against discharges which do not originate in, but flow into, its boundaries. This section should be revised to address pollutants in flows from extra-territorial areas.

20. In Part 3, STORM WATER QUALITY MANAGEMENT PLAN IMPLEMENTATION, MONITORING, AND REPORTING, Section B.4, page 15, should be revised to delete the term "technically knowledgeable" as it is unclear and is a limitation on the authority of cities to establish their own criteria for the selection of their respective representatives, who might, one supposes, include attorneys knowledgeable with the CWA and the EPA storm water regulations.

21. In Part 3.A.1, page 14, in the third sentence, the words "However" and "on behalf of Permittees" should be deleted. A new fourth sentence should be added: "Any permittee has the right to discuss any matter with the Regional Board." This change is essential. Neither the EAC nor the Principal Permittee has any authority under either the Clean Water Act or California law to act on behalf of, and in place of, any City which is a permittee. Any attempt to preclude a Permittee from direct discussions with the Regional Board is not only not authorized, it would deny the Permittee due process.

22. In Part 3.E, "General Requirements," paragraph 3 requires that the SQMP comply with the applicable requirements of 40 CFR § 122.26(d)(2). Section 122.26(d)(2) has a comprehensive list of requirements that should be included under "General Requirements."

23. In Part 3, Section G "Legal Authority" is a paraphrased, but over-broad and somewhat inaccurate restatement of 40 CFR § 122.26(d)(2)(i). For example, 3.G.1.e) and h) would prohibit the discharge of runoff of any kind, whether or not the runoff contained any pollutants. The Board's authority does not reach so far. Section 122.26(d)(2) should be quoted and should be cited to for legal authority.

24. In Part 3.G.1.j).(2), on page 18, the term "state or federally banned pesticide, fungicide or herbicide" should refer to or incorporate a list of these banned substances compiled by the Regional Board or the Principal Permittee. Asking each city to undertake the task of monitoring which agency has banned which pesticide, fungicide or herbicide is to impose an unrealistic burden.

25. In Part 3.G.1.j).(3), on page 18, the term "food wastes" is vague and undefined. The City suggests that the term be defined, with the following definition: "food and food-related waste includes restaurant and other commercial and residential kitchen waste and grease, restaurant kitchen mat wash and rinse water and trash container wash and rinse water."

26. Part 3.G.1.l), on page 19, re compliance with contracts, ordinances, etc. restates 40 CFR § 122.26(d)(2)(i)(E) and therefore, should cite that section.

27. Part 3.G.1.m), (page 19) which implements 40 CFR § 122.26(d)(2)(i)(A), without citing that section, should be revised by deleting the words "or potential contribution" of pollutants. The Clean Water Act says nothing about "potential contribution" of pollutants, and drawing a line between the presence of a pollutant within city boundaries

and the point where the pollutant is in a state of "potential contribution" is to ask the impossible.

28. In Part 3.G.1.n), on page 19, the defined term "illicit discharges" is used. "Illicit Discharge" is a defined term. The first letter in each word should be capitalized. In addition, this subparagraph would be strengthened by citing the authority for the prohibition of Illicit Discharges and Illicit Connections, 40 CFR § 122.26(d)(2)(i)(B).

29. Part 3.G.1.n), on page 19, re inspections, restates 40 CFR § 122.26(d)(2)(i)(F) and therefore should cite that section.

30. Part 3.G.1. should be revised to include the interagency authority required by 40 CFR § 122.26(d)(2)(i)(D).

31. Part 3.K, p. 21, cites 40 CFR Part 122.41. That is the wrong section. The words "consistent with 40 CFR 122.41" should be deleted and the words ", subject to the procedures set forth in 40 CFR Sections 122.62, 122.63 and 40 CFR Part 124," substituted in their place.

32. Part 4.A.2.b), on page 24, should be revised to delete the word "confidential." There is no provision in the California Evidence Code for confidential communications between a City and a business in this context.

33. Part 4.B.5, beginning on page 27, should be revised to use the defined term "Automotive Repair Shop" instead of the undefined term "Automotive Service Facilities."

34. Part 4.C.2, on pages 29 and 30, in the section on "Peak Flow Control," the Permit would impose the following requirement:

> ...control the post-development peak storm water runoff discharge rates in natural drainage systems to maintain or reduce pre-development peak discharge rates to prevent down-stream erosion, and to protect stream habitat.

The Regional Board is mistaken that it is within its authority to regulate these effects. Such effects do not constitute the "discharge of pollutants," as that phrase is defined in the CWA. The MS4 program is limited to controls on pollutant discharges. Other CWA programs not administered by the Regional Board are designed to address general pollution problems, such as might result from downstream erosion and scour.

MS4 permits must include, "controls to reduce the *discharge of pollutants* ... and such other provisions ... appropriate for the control of such *pollutants*." 33 U.S.C. § 1342(p)(3)(b)(iii), CWA § 402(p)(3)(b)(iii) (emphasis added). The term "pollutant" as used in sections 301 and 402 is defined by the CWA to mean:

> dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. (33 U.S.C § 1362(6), CWA § 502(a))

Water *per se*, regardless of what constituents are in it, is not within this statutory definition. Even "EPA does not consider flow to be a pollutant ...." Simply because urban runoff may not be of pristine water quality, does not mean that its erosive capacity, once it enters a stream channel, is subject to the MS4 program. CWA case law uniformly has found the definition of "pollutant" to not include downstream erosion. In *National Wildlife Fed'n v. Gorsuch*, 693 F.2d 156 (D.C. Cir. 1982), the National Wildlife Federation argued that dams require NPDES permits, and that discharges from dams amounted to a "discharge of a pollutant." The court acknowledged that among the water quality problems that may be caused by dams is the discharge of waters with the potential to cause downstream erosion. While stating that discharges from dams usually contain less sediment than upstream water, the court stated that, "the river will 'tend to restore its equilibrium [sediment] loading by scouring the downstream channel.'" *Id.* at 164 (alteration in original). However, the court held that discharges from dams were not discharges of pollutants, but rather, were discharges that altered water quality conditions, and as such, did not fall within the CWA definition of "pollutant" and did not require a NPDES permit. *See id.* at 171-72.

35. Part 4.C.3, Standard Urban Storm Water Mitigation Plans, at pages 30 and 31, exceeds the Board's authority. See comment 9, above.

36. Part 4.C.4, Numerical Design Criteria, at pages 31 and 32, which require BMPs to incorporate specific design criteria, exceeds the Board's authority to prescribe how MEP is to be achieved. While the Regional Board is the permitting agency, its power to specify the particular manner in which compliance may be achieved is limited and the cities and county have broad discretion to comply "in any lawful manner." Cal. Water Code § 13360. While the Regional Board is the permitting agency, its power to specify the particular manner in which compliance may be achieved is limited. Cities and counties have broad discretion to comply in any lawful manner. Section 13360(a) of the California Water Code states in pertinent part:

> No waste discharge requirement or other order of a regional board ... shall specify the design, location, type of construction, or particular manner in which compliance may be had with that requirement, order, or decree, and the person so ordered shall be permitted to comply with the order in any lawful manner.

The SUSMPs (SQMP) violate the limits imposed by § 13360 on the Regional Boards.[1] The volume and flow-based design standards for structural BMPs clearly run afoul of § 13360. Both standards specify that BMPs shall be designed in accordance with prescribed criteria. The design standards dictate that MEP for "all priority development projects" corresponds to infiltrating, treating or filtering the runoff from a design storm or design rainfall intensity further limiting the "lawful manner" with which permittees might satisfy MEP. More specifically, Section 13360 of the California Water Code states in pertinent part:

> No waste discharge requirement or other order of a regional board ... shall specify the design, location, type of construction, or particular manner in which compliance may be had with that requirement, order, or decree, and the person so ordered shall be permitted to comply with the order in any lawful manner.

The volume and flow-based design standards for structural BMPs clearly run afoul of Section 13360 and must be deleted.

37. In PART 5, DEFINITIONS, on page 49, "Illicit Disposal" is defined to mean "any disposal, either intentionally or unintentionally, of material(s) or waste(s) that can pollute storm water." This definition would carry this Permit far beyond the reach of the Clean Water Act. The Congress, in drafting the Clean Water Act prohibited the discharge of "Pollutants," a term which it defined. While the term "Pollutant" is defined in PART 5, DEFINITIONS, that definition is not used in the definition of "Illicit Disposal" which uses the vague "can pollute" and therefore might be construed as meaning something other than disposal of a "Pollutant." This lack of precision invites disagreement and,

[1] At hearing incident to the recent adoption of the NPDES Storm Water Permit for Cities in San Diego County, the Executive Officer of the CRWQCB-SD is reported to have acknowledged that the Permit runs the "risk of crossing the line of the Porter-Cologne dictate that we don't tell the discharger how to be in compliance." Reporter's Transcript, at 204.

potentially, litigation. The definition of "Illicit Disposal" should be changed to "the unpermitted disposal of a Pollutant into a Municipal Separate Storm Sewer."

38. In Part 5, DEFINITIONS, the definition of "Municipal Separate Storm Sewer System (MS4)" on page 50, should be revised to add, at the end of the definition, the words "and which discharges to Waters of the United States." Inclusion of a link of the MS4 to waters of the United States is essential, as it is that link which provides authority for the CWA's regulation of MS4.

39. PART 6.D, "Duty to Mitigate," on page 56, must be revised. As drafted, it goes beyond the U.S. EPA standards and requires a "Permittee" to take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment. This requirement goes far beyond the U.S. EPA standards limiting the duty to mitigate to only those discharges in violation of the Clean Water Act, which is the subject matter addressed in the First Draft. I recommend the term "in violation of this permit" be inserted after the word "discharge" and before the words "that has a reasonable" to parallel the requirements of the U.S. EPA. In addition, a provision making it clear that violation of this provision does not give rise to any cause of action by any person, other than for violation of the Clean Water Act, should be added.

40. PART 6.E, "Inspection and Entry," on page 57, should be revised to add a provision requiring that such access is to be conducted at a reasonable time. 40 CFR § 122.41(i) requires that access to all documents as may be required by law shall be conducted at "reasonable times." I recommend that a "reasonable time" condition be included in all four subsections.

May 16, 2001

2001 MAY 17 P 2:06

Mr. Dennis Dickerson,
Executive Officer,
California Regional Water Quality Control Board –
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Re: 1st Draft Municipal NPDES Permit, April 13, 2001
Review Comments

Dear Mr. Dickerson:

Attached please find comments on the referenced draft permit document, "DRAFT WASTE DISCHARGE REQUIREMENTS FOR MUNICIPAL STORM WATER AND URBAN RUNOFF DISCHARGES WITHIN THE COUNTY OF LOS ANGELES AND THE INCORPORATED CITIES, EXCEPT FOR THE CITIES OF LONG BEACH AND SANTA CLARITA" (Draft Permit).

These comments are respectfully submitted on behalf of the cities of Bell, Hidden Hills, and Norwalk. Also, we have reviewed and agree with comments on the Draft Permit as submitted to you by Mr. Rufus C. Young (letter dated May 15, 2001) and Los Angeles County Department of Public Works (email dated May 14, 2001) except were those comments conflict with the attached in which case the latter shall take precedence.

I am an environmental professional who provides consulting services for the Municipal NPDES Programs of the three aforementioned cities. If you have any questions or comments regarding this matter, please contact me at (310) 548-8454.

Sincerely,

Mark Smith
Charles Abbott Associates

cc: Carlos Alvarado, City of Bell
Cherie Paglia, City of Hidden Hills
Rey Alfonso, City of Norwalk

Enclosure

Part 3. STORM WATER QUALITY MANAGEMENT PLAN IMPLEMENTATION, MONITORING, AND REPORTING

F. SQMP Modifications (p. 17)

COMMENTS: As indicated elsewhere in the Draft Permit (see Finding No. 45, p. 11) the new program requirements proposed in the Draft Permit are intended to build on the existing programs. Presumably, the Regional Board intends for the Permittees to revise the Model Programs to add the new requirements, or to replace the existing requirements with the new requirements as appropriate (e.g., where there is a conflict between existing and new requirements, or where the new requirements supersede the existing requirements). However, the Draft Permit does not clearly state that this is the intent and does not offer any direction in this regard. Subsequent discussion of new Model Program requirements in Part 4 of the Draft Permit further clouds the issue by seldom recognizing the existing Model Programs. Instead, the new requirements are presented as though Permittees will be implementing entirely new programs (read the introductory sentences for each of the model program elements in the Draft Permit). This may particularly cause problems for readers of the New Permit who are unfamiliar with the history of these programs. Some new language should be added to the Draft Permit to clarify to all readers the relationship between existing and new requirements, and respective revisions to the Model Programs.

Part 4. SPECIAL PROVISIONS

A. Public Information and Participation Program (p. 21 – 25)

(b) Business Assistance Program (p. 24)

COMMENTS: From the first sentence of this section it is not clear whether this requirement applies to the "Permittees" as a group (i.e., countywide) or each Permittee individually. Assuming the intent is the latter, the first sentence should read, "Each Permittee shall develop and implement within its jurisdiction ...." Draft Permit wording is inadequately clear and too open-ended, potentially resulting in extremely high implementation costs for Permittees. Under the current wording, there is no limit to the number of times per year that any individual business within the 1,000 businesses/year cap may request assistance from a Permittee. For example, if the average number of requests/business/year were two, a Permittee would actually be required to respond to 2,000 requests/year rather than the 1,000 number inferred by the Draft Permit. A city's expense could be further increased by the number of such requests involving site visits. The Regional Board's Fact Sheet uses the City of Los Angeles' existing program as justification for this requirement. The Draft Permit, however, does

not recognize that 1,000 businesses (or requests) per year is a much more significant number for a small city than it is for a large city such as Los Angeles. The wording should be revised to define a cap that is based on the number of requests/year that a Permittee must respond to, and that cap should be further adjusted for a city's population or number of businesses. The starting point might be 1,000/reuests/year for a city the size of Los Angeles, with lower numbers for smaller cities.

B. Programs for Industrial/Commercial Inspections (p. 25 - 29)

General Comments

The Industrial/Commercial Program should continue to be an educational program only, with no inspection/enforcement elements as proposed in the Draft Permit. In their Fact Sheet, the Regional Board justifies the elevation of the existing program to an inspection/enforcement program, citing that the Draft Permit will be a third generation permit that must build on the experience developed under the previous two countywide municipal NPDES permits. This argument fails to recognize that these businesses have been operating for many decades without being subject to NPDES requirements. Only within the last decade have NPDES requirements begun to impact business. If they received any educational site visits, they have likely only received one or two visits within the last couple years or so. All NPDES requirements, therefore, are relatively new to the business community. In consideration of the sudden and rapid imposition of the many new NPDES requirements, some of which can be very costly and difficult to implement, businesses should be given more time in the current education phase to allow for the adjustment. This is important toward ensuring the continued economic competitiveness of regulated businesses.

Requiring the Permittees to implement an inspection/enforcement program in accordance with the Draft Permit would significantly increase program costs without a commensurate assurance of improved storm water/urban runoff quality. This requirement would have a significant adverse impact on Permittees' limited resources and ability to comply with an increasingly costly unfunded State mandate. The inspection/enforcement element should therefore be dropped in consideration of the economic component of meeting the maximum extent practicable (MEP) standard.

As written, the Draft Permit appears to require Permittees to conduct inspection/enforcement activities at facilities over which they do not have legal jurisdiction. Specifically, Federal and State owned facilities, as well as facilities that are covered directly under a State-issued NPDES permit (e.g., General Industrial NPDES Permit or individual NPDES permit). It is impractical and inappropriate for the Regional Board to require Permittees to conduct NPDES inspection/enforcement activities at such facilities. As the permitting agency that collects fees for State-issued NPDES permits, the Regional Board should retain

responsibility for conducting inspection/enforcement activities at facilities covered directly under such permits.

As indicated in the County's comments, it is important that the inaccurate wording indicating that this section applies to "all Industrial/Commercial sites" be revised to refer to only those sites identified in this section (i.e., sites identified in B.3, p. 26).

B.1 Pollution Prevention (Industrial/Commercial) (p. 25, last paragraph)
The wording in this paragraph is unclear. The County's suggested wording is more appropriate.

B.3 Threat to Water Quality Prioritization (Industrial/Commercial) (p. 26)
The Draft Permit's use of facility category names to define the types of facilities covered under this section [see B.3.(b) and (c)] is in adequate as it introduces too much subjectivity into the determination of precisely which facilities are covered. This can lead to confusion and differences in interpretation among Permittees as to which facilities must be inspected. Although, in its Fact Sheet, the Regional Board discusses the inadequacies of the SIC Code system for identifying regulated business categories, it appears to be the best available system for identifying specific business types. This is demonstrated under the Educational Industrial/Commercial Site Visit Program requirements in the current Permit. The current Permit uses similarly ambiguous facility category names. The ambiguity was subsequently eliminated by Table A-1 in Appendix A of the Countywide program guidance manual prepared by the Permittees. Table A-1 specifies the SIC Codes targeted by the Permit. The Draft Permit should identify the SIC Codes, or recognize that the Permittees will identify the codes in its revised program guidance documents.

B.7 Reporting of Non-Compliant Sites (Industrial/Commercial) (p. 28)
This section requires Permittees to promptly notify the Regional Board, both orally and in writing, every violation of a federal, state or local storm water regulation observed during the course of inspections. These requirements are excessive and impractical, and would be inappropriately expensive to implement. Instead, Permittees should be required to promptly report only those observed violations over which the Regional Board has direct permitting authority (e.g., a violation of the General Industrial Activity NPDES Permit, or State-issued individual NPDES permit).

C. Programs for Development Planning (p. 29 - 36)

General Comments

1. All references to proposed requirements as having "immediate effect" should be deleted as sufficient time must be allowed for Permittees to revise Model Programs, Permittee-specific programs, and employee training. Elsewhere in the Draft Permit, the Regional Board provides for 180 days for Model Programs revision alone (see Part 3.F.).
2. A number of requirements in this section appear to be redundant as they are already established under the existing SQMP. As such, it would seem that they need not be repeated in this permit any more than any of the other program requirements.

C. 2. Peak Flow Control (p. 29)
This section should be deleted per County's comments.

C.3. Standard Urban Storm Water Mitigation Plans (p. 30 – 31)
The Draft Permit requires Permittees to comply with the Regional Board's 12/7/00 SUSMP and, in so doing, completely ignores the revisions to that SUSMP that were made by the State Board in response to the cities' SUSMP petition. We believe that the State Board's SUSMP ruling represented a reasonable compromise between the Permittees and the Regional Board on these very important and controversial requirements. I the interest of promoting the spirit of cooperation that both parties have strongly supported with regard to implementing Permit requirements, we request that the revised SUSMP be maintained as defined by the State Board's ruling.

C.7. Site Specific Mitigation (p. 32)
Under the current Permit, the site-specific plans for these non-SUSMP projects (as well as for SUSMP projects for which implementation of the SUSMP requirements is not feasible) are referred to as Urban Storm Water Mitigation Plans (USMPS). Neither the Regional Board's SUSMP or this Draft Permit refer to this term. Should the Permittees drop this term?

C.10. Mitigation Funding (p. 34)
This compliance option is an important solution when on-site mitigation controls are not practical. This concept should be further expanded to include other off-site compliance options that are not necessarily "regional solutions". For example, when on-site SUSMP requirements are not practical for a single-family hillside residence, developers should have the option of draining the water to a nearby treatment or infiltration BMP that may be located off-site but nearby. The primary consideration should be that water quality is protected, regardless of whether the BMPs are located off-site or on-site, or are regional or sub-regional in scope.

D. Programs for Development Planning (p. 36 - 39)

D.2. (p. 37)

Some of the requirements are unrealistically absolute. For example, D.2.e requires that "No construction related materials, wastes, ... shall be discharged from the project site to streets, ... by wind or runoff;". These types of unattainable requirements will result in unreasonably high numbers of violations. Instead, words such as "minimized", "controlled" and "reduced" should be used.

Coalition for Practical Regulation

Arcadia
Artesia
Bellflower
Bell Gardens
Burbank
Cerritos
Commerce
Compton
Diamond Bar
Downey
Hawaiian Gardens
Industry
Irwindale
La Mirada
Lakewood
Lawndale
Monrovia
Montebello
Norwalk
Palos Verdes Estates
Paramount
Pico Rivera
Pomona
Rancho Palos Verdes
Rosemead
Santa Fe Springs
San Gabriel
Sierra Madre
Signal Hill
South Gate
Temple City
Vernon
Walnut
Whittier

15 May 2001

Dr. Xavier Swamikannu
Chief, LA/Long Beach Storm Water Unit
California Regional Water Quality Control Board, Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Subject: First Draft–Los Angeles County Municipal Storm Water NPDES Permit
(Draft Board Order, NPDES Permit No. CAS614001)

Dear Dr. Swamikannu:

Pursuant to your notice of April 13, 2001, the Coalition for Practical Regulation (CPR) is pleased to submit the following comments on the first draft of the renewed Los Angeles County Municipal Storm Water NPDES Permit. Our member cities have several concerns with the initial draft and would like to work with the Regional Board and other interested parties to develop a practical and workable permit that will lead to improved water quality in the receiving waters of the region.

CPR recognizes the effort that has gone into the preparation of this first draft and shares the Regional Board's goal of improving water quality within the Region. However, we are concerned that in their desire to improve water quality, the staff has drafted a permit that exceeds the Regional Board's authority (see attached letter from Richard Montevideo of the law firm of Rutan & Tucker LLP) and proposes a complex storm water quality regulatory framework that will invite third party lawsuits and distract city staffs from addressing real storm water quality problems.

This letter addresses a range of policy and program issues. Our comments are intended to assist the Regional Board prepare a permit that will provide a framework for improving water quality in a cooperative, cost-effective manner. We have focused on substantive comments rather than typographical mistakes

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or questions of grammar. Our specific comments are organized according to major sections of the draft permit in order to facilitate your review and response:

Findings

- CPR is pleased to see that the Regional Board staff recognizes the complexity of municipal storm water quality issues and the contributions of extraneous sources over which the Permittees have no or limited jurisdiction. However, we are concerned that the current draft permit excludes the Administrative Review process specified in Order No. 96-054. This process is important and should be added back into the Permit.

- Finding 6, especially when combined with the draft permit definition of "environmentally sensitive areas," is likely to lead to confusion and over-regulation. As the State Board acknowledged in Order 2000-11, "such developments are already subject to extensive regulation under other regulatory programs." If the Regional Board intends to address Areas of Special Biological Significance, water bodies with a designated RARE beneficial use, or impaired waters in the permit findings, CPR recommends that they be addressed in separate findings rather than be combined into a broad environmentally sensitive area category. Such findings could replace Finding 6 and increase the clarity and workability of the permit.

- CPR is pleased to note that the Regional Board staff acknowledges in Finding 14 that "the Permittees will not be held responsible" for facilities and/or discharges from entities over which they lack legal jurisdiction. However, we are concerned that the requirements of the permit are inconsistent with Finding 14. For instance, Section B.2 of Part 4 requires an inventory of all industrial/commercial sites "regardless of site ownership" and the definition of "Industrial/Commercial Facility" states that "Facility ownership (federal, state, municipal, private)" is not a factor in the definition.

- Finding 16 is inconsistent with the Clean Water Act and its implementing regulations. The draft finding says that the permit is intended to develop a storm water program to "minimize" the discharge of pollutants in storm water without incorporating the concept of "maximum extent practicable" (MEP) which is a critical component of the permit requirements for municipal discharges. Section 402(p)(3)(B)(iii) states that permits for discharges from municipal storm sewers "shall require controls to reduce the discharge of pollutants to the maximum extent practical." Congress did not say minimize. Therefore, the phrase "maximum extent practicable" should be substituted for the term "minimize" in Finding 16.

- Finding 17 conflicts, in part, with Finding 14. Municipalities have no authority to force State and federal agencies to enter into interagency "agreements," and there is no assurance that such agreements could be worked out with the agencies. The State and Regional Boards separately regulate these agencies and should regulate their discharges to municipal separate storm sewer systems.

- Finding 21 is inconsistent with the Clean Water Act and its implementing regulations. The finding goes beyond the cited regulations to refer to specifically defined industrial activities. The finding should be rewritten to remove commercial facilities and limit coverage to the defined industrial activities.

- Finding 31 cites Craig M. Wilson's memorandum of December 26, 2000, but excludes two important elements of the memo. Mr. Wilson reminded Regional Board Executive Officers that: "Pursuant to the Clean Water Act, municipal storm water permits must require controls to reduce the discharge of pollutants to the maximum extent practical (MEP)." He also noted that: "The Order encourages regional solutions." These points should be added to Finding 31 and appropriate terms added to the operative sections of the permit to facilitate implementations of regional solutions.

- Finding 36 appropriately references State Board Order No. WQ 99-05 that specifies standard receiving water limitation language. However, this finding should be expanded to include language based on 1996 permit language to clarify that "Timely and complete implementation by the Permittees of the storm water management programs prescribed in this Order shall satisfy the requirements of this Order and constitute compliance with receiving water limitations." Such language would protect the Permittees from nuisance lawsuits and encourage strict compliance with permit requirements.

- Finding 37 should be expanded to include the phrase "and the provisions of Section 13241." The concluding portion of the code section should not be excluded unless a separate finding is added which highlights sub-sections (c), (d) and (e) of Section 13241.

- Finding 41 should be deleted. As written, it attempts to use the California Environmental Quality Act (CEQA) to justify exceeding the Clean Water Act acreage limitations for new and redevelopment projects requiring permit coverage under Section 402(p). Municipalities do consider the environmental impacts of projects they approve and often condition projects to mitigate storm water quality and quantity impacts. However, it is the prerogative of the municipalities to protect themselves because of their responsibility for the quality of discharges from their storm drain

systems. It is not the prerogative of the Regional Board to mandate how municipalities comply with the requirements of CEQA. Furthermore, the final sentence of the draft finding, if it were taken literally, would make shambles out of planning and permitting in the municipalities subject to the permit and result in continuous litigation. The Regional Board cannot rewrite the Government Code or the Public Resources Code through permit requirements.

- Finding 43 should be revised to incorporate the statutory requirement of implementing BMPs "to the maximum extent practicable."

- Finding 46 should be revised to eliminate the term "structural." Structural controls can be either source controls or treatment controls.

Part 1. Discharge Prohibitions

The final paragraph of this part gives broad powers to the Executive Officer to add or remove categories of non-storm water discharges. There should be criteria for these changes and they should be subject to review by the Regional Board if they are appealed.

Part 2. Receiving Water Limitations

The draft language of Part 2 is inconsistent with the standard receiving water limitation language specified in State Board Order No. WQ 99-05. In particular, Sections 1 and 2 are not in Order 99-05 and should be deleted.

Part 3. Storm Water Quality management Plan Implementation, Monitoring, and Reporting

- The phrase "or potentially polluted" should be deleted from Section G.1.n). The term "potentially" is broad and ambiguous. Recognizing a potential source of pollution may lead to preventive practices, but it is not possible to have legal authority to "control" potentially polluted storm water.

- The phrase "or potential contribution" should be deleted from Section G.1.m). The term "potential" is broad and ambiguous. Recognizing a potential source of pollution may lead to preventive practices, but it is not possible to have legal authority to "control" a potential contribution.

- Section I.1.d) should be rewritten as two separate sections. Industrial inspections are distinctly different from construction site inspections and will be budgeted separately.

- Sections I.1.f)-j) are unnecessary. They are all sub-components of Pubic Agency Activities.

Part 4. Special Provisions

- Section A.1.e) should be deleted. The current public information program is a solid, responsive program that does not need to be micro-managed by the Regional Board. In fact, Los Angeles County was invited to present the program to a recent National Storm Water Coordinators Conference because it is such a good program. If desirable, the current program could be modified to further target outreach programs to assist the Watershed Management Committees.

- Section A.2.a) should be revised to change the reference to "corporate heads" to "corporate management." It may not be practical to educate corporate heads, especially those not located in the region. Furthermore, education of operational staff is most effective, especially for franchised businesses.

- Section A.2.b) should be deleted. A business assistance program should be considered a local option. It may not be practical or affordable for a small jurisdiction to implement a program that a large jurisdiction is able to support.

- Section B should be deleted or completely rewritten in consultation with the Permittees. The proposed "Programs for Industrial/Commercial Inspections" greatly expand the current educational site visit requirements and appear to be an attempt to shift Regional Board inspection and enforcement responsibilities to the Permittees. Furthermore, our attorneys have confirmed our conclusion that the proposed requirements exceed the inspection requirements authorized by state or federal law (See attached letter from Richard Montevideo of the law firm of Rutan & Tucker LLP).

- Section B appears to be an outgrowth of Finding 21. However, as noted above, Finding 21 is inconsistent with the Clean Water Act and its implementing regulations. The finding goes beyond the cited regulations that refer to specifically defined industrial activities. The finding should be rewritten to remove commercial facilities and limit coverage to the defined industrial activities.

- Section B is built upon a definition of "Industrial/Commercial Facility" that is itself flawed. It is so broad that it includes home offices and sidewalk vendors. In addition, as discussed above, it is inconsistent with Finding 14.

- Section B.4 should be deleted from any rewritten Section B. BMP implementation is incorporated into SUSMP requirements. This section appears to be an attempt to require retrofitting of BMPs at all broadly defined industrial/commercial sites within the area subject to the permit. As written, the municipalities are required to implement such BMPs if they cannot legally require them to be implemented by existing industrial/commercial establishments (which they cannot). Municipalities do not have the authority to center on to private property to implement BMPS. Furthermore, the Regional Board does not have the authority to require us to do so.

- If a satisfactory inspection program consistent with federal and state law is developed, the current Section B.5 should be revised to specify an inspection frequency of 30 months to allow municipalities to establish inspection schedules that would make effective use of inspectors to inspect sites twice during the life of the permit. Furthermore, inspection burden is compounded by the overly broad definition of industrial/commercial facilities.

- If a satisfactory inspection program consistent with federal and state law is developed, the current Section B.5 should be revised to eliminate other "other commercial." The category is too broad to be useful.

- Any inspection program that may be developed pursuant to an acceptable inspection program should focus only on permittee ordinances. The references to "and this order" should be eliminated in order to avoid confusion between municipality and Regional Board responsibilities.

- Any reporting of non-compliant sites that may be required should specify waters of the United States rather than waters of the State since the proposed permit is an NPDES permit and waters of the State include ground waters not included in waters of the United States (see current Section B.7.a)).

- Any reporting of non-compliant sites that may be required should specify more realistic oral and written notification times. If inspectors are working with permittees or if non-compliance is discovered just before a weekend or holiday, the currently proposed notification times are unrealistic.

- If a satisfactory inspection program consistent with federal and state law is developed, current Section B.5.d) should be revised to specify that the Regional Board will notify Permittees of inspections that Regional Board staff has conducted within their jurisdiction. Also, the reference to "year" should be replaced by "inspection cycle."

- Putting aside the numerous legal defects and the lack of authority of the Regional Board to impose the inspection/enforcement program on the municipalities, in an effort to work with the Regional Board and assist the Board in complying with **its** inspection/enforcement obligations, some cities have initiated discussions with the Los Angeles County Public Works Department to explore the feasibility of developing a limited countywide inspection-only program of industrial facilities covered by the State's General Industrial NPDES Permit. The following is a listing of some of the significant issues that would need to be addressed in order to implement a program:

  1. The program would be limited facilities possessing a State Industrial Activity Permit.
  2. The County would be able to recover the cost of the program from fees collected from the industrial facilities by the State Board.
  3. The County, State and cities agree on the extent and nature of the inspections.
  4. The cities can choose to participate with the County's program or administer their own program.
  5. The program is implemented through an agreement or MOU that is referenced in the storm water permit.
  6. All of the program requirements will be specified in the agreement or MOU.
  7. The program is for inspection only of such industrial facilities. All enforcement action will be referred to the Regional Board, consistent with the State's General Industrial NPDES Permit.
  8. Inspection frequency will be twice during the permit period.
  9. Each inspection will include an initial inspection, and, where necessary, one follow-up inspection.
  10. Implementation of the inspection program will be the only enhancement to the Industrial/Commercial Education Program submitted by the permittees as part of the ROWD.

  The cities and the County may be willing to continue to investigate development of the program, contingent upon cooperation and participation of the Board. It is recommended that the Board staff explore the development of this proposed inspection program with the Permittees.

- Section C should be revised to eliminate the phrase "with immediate effect." Any changes to the Programs for Development Planning cannot be effective concurrently with the permit. Furthermore, the Government Code and local ordinances provide for appeal periods before new regulations become effective. The current wording could put some Permittees in instant non-compliance with the Permit.

- Section C should be revised to eliminate the terms "minimize" and "maximize" or add the qualifier "to the maximum extent practicable" in order to be consistent with the Clean Water Act. It might be best to use the defined term "control" to the maximum extent practicable.

- Section C.1.e) should be revised to eliminate the phrase " and in certain environmentally critical situations, the prohibition of bare soil." That is an impractical requirement and is tantamount to a no construction or no gardening requirement. The litigation against municipalities and the Regional Board would be costly and overwhelming.

- The requirement in Section C.2 to establish and enforce numerical criteria to control post-development peak storm runoff discharge rates in natural drainage systems is unreasonable and punitive when compared to the similar requirement in the Ventura County permit. Ventura County was given two years to accomplish essentially the same task. Since Los Angeles County and Ventura County are both within the jurisdiction of the Los Angeles Regional Water Quality Control Board, the two counties should work together to establish common methodology.

- Section C.2 should be revised to define "Upper Los Angeles River" and "Upper San Gabriel River" and to eliminate sub-section e). "Soft-bottom segments" are not natural drainage systems. The concrete walls or rip-rap linings of soft-bottomed engineered channels will result in erosion of the soft bottoms from almost any storm water discharge.

- Section C.3.b) should be changed to eliminate single-family hillside residences. Storm water quality issues associated with hillside development are more associated with construction than post-construction conditions.

- Section C.3.c should be deleted. As the State Board noted in Order WQ 2000-11, developments in environmentally sensitive areas are already subject to extensive regulation under other regulatory programs. Furthermore, the proposed new definition is still flawed (see discussion below). It is a multipart definition based on areas defined by different agencies that will lead to confusion and potential errors by municipalities. If a new, workable definition of ESAs is developed, Section C.3.c)(2) should be deleted. A ten percent alteration from the naturally occurring condition is an excessively low threshold, especially in a metropolitan region where most building sites are already not in a "naturally occurring condition." In addition, the new 2,500 square foot threshold should be deleted since there is no evidence to support its inclusion.

- Section C.4 should be revised so that both volumetric and flow-based criteria are based on the 80th percentile runoff event that was adopted by Denver as the basis for sizing storm water quality BMPs and "is considered by municipalities in this semi-arid region as cost effective for storm water quality management and is viewed as the design event that achieves MEP definition under the Clean Water Act" (Urban Runoff Quality Management, ASCE Manual and Report on Engineering Practice No. 87, page 174)

- Section C.5 should be revised. It is not practical as written. It would not be possible to implement post-construction treatment controls prior to issuing grading or building permits. Perhaps, a condition of approval could be required.

- Section C.6.a) should be revised to define one acre as 43,560 square feet.

- Section C.7.a) should be revised to substitute "have a high probability of having" for "may potentially have." The term "may potentially" is too broad; someone could argue that almost any project may potentially have an adverse impact on post-development storm water quality. In addition, four of the triggering project characteristics should be revised. Several are too broad. "Commercial or industrial waste handling or storage" could be interpreted to include every commercial trash bin. "Outdoor food handling or processing" could be interpreted to include side-walk vendors and backyard barbeques. "Outdoor animal care, confinement, or slaughter" could be interpreted to include pets in private yards. "Outdoor horticulture activities" could be interpreted to include private or community gardens.

- Section C.8 should be revised to exclude "replacement of 5,000 square feet of impervious surface area on an already developed site." This requirement goes beyond the requirements of the Standard Urban Storm Water Mitigation Plans (SUSMPs) approved by the Executive Officer on March 8, 2000 and is inconsistent with the definition in State Board Order WQ 2000-11. Both the Regional Board and the State Board focused on the creation or addition of impervious surface area. Under the staff proposed definition, a SUSMP would be required for a project that actually reduced the impervious surface area if 5,000 or more square feet were replaced.

- Section C.9.c) should be deleted. Municipalities have no authority to dictate the terms of private sales and lease agreements.

- Section C.10 should be revised to focus entirely on mitigation funding without a defined link to regional solutions. Furthermore, the Permittees should be given at least one year to develop a mitigation funding program. If the Regional Board was not able to develop a workable program during the six months since the State Board's

adoption of Order WQ 2000-11, the Permittees should not be expected to do so in four months.

- A new regional solutions section should be developed to encourage such solutions rather than limiting them as the current Section C.10 does. CPR has developed a framework for facilitating regional solutions and would appreciate an opportunity to work with the Regional Board staff and other interested parties to perfect the concept or develop an even better framework for funding and implementing regional solutions. The draft regional proposal was submitted at the workshop and is attached to this letter.

- Section C.12 should be deleted from the permit. It may be appropriate to strengthen the watershed, storm water quality, and storm water quantity considerations in municipal General Plans. However, General Plans are prepared pursuant to the schedules and other requirements of the Government Code and the guidelines prepared by the Office of Planning and Research. Regional Boards have no authority to mandate General plan amendments, and the proposed timeframe is unreasonably short. The need for General Plan amendments could be discussed in the Fact Sheet that will accompany the Permit, and the Regional and State Boards could assist the Permittees to get greater recognition of the importance of storm water quality concerns in planning law and guidelines.

- Section C.14.b) should be revised to acknowledge that the California Stormwater Quality Task Force has undertaken a project to update the California Storm Water Best management Practices Handbooks and relate the development of a technical manual for siting and design of BMPs to the completion of the new Handbooks. The consultant contract was signed on May 1, 2001. The new Handbooks are expected to be completed by September 2002. The Permittees should be given at least an additional year to complete the required new technical manual.

- Section D.b) should be revised to say "Between two and five acres" to be consistent with the model program development pursuant to the current permit.

- Section D.c) should be revised to say "Between one acre and two acres" to be consistent with the Phase II one-acre threshold and should be effective March 9, 2003 when the Phase II requirements become effective. Subsequent sections of the Permit also should be revised to reflect these categories of construction.

- Section D.2.a) should be revised by adding "to the extent feasible."

- Section D.2.g) should be revised to substitute "controlled" for "prevented."

- The statement to be signed on Local SWPPPs should be amended by the addition of "or authorized qualified designee" to recognize that persons trained in disciplines other than architecture or engineering prepare SWPPPs and to be consistent with the immediately preceding sentence.

- Section D.4.a) should be revised to substitute the phrase "prior to commencement of construction" in place of the phrase "prior to issuing a grading permit." This language

  would be consistent with language in the instructions for NOI submittal attached to the General Construction Permit.

- Section E.3.a) should be revised to incorporate the "Between two and five acres" and the "Between one acre and two acres" categories recommended for Section D.

- Section E.4.a) and b) should be deleted. They are unnecessary since Section E.4.c) ensures that municipalities continue to employ or contract with certified pesticide applicators.

- Section E.5.b) should be revised to acknowledge that Permittees have defined priority catch-basins based on maintenance history and that priority catch-basins should be cleaned when they are 40 percent full.

Part 5. Definitions

- The definition of "Discharge of a Pollutant" refers to "waters of the 'contiguous zone.'"
  "Contiguous Zone" should be defined in the Permit.

- The definition of "Environmentally Sensitive Area" should be deleted. If the Regional Board chooses to specifically address Areas of Special Biological Significance, waters designated with RARE beneficial uses, or impaired waters, they should be separately defined and addressed.

- The definition of "Industrial/Commercial Facility should be deleted. In its place a definition of "Industrial Facility" should be developed, consistent with Finding 14 and with the definitions and requirements of the Clean Water Act and Porter-Cologne.

- The last sentence in the discussion of the term "pollutant" should be deleted. As drafted, dischargers are guilty until proven innocent. That presumption is contrary to American jurisprudence.

- The definition of "Redevelopment" should be revised to delete the references to replacement. As explained above in the discussion of Section C.8, the inclusion of "replacement" is inconsistent with the requirements of the Standard Urban Storm Water Mitigation Plans (SUSMPs) approved by the Executive Officer on March 8, 2000 and with the definition of "Redevelopment" in State Board Order WQ 2000-11.

- The definition of "Runoff" should be revised to delete the reference to subsurface. The Permit is being adopted as an NPDES permit and an NPDES permit is for waters of the United States that are only surface waters.

- The definition of "storm water" is inconsistent with 40 CFR Section 122.26(b)(13) and should be revised to be identical to the definition in the federal regulations.

- The definition of "Total Maximum Daily Load (TMDL)" should be revised to recognize aerial deposition. Also, the term "non-point" used in this definition should be defined.

CPR will defer to the County of Los Angeles at this time regarding comments on the monitoring and reporting requirements. We may have later comments as these requirements are refined.

Again, the Coalition for Practical Regulation is pleased to have this opportunity to comment on the first draft of the proposed new municipal storm water permit. We are available to discuss these comments with Board staff. In fact, we would like to work with the Regional Board and other interested parties to develop a practical and workable permit. Perhaps some sort of facilitated consensus development program could be undertaken to help bring about as much consensus as possible before Board action on the new permit.

Sincerely,

Larry Forester
Mayor, Signal Hill
CPR Steering Committee

cc: CPR Steering Committee
CPR Members

Attachment: Regional Alternative

Part__. REGIONAL/SUBREGIONAL IMPLEMENTATION PROGRAM

A. The Regional Board encourages the utilization of groups of permittees and intergovernmental programs for the development and implementation of storm water programs. This is the most cost-effective use of public resources when implementing the NPDES Permit, such that the tax burden on individual property owners and the fiscal impact on existing government services will be minimized.

Intergovernmental coordination involves combining the resources of various permittees, cities, Councils of Government, the County of Los Angeles, the Flood Control District and other agencies, such as Caltrans to implement the NPDES Permit in accordance with maximum extent practicable standards.

Examples of intergovernmental programs include the improvement of regional or subregional retention basins, pump stations, storm drains inserts, storm drain clarifiers, as well as the implementation of storm water programs and other treatment facilities approved by the Executive Officer. The Board especially encourages the use of multi-purpose open space facilities to implement the NPDES Permit and regional BMP's, such as regional parks and athletic fields designed to treat storm water.

This section specifically recognizes that urban storm water may flow over many governmental jurisdictional boundaries prior to reaching waters regulated under the Clean Water Act and the Porter Cologne Act, and that storm water may pass through local and regional facilities, including storm drain pipes and retention facilities. The following regulations are designed to encourage all levels of government, from local cities, Los Angeles County, State and Federal agencies to form governmental groups to resolve storm water issues.

Regional and Subregional Implementation Programs (RSIP) provide the framework to implement the NPDES Permit and TMDL's in manner consistent with Federal, State and local regulations. Implementation of the RSIP by the per

B. Regional/Subregional Implementation Program

A Regional/Subregional Implemenation Program (RSIP) may be submitted by the intergovernmental organizations, as an alternative to separate NPDES Permit requirements or TMDL's as required of each government entitity. In order to comply with the terms of the individual NPDES Permit and TMDL's. The RSIP's will contain the following:

1. Identification of the Intergovernmental Group (IG)

The application for the RSIP shall identify the Intergovernmental Group (IG) who will be subject to the RSIP. The application shall identify the lead agency who will be responsible for coordination of the IG. The

application shall identify if the IG has any special authority, such as joint powers authority.

2. Implementation Plan Components

The application shall consist of the following components and shall be accompanied with a detailed description of the programs and facilities the IG will utilize, modify or construct in order to comply with the NPDES Permit or TMDL.

a) Administrative Component – The Implementation Program includes an administrative component describing any new ordinances, resolutions or policies and staffing necessary for implementation.

b) Program Component – The Implementation Program may include revised existing and new programs necessary for implementation.

c) Capital Improvement Program – The application may include a capital improvement program, detailing both minor and major facilities that would be constructed for implementation.

d) Time Schedule – The application shall be accompanied with a time schedule for the implementation of the various components, programs and facilities.

e) Financing Program – The application shall be accompanied with a financing program explaining how the IG intends to fund the programs and facilities. The financing program would outline any State or Federal financial assistance, new fees, taxes or assessments. The financial program must document baseline services, such as public safety and public works. The financing program shall indicate if the IG is required to impose new fees, assessment or taxes to implement the RSIP.

3. Voter Approval of Financing Program

It is recognized that a public vote may be required to impose new fees, assessments or taxes to implement the RSIP. If determined that vote is required, the application shall be accompanied by an election schedule of when the IG will schedule the new fees, taxes or assessments for a vote of the electorate. Additional State required programs, in excess of the available resources as determined by the local electorate, shall only be implemented when State or Federal funding is made available.

4. Mitigation Fees – Regional Storm Water Impact Fees

The IG may design a regional fee mechanism, to deal with waivers that are granted under the NPDES permit and applicable TMDL's, where a waiver for impracticability or a threat to ground water has been granted. The regional fee should also take into account situations where off-site fees are required due to loss of environmental habitat should on-site mitigation be required. The regional fee may also be used as a levy on new development in order to provide a funding mechanism for the

installation of regional/subregional storm water treatment facilities and other RSIP capital improvements.

Pursuant to Government Code Section 66000-66011, the IG must establish the following:

a. Identify the purpose of the fee.
b. Identify the use to which the fee is to be put (e.g. public facilities or programs must be identified).
c. Determine how there is a reasonable relationship between the fee's use and the type of project on which the fee is imposed.
d. Determine there is a reasonable relationship between the need for the program or facility and the type of project on which the fee is imposed.

The IG must also deposit, invest, account for and expend the mitigation fee pursuant to Government Code Section 66006. The IG must also make findings once each fiscal year regarding any portion of the mitigation fee remaining unexpended or uncommitted pursuant to Government Code Section 66001(d).

The IG must also refund any unexpended or uncommitted mitigation fee after five years receipt (Government Code Section 66001(e). The IG must also adopt a plan indicating on which capital improvement or program the fee will be expended (Government Code Section 66006(b).

5. RSIP Review Standards

The Executive Officer shall utilize the following standards to review and approve individual RSIP applications:

a. The RSIP significantly complies with the intent of the NPDES Permit and applicable TMDL.
b. The RSIP has incorporated to the maximum extent practicable current programs and technologies.
c. The RSIP will be implemented in manner consistent with the time periods imposed by the NDPES Permit and applicable TMDL.

6. Amendments to the RSIP

The Executive Officer may approve or disapprove of amendments to the RSIP. The IG must provide documentation that:

a. The proposed amendment will meet or exceed the objectives of the original NPDES or TMDL component, program or schedule; or
b. The fiscal burden of the original NPDES or TMDL component, program or schedule is substantially greater than the proposed amendment and does not achieve a substantially greater improvement in water quality.

The Executive Officer may eliminate any NPDES or TMDL component or program, if the IG can document that:

a. The component or program is not technically feasible and no substitute is available, or
b. The cost of implementation outweighs the benefits to the receiving waters.

7. Administrative Review Process

The administrative review process formalizes the procedures for review and acceptance of the RSIP and any amendments to an approved RSIP. In addition, it provides a method to resolve differences in interpretation of the RSIP components between the Executive Officer, the Regional Board and the IG.

RSIP Application and Amendments to an Approved RSIP

a. Determine Application Complete – The Executive Officer shall notify the IG in writing within 30 days after the filing of the RSIP if the application has been determined to be complete. If determined to be incomplete, the letter shall outline the items that the IG will need to supply in order to complete the application.
b. Resubmittal of the Application – The Executive Officer shall notify the IG within 30 days after resubmittal of the application. The 30-day review period shall apply to all resubmittals.
c. Approval or Disapproval of the RSIP – The Executive Officer shall have 60 days in which to either approve or disapprove of the RSIP. The IG shall be notified in writing of the reasons for either approval or disapproval.
d. Appeals to the Regional Board – The IG shall have 30 days from receipt of the Executive Officer's letter to appeal the action of the Executive Officer. The IG shall notify the Board in writing of the reasons for the appeal and any action that the IG wants the Board to consider.
e. Appeal Hearing – The Executive Officer shall set the appeal for a Board public hearing item, within 60 days receipt of the written appeal from the IG. The appeal hearing date may be extended upon mutual agreement between the Executive Officer and the IG.
f. Interpretations of the RSIP Components – The IG may file a written appeal to any determination made by the Executive Officer in implementing the RSIP. The Executive Officer shall set public hearing regarding the Board under Section Five, Subsection B, 7e. above.

8. RSIP Enforcement/ Legal Indemnity

Violations of any provision of an approved RSIP shall be subject to the provisions of Part 6, Section O, Standard Provisions of this Permit. In

order to encourage and to provide an incentive to cost-effective regional/subregional programs, the State will provide legal indemnity to the IG, when civil litigation arises in the good faith implementation of an approved RSIP.

Coalition for Practical Regulation

Arcadia
Artesia
Bellflower
Bell Gardens
Burbank
Cerritos
Commerce
Compton
Diamond Bar
Downey
Hawaiian Gardens
Industry
Irwindale
La Canada~Flintridge
La Mirada
Lakewood
Lawndale
Monrovia
Montebello
Norwalk
Palos Verdes Estates
Paramount
Pico Rivera
Pomona
Rancho Palos Verdes
Rosemead
Santa Fe Springs
San Gabriel
Sierra Madre
Signal Hill
South Gate
Vernon
Walnut
Whittier

Proposed Shift of the State's Storm Water Inspection and Enforcement Program to the Cities

What is the State Proposing?

The Draft NPDES Permit would shift the responsibility for industrial and commercial storm water inspections and enforcement programs from the State to the cities. The State was required in 1989 to develop a program for industrial and commercial storm water permits. Fees collected by the State range from $250 to $10,000 per storm water permit. The State is currently responsible for reviewin plans, issuance of permits, inspections and legal enforcement, including levying fines and prosecuting violators.

What are commercial and industrial sites?

Commercial sites include automotive related businesses, retail gas outlets, auto body shops, motor vehicle parts and accessories facilities. Commercial sites include all restaurants. The commercial inspection program is actually "open ended", in that the Executive Officer can add, at any time, "other commercial facilities that contribute or potentially contribute" to storm water pollution (Page 26, Section 3).

Industrial sites are permitted and inspected by the State under the Phase I NPDES Permit. Sites include refineries and other heavy industries. Under the inspection and enforcement program, cities will be required to inspect industrial sites and designate appropriate BMP's (Best Management Practices) for businesses. (Page 27, Section 4

Cities are being ordered to become the "storm water police"

The permit states that cities must have the ability to enter onto private property to inspect businesses for compliance with State approved storm water plans. The permit states that cities must possess the "ability to carry out all inspection, surveillance and monitoring." Cities will need to determine if non-compliant sites create an "adverse

2175 Cherry Avenue ♦ Signal Hill, CA 90806 ♦ (562) 989-7302 ♦ (562) 989-7393 Fax

impact or nuisance". The criteria or testing procedures to determine whether the site is a nuisance are undefined. (Page 29, Section 7) The cities must also "possess the authority to enter, sample, inspect, review and copy records, and require regular reports" from local businesses. (Page 19, Section G1(n).

Cities will be inspecting sites, even if there is no evidence of non-storm water discharges into the local storm drains.

The Permit requires that commercial and industrial facilities be investigated, "regardless of exposure or non-exposure" of storm water pollution. Cities will be required to establish inspection frequencies with the Regional Board. The permit calls for at least one inspection within the first 24 months for each commercial and industrial site. The permit has a minimum of not less that two inspections for each site during the five-year life of the NPDES permit. (Page 27-28, Section 5)

Inspectors will be required to provide oral notification of a "adverse impact or nuisance" to the Board within 24 hours. Inspectors must provide oral notification of "non-compliance" sites within three days. The inspectors are to follow up oral reports with written reports, in the next five days. Cities are then to enforce the violations through "ordinances or other regulatory mechanisms", including "sanctions to ensure compliance". (Page 28, Sections 6 & 7).

What are the major problems with shifting the inspection and enforcement program to the cities?

Shifting of the inspection and enforcement responsibility to the cities presents several problems:

- No Legal Basis to Mandate Local Inspections & Enforcement - The State entered into an MOA (Memorandum of Agreement) with the USEPA in 1989 to administer the NPDES Program. This included the requirement that the State develop storm water permits and conduct storm water inspections for specified Industrial and Commercial facilities.

- No Legal Authority to Enter Businesses – Cities do not have the legal authority to enter onto private property to enforce a State storm water permit. Cities have to obtain search warrants to enter private property. Case law limits cities to pursuing code enforcement based on the rule of what can be observed from the city right-of-way.

- Unfunded Inspections – The State is proposing ***no funding*** to the cities for the costs of the new inspection program. The business community would object to the additional levy of a city storm water fees, since they are already paying fees to the State. Cities will be required to fund new staffing for inspectors or contract with consultant inspection firms.

- Unfunded Legal Enforcement – Cities must rely on the cumbersome municipal code violation process, which includes filing of charges with city prosecutors or the district attorney. Violations could then end up in expensive court cases. The State is proposing ***no funding*** for prosecution and court expenses.

- Unfunded Surveillance, Monitoring and Health Risk Assessments – Most cities do not have the resources or expertise to complete the health risk assessments and the monitoring required to determine if an "adverse impact or nuisance" exists in storm water. Consultant expertise will most likely be required. Cities do not have storm water "surveillance" programs for local businesses. The State proposes ***no funding*** for the surveillance, monitoring or health risk assessments.

- Unknown Amount and Frequency of Inspections – Cities are not aware of the number of State issued Industrial/Commercial permits in their jurisdiction. The number of inspections is open-ended. The Executive Officer may add sites that "contribute or potentially contribute" to storm water pollution during the five-year life of the NPDES Permit.

- Third Party Litigation – By placing the inspection and enforcement requirement into the NPDES Permit, cities will be exposed to third party litigation and State fines. Cities would be subjected to fines and litigation, if inspection and enforcement programs were not considered "sufficient" by the Board or any individual or third party.

Conclusion

The State industrial and commercial inspection program is contained in a MOA between the State and USEPA. The Coalition is opposed to this shift of inspection and enforcement responsibility, since the NPDES Permit has not addressed the following issues:

- There is no legal authority in the Clean Water Act or in the Porter-Cologne Act that requires the Cities to take over the inspection and enforcement of industrial and commercial storm water permits.

- The cities are being asked to inspect and enforce State permits they have neither reviewed, nor issued.

- The inspection and enforcement program will be very expensive to revenue starved cities. The cities do not have the resources for surveillance, water testing and other requirements. This is another example of an unfunded State mandate on the cities.

- Placing the inspection and enforcement program into the NPDES Permit will subject the cities to Board fines and third-party litigation, even when a City attempts to implement the program in "good faith".

Executive Advisory Committee
Stormwater Program - Los Angeles County

2001 APR 30 P 1:58

April 26, 2001

Mr. H. David Nahai, Chair
California Regional Water Quality
Control Board - Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, CA 90013-1105

Dear Mr. Nahai:

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
MUNICIPAL STORM WATER PERMIT FOR LOS ANGELES COUNTY

On February 1, 2001, the Los Angeles County Permitees submitted a Report of Waste Discharge (ROWD) to the Regional Board in accordance with the requirements of our National Pollutant Discharge Elimination System (NPDES) Municipal Storm Water Permit. The ROWD was the subject of many months' effort on the part of the Permitees. We believe the ROWD, which was the formal application for the next phase of the NPDES Storm Water Permit, to be a well-founded document. It incorporates all of the model programs and watershed management plans developed under the current Permit, and expanded on the implementation and further development of these plans during the next phase of the Municipal Storm Water Permit. Urban runoff water quality is a critical issue, and the permit application we submitted goes a long way toward improving storm water quality.

We fully anticipated working with Regional Board staff on fine tuning our application to come up with a workable permit that would enable us to continue our efforts to improve urban runoff water quality. To this end, a subcommittee of the Executive Advisory Committee was formed and met with Regional Board staff to address issues where a difference of opinion exists as to what would be the best approach to achieve this goal. We felt that open negotiations would be in the best interests of all parties. However, we were surprised when your Executive Officer informed us on March 14 that the discussions between Regional Board staff and the Permitees' subcommittee were just "discussions" to better familiarize Regional Board staff with key issues concerning permit implementation

from the Permitees' point of view, and stated that it is not the Regional Board's intent to negotiate the next Municipal Stormwater Permit. We believe that this is an unfortunate position. The result is a draft permit issued on April 13 which contains many requirements that we believe are inappropriate and without legal merit. The Permitees would like to work with you to negotiate a permit that makes sense and is in the best interests of Los Angeles County.

The draft permit sets numeric water quality criteria for urban runoff and requires the Permitees to control the contribution or potential contribution of pollutants in stormwater. The draft permit assumes that the storm drain system can be operated as a closed system, and that treatment processes can be installed to effectively meet numerical water quality criteria. However, a storm drain system is neither designed nor operated like a sanitary sewer system. The storm drain system is an open system, not a closed system such as a sewer system. Thus, the Permittees do not have the level of control assumed in the draft permit over material entering a storm drain system.

The draft permit transfers to Permitees responsibilities that clearly belong to the State, such as inspection of industrial facilities and construction sites permitted by the State. This shift of responsibility is statutorily unworkable and patently unfair. The State collects fees and issues NPDES permits for these activities and now is asking the cities to step in and take over the State's inspections and enforcement responsibilities. The Permittees are not technically equipped and do not have the financial resources to inspect and enforce the State permits.

There are many other areas where we have significant differences of opinion with regard to the language and the requirements in the draft permit. We ask that you direct staff to negotiate with the Permitees in good faith to develop a Permit that we can all embrace and that will truly cleanup urban runoff. Earnest negotiations that recognize the financial and legal limitations of the Permitees, and are clear and consistent with the Clean Water Act and the Porter Cologne Act, are in your and our best interest. There is no purpose served in developing a permit that we do not believe is proper and end up in an adversarial situation that may result in litigation and the diversion of limited resources in a manner not beneficial to anyone.

A negotiated permit will avoid having the Permittees appearing before you on July 26 when your Board considers adopting the permit with all of our objections. At that point, it will be very difficult for you to consider and address our concerns since you will be facing time constraints to adopt a permit.

We trust that we will receive a favorable response. Thank you for your consideration.

Sincerely,

Des: Alvarez
Chair
Executive Advisory Committee

DA:sv
WM-9\A:EAC_NPDESLETTER.WPD

cc: All Permittees
California Regional Water Quality Control Board (Dennis A. Dickerson)
Los Angeles Regional Water Quality Control Board Members
State Water Resources Control Board Members

Executive Advisory Committee
Stormwater Program - Los Angeles County

May 16, 2001

Mr. Dennis A. Dickerson, Executive Officer
California Regional Water Quality
Control Board - Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013-1105

Dear Mr. Dickerson:

APRIL 13, 2001, "DRAFT WASTE DISCHARGE REQUIREMENTS FOR MUNICIPAL STORMWATER AND URBAN RUNOFF DISCHARGES WITHIN THE COUNTY OF LOS ANGELES AND THE INCORPORATED CITIES, EXCEPT FOR THE CITIES OF LONG BEACH AND SANTA CLARITA"

The Executive Advisory Committee has reviewed the April 13, 2001, "Draft Waste Discharge Requirements for Municipal Stormwater and Urban Runoff Discharges Within the County of Los Angeles and the Incorporated Cities, except for the Cities of Long Beach and . As you are aware, the Los Angeles County Permittees submitted a Report of Waste Discharge (ROWD) and to the Regional Board on February 1, 2001. We believe that our ROWD, as submitted, provided a sound basis for the issuance of the new Permit incorporating all of the Model Programs and watershed management plans developed under the current Permit, and expanding on the implementation of these plans.

We appreciate that the April 13 Draft Permit incorporates many of the proposals in the ROWD. However, the April 13 Draft Permit also contains many requirements with which we do not concur. The Los Angeles County's Permittees would like to take this opportunity to request that the Regional Board strictly adhere to Section 402 (P) (3) of the Federal Clean Water Act which clearly establishes that the standard compliance for municipal stormwater discharge is the reduction of stormwater pollutants to the maximum extent practicable (MEP).

The April 13 Draft Permit does not adhere to this requirement, but instead institutes unreasonable, non-practicable numerical water quality limitations. This includes the automatic imposition of water quality standards and Total Maximum Daily Loads within the Draft Permit. These requirements go beyond the requirement to reduce storm water pollutants to the maximum extent practicable and fail to address the fiscal limitations faced by the County and Cities and the fiscal responsibility standards set forth in the Clean Water Act.

The Clean Water Act establishes the "maximum extent practicable" as the standard for municipal storm water discharges. Congress recognized that traditional end of pipe numerical standards applied to waste water treatment plants and industrial process waste waters were not practical for municipal storm water systems as they collect urban runoff and storm water runoff from a wide variety of non-point sources. The MEP standard prescribes the use of Best Management Practices that are technically and financially achievable. This is a critical requirement for municipalities

The responsibilities of the Regional Board, County, and the Cities under the permit need clarification. The permit should clearly delineate the responsibilities of the individual Permittee vis-à-vis the Principal Permittee, and the Regional Board should also clearly identify its role. In the Draft Permit, it appears that the Board intends to retain enforcement authority while ultimately requiring that Permittees be responsible for any corrections and or violations in the Permit.

The Draft Permit fails to comply with the requirements of the Clean Water Act as it is not based on quantitative data, and as the management programs in the Draft Permit have not been developed based on such quantitative data and formulated to identify and thereafter address the types and sources of pollutants in the affected receiving waters. The Draft Permit was not developed based on data showing the pollutants of concern, and the sources of those pollutants.

Economic considerations were not taken into account as required by State and Federal law in developing the Permit. The Water Board, under both State and Federal law, is required to take a balanced approach to regulating water quality—this means taking into account economic considerations in issuing its permits. No cost/benefit analysis has been conducted in developing the Draft Permit.

The Draft Permit improperly seeks to change the scope of CEQA by requiring the adoption of an Ordinance to transform ministerial projects into discretionary projects.

The Development Planning (SUSMP) requirements in the Permit are in conflict with State Board Order No. 2000-11, and contravene other legal prohibitions and requirements.

The Draft Permit seeks to impose "waste discharge requirements" that contravene the requirements of California Water Code Sections 13263 and 13241, by ignoring housing needs in the region and economic considerations.

The Draft Permit improperly attempts to amend the statutory and regulatory requirements of CEQA, in violation of CEQA and the requirements of the Administrative Procedures Act.

The Draft Permit improperly invades the local land use authority of municipalities, and the State regulatory and legislative process, by requiring amendments to the Cities' General Plans without following State law.

The Draft Permit seeks to impose an order, rule, or standard of general application, again without complying with the requirements of the Administrative Procedures Act.

The Draft Permit fails to include a finding of consistency with the Area-Wide Waste Treatment Management Plan, a finding the Clean Water Act expressly requires before the subject NPDES Permit can be issued (33 U.S.C. § 1288 (e)), and a finding required under State Law (Water Code § 13225 (h)).

The Draft Permit fails to include appropriate "safe harbor" language particularly for alleged exceedences of water quality objectives; and rather than acting as a "permit" to allow for "discharges" of pollutants in accordance with the Clean Water Act and to "control" pollutants "to the maximum extent practicable," the Draft Permit is open-ended, generally prohibiting all discharges from the MS4 that cause or contribute to a violation of water quality standards or water quality objectives.

The Draft Permit improperly flip-flops the burden of proof on to Cities, and requires the Cities to prove the elimination of a discharge to the maximum extent practicable through compliance with BMPs.

The Draft Permit contains monitoring requirements that are excessive and unnecessary. The cost of implementing the monitoring program in the Draft Permit far outweighs any benefits that will be gained from the data collection. The Regional Board has failed to provide adequate justification for the extensive data collection called for in the Draft Permit. Specific comments on language and requirements of the Draft Permit are enclosed.

The EAC would refer you to our April 26, 2001, letter to Mr. H. David Nahai and request that you reconsider your position on setting a process whereby we can come to a mutual resolution on the areas where we have differences of opinion. In the past, Permittee comments that were contrary to Regional Board staff views were rejected without compelling reason, ignoring the Permittees' legitimate concerns for cost and the reasonableness of Permit requirements.

We appreciate the opportunity to submit these comments and look forward to working cooperatively with you in developing the second draft of the Permit.

Sincerely,

Desi Alvarez
Chairman
Executive Advisory Committee

DA:sv
WM-9\A /EAC_LTR_APRIL 13 WPD

Enc.

cc: All Permittees
Chief Administrative Office (John Lounsbery)
State Water Resources Control Board

EAC SUMMARY OF COMMENTS IN RE: PROPOSED DRAFT FOR NEW LOS ANGELES COUNTY MUNICIPAL NPDES PERMIT

1. Findings (changes indicated in bold)	**Finding #10 (add language)** • The Regional Board has reviewed the ROWD and has determined it to be complete under the reapplication policy of MS4s issued by the USEPA (61 *Fed. Reg.* 41697). The Regional Board finds that the Permittee's proposed Storm Water Management Plan is acceptable **and when fully implemented will be consistent with the statutory standard of Maximum Extent Practicable (MEP) and in compliance with the Federal Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act.** **Finding #21 (delete language)** • US EPA regulations at 40 CFR 122.26(d)(2)(iv)(A) and 40 CFR 122.26(d)(2)(iv)(C) require that Permittees implement a program to monitor and control pollutants in discharges to the municipal system from industrial and commercial facilities that contribute a substantial pollutant load to the MS4. The regulations require that Permittees establish priorities and procedures for inspection of industrial facilities. ~~**This permit consistent with the regulations incorporates a requirement that Permittees conduct an industrial/ commercial inspection program to control pollutants in storm water discharges from industrial facilities.**~~ **Finding #41 (reconsider intent)** • Suggests that permittees should adopt ordinances enabling to make ministerial projects discretionary ones, thereby facilitating CEQA evaluations of new development/redevelopment projects for storm water mitigation measures. This is an unrealistic requirement. If a development/redevelopment project were required by municipal ordinance to implement storm water mitigation measures, there would be no reason to subject them to discretionary review. Municipalities – such Santa Monica being the obvious example – are at liberty to impose more stringent storm water management standards if they wish. Further, this finding seems to be at odds with the draft municipal permit's intention of eliminating discretionary approval from Standard Urban Storm Water Mitigation Plan (SUSMP) requirements. This raises the question: what development/redevelopment projects would require CEQA review or conditional use approval? (Note: Regional Board storm water staff should consult with planning unit or with in-house legal counsel on this).
2. Discharge Prohibitions - Part 1	• Provide all exempted non-storm discharges, including street wash water and potable water

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2. Discharge Prohibitions - Part 1 (cont.)	discharge as conferred upon municipalities under 40 CFR 122.26 and restated in the Phase II rule, as it relates to illicit discharges. Also add, as an exempted discharge: **(1) wash water runoff of blood and other human tissues from the cleaning of accident sites or accidental spills; (2) any other non-storm discharge that enters a detention/retention basin or spreading ground, provided that it does not have an adverse impact on a beneficial use of a receiving water.** • Receiving Water Limitations text should be revised as follows: ~~**1. Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited.**~~ ~~**2. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance.**~~ The Permittee shall comply with the permit through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the Storm Water Quality Management Plan (SQMP) and its components and other requirements of this permit including any modifications. The SQMP and its components shall be designed to achieve compliance with receiving water limitations. If exceedances of applicable water quality objectives or applicable water quality standards (collectively, water quality standards) persist, notwithstanding implementation of the SQMP and its components and other requirements of this permit, the Permittee shall assure compliance. **(Note: Other permittees have suggested additional language to define more clearly this provision. Once the "essence" of the requirement is determined, specifics can be dealt with later).**
3. Water Management Committee – Part 3.C	• Concern has been expressed by the City of Los Angeles about the manner in which WMC voting authority is assigned. This is an issue that should be resolved among the permittees.
4. Legal Authority – Part 3.G	• This section differs from the legal authority section of the Ventura Municipal NPDES permit, in that it is used to contain discharge prohibitions as well. The legal authority section should be restricted to stating that each permittee should have adequate legal authority to comply with permit requirements through ordinance, contract, or other means per 40 CFR 122.26. This should be done in the interest of consistency with other permits.
5. Storm Water Management Program	• The principal permittee, with the concurrence of the other permittees, would like the following

Budget (Part 3.I) 5. Storm Water Management Program Budget - Part 3.I (cont.)	cost items removed from annual reporting: **(a) operations and maintenance; (b) municipal street sweeping; (c) fleet and public agency facilties; (d) landscape and recreational facilities; and (e) capital costs**. None of these cost items would be of use to the regional board in evaluating permittee compliance efforts. For example, if a permittee meets the minimum requirement for street sweeping, the cost of that activity should not be an issue.
6. Public Information and Participation I– Part 4.A.1d	• Proposes that permittees provide unified school districts within their jurisdictions materials, live presentations, brochures, and other media necessary to storm water-educate a minimum of 50% of all school children (K-12 to 12), every 2 years. Currently, this responsibility is performed by the principal permittee. It should remain that way.
7. Public Information and Participation – Part 4.2.b	• Adds a Business Assistance Program (BAP), a requirement that would incur an added cost to permittees by (a) enlarging the scope of regulation from gas stations, automotive repair facilities, and restaurants to a broad category of "small businesses," and (b) requiring the additional distribution of public education and BMPs materials, telephone consultation, and on-site technical assistance (thereby expanding the educational site visit program. Most permittees are opposed to this requirement.
8. Programs for Industrial/Commercial Inspections – Part 4.2.B	• Transfers, unilaterally, the responsibility for inspecting GIASWP-subject industrial facilities from the regional board to the permittees without compensation. It also proposes to enlarge the definition of "commercial" to include businesses other than gas stations, auto repair, and restaurants -- without any justification. Most permittees are opposed to this proposed requirement.
9. Programs for Development Planning – Part 4.2.C.1	• Refers to "priority planning" (a carry-over from the current permit), but does not explain which development/redevelopment projects would be subject. **(Note: The SUSMP was intended to provide guidelines for determining priority projects (viz., through the discretionary approval process), but regional board staff has removed this provision from the permit. How will, therefore, priority projects be determined here and for what project types?)** • Eliminates Maximum Extent Practicable (MEP) qualifiers that exist under the current municipal NPDES permit. They should not be taken out.
10. Programs for Development Planning – Part 4.2.C.2	• Establishes "peak flow" criteria to meet the post-development runoff discharge requirement , to be developed 90 days from permit adoption. The principal permittee has indicated that it would like to extend the completion date to 2 years from permit adoption. Other permittees agree.

11. Programs for Development Planning – Part 4.2.C.5	• Eliminates discretionary approval as a criterion for determining SUSMP-project applicability. Except for the principal permittee, most permittees are opposed to this revised requirement.
12. Programs for Development Planning – Part 4.2.C.8	• Revises the SUSMP requirement for redevelopment projects to include "replacement" of 5,000 f^2 of impervious surface -- instead of only creating or adding it, thereby making this requirement more stringent than it is now. There is no justification for this.
13. Programs for Development Planning – Part 4.2.C.?	• Per the State Water Resources Board recommendation to include regional solutions in the SUSMP assessment process, add the following provision after "10. Mitigation Funding:" Regional Storm Water Mitigation Program A Permittee or Permittee group may apply to the Regional Board for approval of a regional storm water mitigation program. The Executive Officer in the exercise of his discretion shall approve such a regional program if he determines that it is likely to result in equal or greater water quality benefit than project-by-project mitigation, as described above. Permittees and project proponents that participate in any approved regional storm water mitigation program shall in so doing satisfy the requirement for the application of the numerical design criteria.
14. Programs for Development Planning – Part 4.2.C.11	• Pertains to California Environmental Quality Act (CEQA) relative to projects, but does not provide clarity as to which projects are to be subject and to what extent. Further, this requirement seems to duplicate the SUSMP – which was initially intended to meet the CEQA requirement by using discretionary approval to determine priority projects. Restoring discretionary approval to the SUSMP should correct this problem.
15. Programs for Development Planning – Part 4.2.C.12	• Requires permittees to update general plans with storm water quality elements 540 days from the permit adoption date. The current permit requires incorporating this element only when general plans are updated. In either case, updating general plans is unnecessary because development planning and the SUSMP accomplishes the same purpose. The requirement, therefore, should be eliminated.
16. Programs for Construction Sites – Part 4.D.1	• Adds the requirement of providing public education for contractors engaged in 1 acre (soil disturbing) construction projects. Includes distributing public education materials during community meetings, workshops, pre-constructions, and inspections. Requirement is unnecessary because information regarding construction projects (requirements and BMPs) is provided over-the-counter and enforced by inspections.
17. Programs for Construction Sites – Part	Transfers, unilaterally, the responsibility for inspecting GCASWP-subject construction sites (5 acres

4.D.2	from the regional board to the permittees without compensation.
18. Public Agency (Part 4.E.5.a)	• Proposes to increase the frequency of street sweeping to at least 4 times per month "in areas generating high volumes of trash and "an average not less the twice per month in areas that generate moderate volumes of trash on traffic collector streets and residential areas." The current permit calls for a minimum of sweeping once a month. Street sweeping is essentially a trash-reducing BMP and, therefore, is unnecessary for Ballona Creek and Los Angeles River watershed-situated cities. Further, it does not give permittees the option of resorting to more cost effective trash reducing BMPs.
19. Public Agency (Part 4.E.5.b)	• Proposes to increase the frequency of priority catch basin clean-outs (40% full) from once a year, just prior to the wet season (October 1 to April 30), to twice a year, from May 1 to September 30. Requirement would incur a significant added cost while doing little to reduce the transport of trash to receiving waters during season.
20. Public Agency (Part 4.E.5.c)	• Proposes permit proposes to increase the frequency of parking lot cleanings from once a month to twice a month. Thus, the scope of this requirement is enlarged to include every municipal parking lot, regardless of size, and increases the cleaning and inspection frequency from once a month to twice a month. The justification for making this requirement more stringent is not clear.
21. Various Program Provisions	• Proposes that permittees implement revised programs (construction, development planning, etc.) within 180 days after permit adoption. This is not enough time because permittees need to budget new costs at least one or two years in advance.
22. Administrative Review (no reference)	• The proposed permit lacks the "notice to meet and confer" provision contained in the existing permit. This provision is intended to, among other things, resolve compliance issues prior to the regional board taking enforcement action. Most compliance issues -- as recently demonstrated by the Notices of Violations issued by the regional board to several municipal permittees -- are the result of misinterpretation or misunderstanding on the part of regional board staff, especially new staff. The meet and confer provision is intended to allow the resolution of disagreements arising out of misinterpretation or misunderstanding before issuing NOVs -- in itself an enforcement action. Since it is likely that the draft permit will contain provisions that are open to interpretation, it makes sense to retain the meet and confer provision.
23. Various Legal Comments	• See legal comments in re: the draft permit prepared by Mr. Rufus Young, Esq., Burke, Williams, and Soresen, directed to Mr. Dennis Dickerson, dated May 14, 2001.

24. Watershed Management Area Plan	• Several permittees note the absence of the Watershed Management Area Plan (WMAP) in the draft permit. Is this is an accidental omission? Is there a mechanism in the draft permit that it is intended to replace the WMAP? There is also a reference to the creation of sub-watersheds? How this is to be achieved? More discussion on this subject is needed.
25. Monitoring Program Requirements (I)	• EAC agrees with the principal permittee's concerns regarding the proposed monitoring and reporting program.

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May 16, 2001

VIA FACSIMILE AND U.S. MAIL

Dr. Xavier Swamikannu
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013

2001 MAY 17 A 11:06

RECEIVED

Re: April 13, 2001 Draft Waste Discharge Requirements
For Discharge Of Storm Water In Los Angeles County
(NPDES No. CAS614001)

Dear Dr. Swamikannu:

We have received and have reviewed the Regional Water Quality Control Board's April 13, 2001 Draft "Waste Discharge Requirements for Municipal Storm Water Discharges Within the County of Los Angeles" (the "Draft Permit"). We have been asked by the Cities of Agoura Hills, Carson, Artesia, Beverly Hills, Hidden Hills, Norwalk, La Mirada, Monrovia, Rancho Palos Verdes, San Marino, San Fernando and Westlake Village to submit comments to the Draft Permit on their behalf. Some of these cities will also be submitting their own separate comments.

We have reviewed and carefully considered the comments filed by the County of Los Angeles Department of Public Works on behalf of the Executive Advisory Committee (the "EAC"). For the most part, we agree with the comments and changes suggested by the EAC.and other cities. For that reason, we have not attempted to duplicate each of the changes that the EAC has suggested. Instead, we have attached a list of additional suggested modifications and comments.

We appreciate the time that you and the Regional Board Staff have taken to meet with us to consider and discuss our concerns regarding the Draft Permit and to try to address the concerns of the Permittee cities, while trying to balance the legitimate concerns of the environmental groups that have also been involved in the process. While a number of significant and fundamental policy issues regarding the scope and cost of the Storm Water Management Program prescribed by the Draft Permit have not been completely resolved, we want to continue to work with all stakeholders to accommodate their respective concerns and agree on a permit that makes substantial progress in reducing pollution in and to Southern California water bodies.

The cities that we represent are certainly aware of the problems associated with storm water pollution. Their residents and businesses all share a common desire to preserve and enhance the water quality of the ocean and our water bodies. However, individual cities' fiscal and administrative resources for implementing storm water programs are limited. Of all the governmental agencies in California involved in this effort, the many small cities that we represent are probably the least suited to bear the full brunt of the responsibility for controlling storm water pollution, as the Draft Permit seems to require. Many of the remaining issues are not simply matters of semantics, but rather questions of how hundred of millions of dollars will be spent by cities in Los Angeles County to solve urban runoff problems. These are not just questions of "unfunded mandates," but rather how local agencies can best direct their efforts and apply their limited financial resources in an effective manner.

We have previously raised a number of questions regarding the legal implications of the process by which the Draft Permit was developed. We have appreciated the response provided by Board's counsel to these concerns and have carefully considered them. However, we continue to believe that the Draft Permit, and the process which generated it, does not comply with applicable principles of California administrative law.

Beyond the questions about the specific wording of the Draft Permit, a number of larger issues need to be addressed. One of the biggest problems which the Board staff and the representatives of the Permittees have faced in this process has been the lack of any established, clearly-defined written policies, guidelines or regulations by the State Board, setting forth the specific elements that must be included in a municipal stormwater permit issued by the Regional Board. We have raised this issue before. Although the State Board has adopted very general regulations for the issuance of waste discharge requirements in 23 C.C.R. §§2200, et seq., those regulations still do not directly address the specific components of a municipal stormwater NPDES permit.

Similarly, although the United States Environmental Protection Agency's regulations contained in 40 CFR Section 122.26 address the requirements for a permit application, those regulations do not set forth very specific requirements for the contents of a municipal stormwater NPDES permit. (See, for example, 40 CFR Section 122.41) As a result, the Draft Permit has been developed without compliance with California's Administrative Procedure Act. California Government Code §§11340, et seq. (the "APA").

While the issuance of individual waste discharge requirements may not be subject to the provisions of the APA (See, Government Code §11352(b)), the standards, objectives and guidelines which dictate the content of those requirements have to be formally adopted in accordance with the APA. (Government Code §11352(b).) California law does not permit either the State Water Resources Control Board or any of the Regional Water Quality Boards to develop and impose requirements of general application in such a manner: like any other state agency, the Board is required to first formally establish its objectives, guidelines and requirements through formal rulemaking in compliance with the APA. (Government Code §11340.5(a).)

The principle underlying the APA's requirements is that state agencies are not allowed to adopt or enforce unwritten laws, regulations or policies. The APA prohibits state agencies from issuing, utilizing enforcing or attempting to enforce any guideline, criterion, bulletin, manual, instruction, order, standard of general application, or other rule which is a "regulation", as defined in

Government Code §11342(g), unless the rule has been adopted as a formal regulation. Government Code §11340.5. Rulemaking is required whenever an administrative agency creates a new rule for future application, as opposed to applying an existing rule to existing facts. A "regulation" is defined as "every rule, regulation, order, or standard of general application ... adopted by a state agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure, except one which relates only to the internal management of the state agency." Government Code §11342(b). "House rules" of an agency, promulgated without public notice or an opportunity to be heard, or filing with the Secretary of State, and publication in the California Code of Regulations, are prohibited.

Government Code §11353(b)(1) specifically provides that "any policy, plan, or guidelines, or any revisions thereof, the State Water Resources Control Board has adopted or that a court determines is subject to this part, after June 1, 1992, shall be submitted to the office [the Office of Administrative Law]." Our courts have held, and the Board has agreed, that water quality control programs are subject to the Administrative Procedure Act. See, State Water Resources Control Board v. Office of Administrative Law, 12 Cal.App.4th 697 (1993). In that case, the court concluded that the regulatory matters contained in water quality control plans were actually regulations. Those regulations are neither expressly nor impliedly exempt from the provisions of the Administrative Procedure Act. On that basis, the Court invalidated a water quality control plan. (12 Cal.App.4th at 706) In doing so, the court held that "... if it looks like a regulation, reads like a regulation, and acts like a regulation, it will be treated as a regulation whether or not the agency in question so labelled it." (12 Cal.App.4th at 703) The various procedural steps followed for issuing waste discharge requirements contained in 23 C.C.R. §2200, et seq. are not a substitute for this process.

Both the Regional Board as well as the State Board expressly acknowledged that they are attempting to achieve statewide consistency with respect to municipal stormwater permits. For that reason, the Draft Permit is nearly identical to the reason permit issued for Ventura County which, in turn, is based upon the permit issued to the City of Long Beach. While we can appreciate the desire for consistency, by definition, in order to achieve that consistency, the Regional Board is effectively engaging in rulemaking. However, no notice of rulemaking was ever issued, nor was any regulatory package submitted to the OAL for approval.

The procedural requirements of the APA serve a very important function of ensuring that the policy, cost and scientific issues raised by a regulatory initiative, such as this, are fully considered. Before adopting a regulation, an agency is required by Government Code § 11346.2 to consider and provide a full statement of the reasons for the regulation, which includes a discussion of the specific purpose of the regulation, "an identification of each technical, theoretical, and empirical study, report, or similar document, if any, upon which the agency relies in proposing the adoption, amendment, or repeal of a regulation...", and "...the alternatives to the regulation considered by the agency and the agency's reasons for rejecting those alternatives...", among other things. That section also allows the Board to

> "... adopt regulations different from federal regulations contained in the Code of Federal Regulations addressing the same issues upon a finding of one or more of the following justifications:

(A) The differing state regulations are authorized by law.

(B) The cost of differing state regulations is justified by the benefit to human health, public safety, public welfare, or the environment."

In this case, the Board believes that it is only carrying out federal mandates. Under such circumstances, Government Code § 11346.2(c) requires

" (c) ... However, the agency shall comply fully with this chapter with respect to any provisions in the regulation that the agency proposes to adopt or amend that are different from the corresponding provisions of the federal regulation. "

(See, also, Government Code § 11346.5(a)(3)(A).)

Most importantly, Government Code § 11346.5(a) requires the agency to make:

"(5) A determination as to whether the regulation imposes a mandate on local agencies or school districts and, if so, whether the mandate requires state reimbursement pursuant to Part 7 (commencing with Section 17500) of Division 4.

(6) An estimate, prepared in accordance with instructions adopted by the Department of Finance, of the cost or savings to any state agency, the cost to any local agency or school district that is required to be reimbursed under Part 7 (commencing with Section 17500) of Division 4, other nondiscretionary cost or savings imposed on local agencies, and the cost or savings in federal funding to the state. For purposes of this paragraph , "cost or savings" means additional costs or savings, both direct and indirect, that a public agency necessarily incurs in reasonable compliance with regulations."

Government Code § 11346.3(a) also requires the agency to "assess the potential for adverse economic impact on California business enterprises and individuals, avoiding the imposition of unnecessary or unreasonable regulations or reporting, recordkeeping, or compliance requirements." See also, Government Code § 11346.3(c), and Government Code § 11346.9, 11347.3. Government Code § 11346.3(a)(11) requires a determination of the impact of the regulation on housing costs.

The need for the analysis inherent in formal rulemaking under the APA is readily apparent in this case. This permit will have a significant impact not only on the individual Permittee cities, but also on their residents, businesses and industries, and the economy and housing market in Southern California.

The procedures set forth in the APA ensure that the important policy, cost and scientific issues are fully addressed and a proper administrative record is made. We believe that the

failure to institute formal rulemaking early in the process will leave open a basis for attacking the Permit, once adopted, on the ground that the Board failed to comply with the APA.

We are also concerned that, by setting specific design standards, the Regional Board and the State Board are crossing the line into an area typically handled through building codes which are supposed to be uniform throughout the state.

There should be no misunderstanding that our cities fully support the same objectives of the Regional Board and the environmental groups to achieve a consensus to preserve, restore and enhance the many beneficial uses of the ocean and the water bodies of Southern California.. We hope that you will consider our comments and suggested changes in this spirit.

Very truly yours,

John J. Harris

12131 0002.654814.1

Enclosure

cc: Dennis Dickerson (w/encl.)

COMMENTS ON APRIL 13, 2001 DRAFT WASTE DISCHARGE REQUIREMENTS FOR DISCHARGE OF STORM WATER IN LOS ANGELES COUNTY (NPDES NO. CAS614001)

by
John J. Harris
Richards, Watson & Gershon

1. Finding No.1.- The 1996 Permit (Order No. 96-054) did not "rescind" the 1990 Permit (Order No. 90-079); it was a renewal of an existing NPDES permit. Accordingly, we suggest that the language be modified the read:

   "Order No. 96-054, adopted by this Board on July 15, 1996, and which replaced Order No. 90-079...; ".

2. Finding No.3.- "Nature of Discharges and Sources of Pollutants"- We suggest the following modification to the last sentence:

   "However, the implementation of the measures set forth in this Permit are intended to and will contribute to the reduced entry of these pollutants into storm water and their discharge to receiving waters."

3. Finding No.6.- As discussed in further detail herein, we are concerned about the RWQCB's foray into the area of regulating "environmentally sensitive areas", which have been statutorily and traditionally regulated by the Coastal Commission.

4. Finding No. 13- Permit Coverage- We believe that this finding should be modified, as follows to conform with Finding No. 14:

   "The requirements in this Order cover all areas within the boundaries of the cities (see Attachment A) over which the Permittees **have regulatory jurisdiction,** as well as unincorporated areas in Los Angeles County Flood Control District within the jurisdiction of the Regional Board."

5. Finding No. 21- We agree with the EAC that the referenced sections of the Code of Federal Regulations do not support the finding requiring inspections, monitoring or controlling pollutant loads from "discharges from industrial and commercial facilities". The finding should be deleted.

6. Finding No. 31- This finding states "The State Board's Chief Counsel has issued a statewide policy memorandum (dated December 26, 2000) which interprets the Order to provide broad discretion to Regional Boards and identifies potential future areas for inclusion in SUSMPs and the types of evidence and findings necessary." A legal memorandum by the State Board's Chief Counsel, while informative, is not a regulation

and has no legal effect. We believe the reference should be deleted.

7. Finding No. 31- Retail Gas Outlets; Environmentally Sensitive Areas. The State Board's Order WQO No. 2000-11 specifically stated:

" We conclude that because RGOs are already heavily regulated and may be limited in their ability to construct infiltration facilities or to perform treatment, they should not be subject to the BMP design standards at this time, and **recommend that the Regional Water Board undertake further consideration of a threshold relative to size of the RGO, number of fueling nozzles, or some other relevant factor.** This Order should not be construed to preclude inclusion of RGOs in the SUSMP design standards, with proper justification, when the permit is reissued."

The Draft Permit does not reflect the State Board's directive regarding "a threshold relative to size of the RGO, number of fueling nozzles,..." or other factors.

Similarly, Order 2000-11 stated:

"While it may be appropriate to include more stringent controls for developments in ESAs, we also note that such developments are already subject to extensive regulation under other regulatory programs. Moreover, in light of the permit language limiting the SUSMPs to development categories, ESAs are not an appropriate category within the SUSMPs. The Regional Water Board may choose to consider the issue further when it reissues the permit."

The Draft Permit does not reflect any further consideration as to how the proposed controls of "environmentally sensitive areas" enhance the existing "extensive regulation under other regulatory programs."

8. Finding No. 41- Page 10- We disagree with the proposed language that: "For water quality purposes, the Regional Board considers that all new development and significant redevelopment activity in specified categories, that receive approval or permits from a municipality, are subject to storm water mitigation requirements." As discussed in the City of Alhambra's comments, cities have a very limited ability to prescribe storm water mitigation requirements for ministerial permits.

9. Part 1, Section 2(c)- Discharge Prohibitions- Page 13- We believe that the discharges which were conditionally exempt under Part II, Section II.C.2.(a), (g) and (h) of the existing Permit for landscape irrigation and lawn watering should be included in Part1, Section 2(c) of the Draft Permit.

10. Part1- Discharge Prohibitions- Page 13- The proposed Discharge Prohibitions omit a important exception set forth in Section1(C) of Part 1 at Page 12 of the current Permit for

"Discharges originating from federal, state or other facilities which the Permittee is pre-empted from regulating."

11. Part1- Discharge Prohibitions- Page 13- The Discharge Prohibitions also omit a very significant and critically important provision of the current permit in Section1 of Part 1 at Page 12, which states:

    "Compliance with this Order through the timely development and implementation of programs described herein shall constitute compliance with this prohibition."

    This provision should be included in the new Permit.

12. Part 2- Receiving Water Limitations- Page 13- We agree with the County that proposed sections 1 and 2 are inconsistent with State Board Order WQ 99-05 and should be eliminated. We also agree with the comments on the limitations submitted by the City of Alhambra.

13. Part 2- Receiving Water Limitations- Page 14- The Receiving Water Limitations also omit an important provision of the current permit in Part II at Page 12, which states:

    "Timely development and complete implementation of the storm water management programs described in this Order shall satisfy the requirements of this section and constitute compliance with receiving water limitations."

    This provision should also be included in the new Permit.

14. Part 3.G.1(f)- Legal Authority- Page 18- The reference to discharges from swimming pools should match the existing permit language to "prohibit the discharge of commercial swimming pool filter backwash to the MS4." (See, Section 1.E.1.(a)(v)of the current Permit, at page 18).

15. Part 3.G.1(h)- Legal Authority- Page 18- this section should be modified to track the language of Section 1.E.1(a)(vii), at page 18 of the existing permit, and, in particular, to refer to *untreated* runoff.

16. Part 3.G.1(n)- Legal Authority- Page19- We agree with the County's and other Permittees' concerns regarding both the feasibility and enforceability of the new inspection requirements set forth in the Draft Permit.

17. Administrative Review- We are particularly concerned by the Board's failure to include the Administrative Review provisions from Section 1.G. of the existing Permit at pages 21 and 22. These provisions provided a very important and informal procedure for resolving differences and misunderstandings regarding permit interpretation and implementation.

18. Part 3.B.- Industrial /Commercial Inspections, pages 25-29. We agree with the comments of most of the Permittees with respect to questionable legality and practicality of the proposed inspection program, particularly as it relates to facilities which are already regulated by the Board itself.

19. Part 4.C.1-Development Planning- Page 29. The existing Permit clearly provides that it applies to "all development projects requiring discretionary approval" (See, II.A.1. at page 33). The broad definitions of "development"and "redevelopment" contained in the Draft Permit greatly extend the scope of the proposed controls without consideration of either the municipalities' primacy in local land use decisions or the limitations on their authority. Nothing in the Draft Permit or the Board's fact sheet provides any justification for this extension. Furthermore, scope of the proposed controls on *all* "development"and "redevelopment" goes beyond the scope of EPA's Phase I and Phase II Rules for Construction and Post-Construction Runoff Control. We believe that development control should only apply to"Discretionary Projects", as defined in Section 15357 of the Guidelines for Implementation of the California Environmental Quality, which applies to projects requiring the exercise of judgment or deliberation by a city in connection with the decision to approve or disapprove the project, as distinguished from situations where the city merely must determine whether there has been conformity with applicable statutes, ordinances, or regulations.

20. Part 4.C.3.-SUSMP- Page 30. Without re-arguing the issues and questions regarding the original SUSMP as ultimately revised and adopted by the State Board, the fundamental issue remains regarding the Board's compliance with Water Code § 13360 while dictating specific design standards in the Draft Permit.

21. Part 4.E.3(c).-Public Construction Activities-Page 41. We agree with the County that public agencies should be not be required to obtain a general construction permit for activities not currently regulated by the State Board.

22. Part 4.E.4(d).-Vehicle Maintenance Facilities-Page 42. We also agree with the County that public agencies should be not be required to obtain an industrial permit for activities not currently regulated by the State Board.

23. Definitions-"Environmentally Sensitive Areas"- Page 48- The project categories identified in the current NPDES Permit were based upon a conclusion that these types of projects have a greater likelihood of contributing contaminated run-off to the Municipal Separate Storm Sewer System ("MS4"). The State Water Resources Control Board in Order WQO No. 2000-11 excluded the additional category of "environmentally sensitive areas" from the SUSMP proposed by the RWQCB. The State Board did state that the "Regional Board may choose to consider the issue further when it reissues the permit." We can appreciate the Board's desire to protect wetlands from the impacts of development. However, the

fundamental question still has not been addressed as to whether these areas, as defined in Public Resources Code § 30107.5, are adequately regulated and protected under existing laws and regulations administered by other agencies.

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April 20, 2001

VIA FACSIMILE AND
FIRST CLASS MAIL

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality
Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013-1105

2001 APR 24 P 2:32

Re: Los Angeles Regional Water Quality Control Board
Draft NPDES Permit No. CAS614001

Dear Mr. Dickerson:

This office is representing a coalition of cities ("Coalition") in connection with the Los Angeles Regional Water Quality Control Board's Draft Municipal NPDES Permit for Los Angeles County, NPDES No. CAS614001. The purpose of this letter is to provide the Board with a list of legal issues that the Coalition has identified with this initial Draft, in order to give the Board and interested stakeholders an opportunity to fully evaluate these issues ***prior*** to the issuance of a final permit.

With all parties working to address these legal issues, it is our hope that the Regional Board will then be in a position to issue a legal, valid and technically supportable municipal NPDES permit for Los Angeles County. The issues the Coalition would ask that your staff consider addressing at this time include the following:[1]

(1) The Draft Permit imposes requirements which the Regional Board does not have authority to impose, and/or where the Regional Board has exceeded its authority. For example,

[1] Please recognize that we have expedited the forwarding of this list of legal issues to you so that you would be in a position to review them in time for the April 24, 2001, Workshop. Please, understand however, that as we did not receive a complete draft of the permit until April 13, 2001, the list of issues identified herein is by no means comprehensive.

the Draft goes beyond the ***maximum extent practicable*** standard under the Clean Water Act and the regulations thereunder. It further exceeds the inspection, surveillance, and monitoring obligations that may be imposed on municipalities under the federal regulations, specifically including, but not limited to, authority to inspect certain specified industrial activities and construction sites. Specifically, please note that there is no authority to require that municipalities inspect ***all*** industrial and commercial operations within its jurisdiction, or that it enforce the terms of a State wide General Permit.

(2) The Draft Permit fails to comply with the requirements of the Clean Water Act as it is not based on quantitative data, and as the managements programs in the Draft Permit have not been developed based on such quantitative data, and formulated to identify and thereafter address the types and sources of pollutants in the affected receiving waters. In short, the Draft Permit was not developed based on data showing the pollutants of concern, and the sources of those pollutants.

(3) The Draft Permit fails to consider economic considerations and no cost/benefit analysis appears to have been performed by Board staff.

(4) The Draft Permit would result in countless unfunded mandates on municipalities, in clear violation of the provision of the California Constitution that precludes the State from shifting financial responsibility to local entities that are ill-equipped to handle the transferred tasks.

(5) The SUSMP requirements imposed under the Draft Permit are inconsistent with State Board Order No. 2000-11, and in addition, are subject to all the same legal arguments addressed in connection with the Coalition's petition to the State Board which led to State Board Order No. 2000-11. For example, in addition to improperly expanding the categories of development the SUSMP would apply to, the reference to "discretionary" projects has again been dropped, which, combined with the Regional Board's revised definition of "Redevelopment," would result in some of the very same problems created by the last SUSMP, a SUSMP that was specifically modified by the State Board because of such defects.

(6) The Draft Permit seeks to impose waste discharge requirements that contravene the requirements of California Water Code Section 13263 and 13241.

(7) The Draft Permit improperly attempts to amend the statutory and regulatory requirements of CEQA, in violation of CEQA and the requirements of the Administrative Procedures Act.

(8) The Draft Permit improperly invades the local land use authority of municipalities, by requiring amendments to the Cities' General Plans. There is nothing in State

law that allows a regional water quality control board to dictate to a municipality on how to regulate land uses within its jurisdiction.

(9) Various findings in the Draft Permit are not supported by the evidence, and many provisions in the Draft are not supported by findings.

(10) The Draft Permit seeks to impose an order, rule or standard of general application again, without complying with the requirements of the Administrative Procedures Act.

(11) The Draft Permit fails to comply with the requirement of California Water Code Section 13370, which requires compliance with the provisions of the Clean Water Act.

(12) The Draft Permit fails to include a finding of consistency with the Area-Wide Waste Treatment Management Plan, a finding the Clean Water Act expressly requires before the subject NPDES permit can be issued (33 U.S.C. § 1288(e)), and a finding required under State Law. (Water Code §13225 (h).)

(13) Because the Draft Permit goes beyond the authority provided under the Clean Water Act and the Porter-Cologne Act, and as the Draft Permit will apply to "new sources" as defined in the Clean Water Act, the requirements of CEQA must be complied with.

(14) The Draft Permit fails to include a set of Administrative Enforcement Procedures, including a notice and meet and confer process, to resolve differences in compliance expectations.

(15) The Draft Permit fails to include appropriate "safe harbor" language particularly for alleged exceedences of water quality objectives, and rather than acting as a ***"permit"*** to allow for "discharges" of pollutants in accordance with the Clean Water Act and to "control" pollutants "to the maximum extent practicable," the Draft Permit is open-ended ***generally prohibiting all*** discharges from the MS4 that cause or contribute to a violation of water quality standards or water quality objectives. The very purpose of the issuance of a ***"permit"*** is to allow the discharge of "pollutants," so long as they are controlled ***to the maximum extent practicable.*** We would ask that the Regional Board not lose sight of the fact that the subject "discharges" are not caused or created by the municipalities, and that as enforcing agencies, municipalities cannot be expected to be liable for every act or indiscretion of its citizens.

(16) The Draft Permit, particularly including the SUSMP requirements set forth therein, violate the prohibition under California Water Code Section 13360, prohibiting the Regional Board from specifying the design, location, type of construction, or particular manner in which compliance is to be obtained.

(17) As the State Board has not adopted regulations providing guidance on the issuance of MS4 NPDES permits, and since the Regional Board is not a State agency with State wide jurisdiction, the Regional Board has no authority to issue the subject NPDES permit. (See 40 CFR § 123.1(g).)

We look forward to working with you and your staff on a resolution of the above issues and to the development of a municipal NPDES permit that is consistent with both the Clean Water Act and State law. Please do not hesitate to contact the undersigned if you have any questions or need any additional information with respect to these issues.

Sincerely,

RUTAN & TUCKER, LLP

Richard Montevideo

RM:ctm:kmh
cc: Jorge Leon, Esq.
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Mr. Arthur Baggett
Mr. Ken Farfsing

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May 15, 2001

VIA MESSENGER

Dr. Xavier Swamikannu
Calif. Regional Water Quality Control Board
Los Angeles Region
Storm Water Program
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Re: Los Angeles Regional Water Quality Control Board April Draft of NPDES Permit No. CAS614001

Dear Dr. Swamikannu:

As you know this office represents a number of Cities in the County of Los Angeles who are members of an ad hoc coalition known as the Coalition For Practical Regulation. The purpose of this letter is to provide Regional Board staff with written legal comments, in addition to the comments provided at the Workshop of April 24, 2001 ("Workshop"), for its review and consideration in making appropriate changes to the proposed NPDES Permit.

As mentioned in my letter of April 20, 2001, to Mr. Dickerson, it is our hope that the Regional Board will consider these comments and strive towards formulating an NPDES Permit that is consistent with both the Clean Water Act ("CWA" or the "Act") and State law, and that it will develop an NPDES Permit that best protects the quality of the waters within the County and the interests of the community at large.

A. THE INSPECTION, ENFORCEMENT, MONITORING AND REPORTING OBLIGATIONS IMPOSED ON PERMITTEES FOR INDUSTRIAL/COMMERCIAL FACILITIES ARE NOT AUTHORIZED BY STATE OR FEDERAL LAW.

As discussed at the Workshop, under the Proposed Management Program provisions of the CWA regulations, Permittees are to develop a program to monitor and control pollutants in storm water discharges to the MS4 from certain ***industrial facilities*** specifically described as

follows: "municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to Section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and ***industrial facilities*** that the ***municipal permit applicant determines*** are contributing a substantial pollutant loading to the municipal storm sewer system." (See 40 CFR § 122.26 (d)(2)(iv)(c).)

Further, under section 122.2 (d)(2)(i) of the CWA regulations, municipalities are required to demonstrate "Adequate Legal Authority" as necessary to control the "contribution of pollutants to the municipal storm sewer by ***storm water discharges associated with industrial activity and the quality of storm water discharges from sites of industrial activity."*** The phrase ***"storm water discharge associated with industrial activity"*** is specifically defined under § 122.26(b)(14), to mean "the discharge from any conveyance that is used for collecting and conveying storm water ***and*** that is directly related to manufacturing, processing or raw materials storage areas at an ***industrial plant***. The regulation goes on to describe specific types of activities that fall within the term "industrial activities" in 40 CFR § 122.26(b)(14)(i) – (xi). At the Workshop, Board staff was provided an EPA website page which plainly describes the "industrial activities" covered under this Section. A copy of this webpage is also included with this letter for your review and consideration and is attached as Exhibit "A".

As discussed at the Workshop, the proffered language in Section 122.26(d)(2)(ix)(C) relied upon by Board staff to support its position that it could require inspections of ***all industrial/commercial*** facilities is clearly limited to ***industrial facilities***, and specifically ***industrial faculties*** that "the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system." Accordingly, contrary to Board staff's position at the April 24th Workshop, Section 40 CFR 122.26(d)(2)(iv)(C) does not authorize the Regional Board to impose inspection and enforcement obligations on municipalities for ***all industrial and commercial facilities*** within its jurisdiction.

In short, the terms of the draft Permit goes far beyond the authority provided to the State under the regulations to impose inspection, enforcement and reporting obligations on municipalities. The following is a description of the provisions within the draft Permit that plainly exceed the authority provided under the regulations:

(1) Page 19, subsection (m) – "***Control*** the contribution, or ***potential contribution***, of pollutants and discharges of storm water runoff associated with industrial activities (including construction activities) to its MS4 and control the quality of storm water runoff from industrial sites (including construction sites)." Here, the CWA regulations clearly only allow for the control of the ***contribution*** of pollutants, not the ***"potential contribution"*** of pollutants, and only with respect to ***"discharges of storm water associated with industrial activities."*** (122.26(d)(2)(i)(A).)

(2) Page 19, subsection (n) – "Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and non-compliance with permit conditions, including the prohibition of illicit discharges to the MS4. ***Permittees must possess authority to enter, sample, inspect, review and copy records, and require regular reports from industrial facilities discharging polluted or potentially polluted storm water runoff into its MS4 (including construction sites).***" The second part of this requirement, requiring authority to enter a ***private*** facility discharging ***polluted or potentially polluted*** storm water runoff, to sample and inspect such facility, to review and copy records of the facility, and to require regular reports from the facility, is overly broad and is not authorized by the Clean Water Act or State law. It should be recognized, moreover, that by definition storm water includes "storm water runoff, snow melt runoff, and surface runoff and drainage" (40 CFR § 122.26(b)(13)) and the reference to ***polluted or potentially polluted*** storm water runoff is ambiguous, unsupported and confusing, as "runoff," by definition, will include pollutants.

(3) Page 25, Section B – Programs for Industrial/Commercial Inspections, whereby the Permittees are to implement an Industrial/Commercial Program to: Achieve the control and reduction of pollutants in storm water runoff from ***all*** Industrial/ Commercial sites to the maximum extent practicable. The term "Industrial/Commercial Facility" is broadly defined to include "any facility involved and/or used in either the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services." The term is to include any SIC code facility and includes any federal, state and non-profit facility. The only analogous language in the CWA regulations to this language requires Permittees to control the contribution of pollutants to the MS4 of ***storm water discharges associated with industrial activities.***

Clearly, the draft Permit goes far beyond the CWA regulations as it requires a "reduction" of pollutants in storm water runoff, as opposed to controlling the contribution of such pollutants, and as it requires such controls and reduction from "all Industrial/Commercial Sites" within the Permittee's jurisdiction. The term Industrial/Commercial is also defined in an overly broad fashion, to include all developed sites, including State, federal and institutional facilities, excepting only residential developments. This definition is directly contrary to ***Finding No. 14*** of the draft Permit, where the Board expressly recognizes that "the Permittees will not be held responsible for such facilities and/or discharges." (See p. 5, ***Finding No. 14*** of draft Permit.)

(4) Page 25, Section B – Programs for Industrial/Commercial Inspections, and the requirement for Permittees to adopt a program that requires the implementation of proper pollution prevention and control measures at all Industrial/Commercial Sites; source identification at all such sites; identifying threats to water quality; site plan review and BMP implementation for such sites; ***inspections*** of such sites; the ***enforcement*** of pollution prevention and control measures at such sites; and the ***ability to impose sanctions to ensure***

compliance with these provisions against such Industrial/Commercial sites, is not supported anywhere by the CWA regulations or State law.

Again this provision goes far beyond the requirement that Permittees control contribution from ***storm water discharges associated with industrial activities***, and beyond any requirement to prohibit ***illicit discharges*** and to adopt a management program to detect and remove "illicit discharges" (which, by definition, specifically excludes discharges permitted pursuant to an NPDES permit). There is nothing in the regulations or State law to support such language in the draft Permit. Specifically, the inspection and enforcement obligations sought to be imposed on the municipalities are not supported by State or federal law, and constitute naked efforts to transfer unfunded mandates (discussed below) to municipalities in violation of the California Constitution. For example, the State's General Industrial NPDES permit, on its face, imposes the obligation to ***enforce*** and ensure ***compliance*** with its terms squarely on the Regional Board. (See page 9 of the State Board Order No. 97-03 DWQ.) There is no authority anywhere under State or federal law that allows the Regional Board to transfer these obligations to municipalities, and in fact, such attempts violate the express terms of the California Constitution.

(5) Page 26, Section 3 – Threat to Water Quality. The draft Permit specifically requires that Permittees include a program that will address, at a minimum, "all industrial groups regulated under Phase I of the Federal Storm Water Program." In addition, restaurants and other commercial facilities "contributing or ***potentially contributing*** to the impairment of receiving waters" and motor vehicle repair shops, (none of which are covered within the definition of "storm water discharges associated with industrial activity"), are all facilities that the draft Permit would require to "control the contribution of pollutants" to the MS4. However, the CWA regulations only impose on the municipalities the obligation to carry out inspection, surveillance and monitoring as necessary to determine compliance and non-compliance with the MS4 permit requirements, i.e., as necessary to detect and remove illicit discharges and improper disposals into the MS4, and to inspect industrial facilities ***that the municipality determines*** are "contributing a substantial pollutant loading to the municipal storm sewer system."

(6) Page 27, Section 4 – BMP Implementation. A requirement that each Permittee implement or require the implementation of the BMPs approved in Resolution No. 98-08, at each "Industrial/Commercial Site" within its jurisdiction. In effect, the Permittees are being required to specifically regulate and impose BMPs on all such Industrial/Commercial Sites within their jurisdiction. In addition, the Permittees are being required under the draft Permit to ***implement***, or require implementation of, additional controls for Industrial/Commercial Sites that contribute to impaired water bodies, or that are adjacent to an Environmentally Sensitive Area. Again, there is nothing within State or federal law that authorizes any of these requirements, and such provisions go far beyond the language of the CWA and the regulations thereunder. In effect, the draft Permit appears to require municipalities to enter upon private property and intrude upon private businesses in order for the Cities to then physically construct

controls and/or BMPs at such private business. Yet, how or where the Regional Board has the authority to impose such an obligation on municipalities, and/or how or where the municipalities have any authority to enter upon a private business and implement BMPs and/or other controls at individual facilities, is unknown.

(7) Page 27, Section 5 – Inspection of Industrial/Commercial Sites. An inspection obligation on the Permittees to inspect restaurants, automotive service facilities, other commercial facilities and Phase I facilities, once every 24 months, including ***all commercial facilities that contribute or potentially*** contribute to the impairment of receiving waters. Again, the CWA regulations only require that municipalities control the contribution of pollutants in storm water to the MS4 from certain specifically defined industrial activities, and to prohibit illicit discharges. There is nothing in the Act that authorizes the Regional Board to require municipalities to conduct on-site inspections of ***any*** commercial facility, without first having probable cause, or reasonable suspicion under exigent circumstances, of an illicit discharge, and there is nothing that would require the inspection, surveillance and monitoring of any facility, industrial, commercial or residential, because of a mere "potential to contribute" pollutants to the MS4. Further, any requirement involving the "control" of pollutants in storm water to or from the MS4, as opposed to the prohibition of pollutants, must involve application of the "maximum extent practicable" standard.

(8) Page 28, Section 7 – "Reporting of Non-Compliant Sites" (Industrial/Commercial). Each Permittee is to provide oral notification of non-compliant sites to the Regional Board within 3 days of non-compliance with existing storm water regulations, upon discovery of such, or within 24 hours where there is an ***adverse impact or nuisance***. The oral notification is to be followed up by a written report within 5 days of the incident of non-compliance. Unfortunately, again, the reporting requirement applies to all Industrial/ Commercial facilities, including state and federal facilities, and State NPDES permitted facilities are already regulated under the State's General Industrial Permit (where the permit expressly requires that the ***Regional Board conduct compliance inspections***, and ***take enforcement actions***). (See page 9 to State Board Order 97-03-DWQ.) This section of the draft Permit also improperly attempts to include any Industrial/Commercial Facility that creates an adverse impact or nuisance to the quality of receiving waters, even though conditions of nuisance or pollution are to be enforced by the Regional Board, pursuant to Water Code Section 13304. Again, there is nothing within the regulations or State law that would support imposing such broad obligations on municipalities.

B. THE DEVELOPMENT PLANNING ("SUSMP") REQUIREMENTS IN THE DRAFT PERMIT ARE IN CONFLICT WITH STATE BOARD ORDER WQ-2000-11, AND VIOLATE OTHER LEGAL REQUIREMENTS.

1. The .75 inch standard is inappropriate.

As discussed at the Workshop, the regulatory authority for imposing a SUSMP is set forth in 40 CFR Section 122.26(d)(2)(iv)(A). There, the regulations require that the Proposed Management Program include a description of structural and source control measures to reduce pollutants from runoff in commercial and residential areas that are discharged ***"from"*** the municipal SUSMP system, to be implemented during the life of the Permit, and to be accompanied with an ***"estimate of the expected reduction of pollutant loads"*** and a proposed schedule for implementing such controls. The proposed SUSMP imposes a .75 inch standard, but does not contain any findings identifying the ***"expected reduction of pollutant loads,"*** or the sources or types of such pollutant loads. The .75 inch standard further does not appear to have been developed based on "quantitative data," "source identification," and "source characterization" (40 CFR 122.26(d)(1), and an analysis of the reduction of pollutant loads expected from the SUSMP has not been performed. The CWA regulations have thus not been complied with.

Further, Water Code Section 13263(a) requires a consideration of the "conditions existing in the disposal area or receiving waters" where the discharge is made or proposed. As discussed further below, the proposed SUSMP requirements impose a "one size fits all" requirement and do not give fair consideration to the "conditions existing" in the respective development areas, and to the specific types of development in question.

2. The SUSMP provisions do not take into account the considerations required by Water Code Sections 13263 and 13241, and other important considerations.

The .75 standard appears to be a one-size fits all standard, and one that fails to consider the objectives required to be considered in issuing a set of Waste Discharge Requirements as required under Water Code Sections 13263 and 13241, specifically "***economic considerations***" and ***"the need for developing housing within the Region."*** As discussed above, even though ***"economic considerations"*** are required to be considered in the adoption of the Permit and in the adoption of the subject SUSMP, there are no findings and no indication that such ***"economic considerations"*** have been accounted for.

Second, at a minimum, the Regional Board is to consider the impacts of the SUSMP requirements on ***"housing within the region,"*** and on the ability of municipalities to increase the amount of available low and moderate income housing within their respective jurisdictions. The proposed SUSMP does not address the housing needs within the region, and there are no findings that even suggest that the region's housing needs were considered.

In addition, under Water Code Section 13263(a), the requirement of any set of Waste Discharge Requirements to achieve water quality objectives must be "***reasonably*** required for that purpose." and under Section 13241, only water quality conditions that "could ***reasonably be achieved*** through the coordinated control of all factors which affect water quality in the area," may be imposed. (Water Code §13263(a); 13241(c).) Here, the .75 inch standard, along with the overbreadth of the categories to which it is to be applied, and with the overbroad definition of "Redevelopment," the lack of "regional solutions," the insistence that all "non-discretionary" projects be included, and the inclusion of "environmentally sensitive areas," are all terms of the SUSMP which are not "***reasonably required***," nor will they result in water quality conditions that "could ***reasonably*** be achieved."

Finally, with the proposed SUSMP language, Board staff has failed to consider the impact on ***ground water*** quality, vector control issues, and the financial constraints that are already inhibiting the ability of cities and the County to provide essential health and safety services to their citizens.

3. The Regional Board may not regulate environmentally sensitive areas.

The SUSMP was developed contrary to the admonitions and directives provided by the State Board pursuant to Order WQ-2000-11. Specifically, under Order WQ-2000-11 (a copy of which is enclosed and attached as Exhibit "B"), the State Board ***invalidated*** the prior SUSMP imposed by the Regional Board, in part because of the Regional Board's insistence on including a category defined as development within "environmentally sensitive areas" ("ESAs"). The State Board reasoned that ESA's were already "subject to extensive regulation under other regulatory programs." (See Order WQ-2000-11, p.25.)

The application of the SUSMP requirements to ESAs is, therefore, inappropriate as such areas are already heavily regulated, as the Regional Board only has jurisdiction over "receiving waters" within such areas, and as the Regional Board has no jurisdiction over the "environmentally sensitive areas" themselves. Nothing in the Porter-Cologne Act, other State law, or the Clean Water Act, provides any such authority to the Regional Board. ESAs are defined in the draft Permit to include areas containing critical habitat, endangered species or other areas defined as "environmentally sensitive." In this case, the Regional Board's authority starts and stops with "receiving waters" and any impact pollutants of concern may have on an

"environmentally sensitive area" at any given site, is outside the jurisdiction and authority of the Regional Board.

The California Environmental Quality Act, the Federal Endangered Species Act, the California Endangered Species Act, and numerous other State and federal laws already impose significant restrictions, limitations and prohibitions on development in "environmentally sensitive areas." These laws have been adopted for the very purpose of protecting the species, habitat or wildlife that have caused the area to be "environmentally sensitive" in the first instance. The Regional Board has no such authority, and is moreover preempted from regulating the field. In addition, a SUSMP that effectively requires "pollutants of concern" to remain ***onsite***, on an environmentally sensitive area, is intuitively not protective of the environment or sensitive to the species and/or habitat of concern.

Finding No. 6 of the draft Permit further illustrates how far field the Regional Board has gone in its attempt to regulate outside of its authority. ***Finding No. 6*** provides, in pertinent part, that:

> "[D]evelopment and urbanization especially threaten environmentally sensitive areas. Such areas have a much lower capacity to withstand pollutant shocks than might be acceptable in the general circumstance. In essence, development that is ordinarily insignificant in its impact on the environment may in a particular sensitive environment become significant." (See draft Permit p. 4, ***Finding No. 6***.)

Thus, ***Finding No. 6*** illustrates the clear desire of the Regional Board to itself regulate "development and urbanization" within an environmentally sensitive areas, as opposed to regulating pollutants of concern in receiving waters from a particular type or source of pollutant. As the State Board has determined that ESAs are already heavily regulated, and as ***Finding No. 6*** evidences the Regional Board's desire to restrict "development and urbanization" so as to protect environmentally sensitive areas, as opposed to receiving waters, ESAs are outside the authority and expertise of the Regional Board and cannot legally be regulated by this Permit.

4. The term "Redevelopment" is overly broad, as is the general application of the SUSMP provisions.

The proposed SUSMP provisions are again overly broad with the new definition of ***"redevelopment,"*** as the definition is contrary to the definition provided by the State Board in Order WQ-2000-11. Unfortunately , the Regional Board has chosen to attempt to broaden the definition of "redevelopment," in spite of some two days of hearing before the State Board challenging the previous SUSMP issued by the Regional Board, as a result of a SUSMP which contained this very same deficiency of having an over broad definition of "redevelopment."

Further, once again the over breadth of the definition is compounded by the Regional Board's broadening of the application of the SUSMP to ***"nondiscretionary projects."*** For example, with the expanded definition of "redevelopment" to include the ***"replacement"*** of 5,000 square feet of impervious surfaces, along with the inclusion of nondiscretionary projects, the replacing a roof on a commercial or even a large residential structure, such as an apartment complex, would trigger compliance with the SUSMP's .75 inch requirement. Similarly, replacing or repaving a parking lot of 5,000 square feet or more would result in the need for a complete redesign of the development. The result of the expanded definition of "redevelopment" is that if any required replacement is to be done, if will be done piecemeal, and will be done in a costly and inefficient manner.

In addition, with the overbroad definitions of "New Development" and "Redevelopment" as presently written, the SUSMP is ambiguous as the term "Redevelopment" is completely subsumed in the definition of "New Development." The concern is that given the definition of the term "New Development," i.e., "land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision," all "Redevelopment" would constitute "New Development." Accordingly, the definitions of both "New Development" and "Redevelopment" (as discussed above) should be revised, with the term "New Development" being redefined to limit its terms to the ***"creation or addition of 5,000 square feet or more of impervious surfaces."*** Such a change is necessary to avoid the circumstance where the "Redevelopment" of a particular area actually results in the reduction of impervious surface, and/or results in less than the addition of 5,000 square feet of impervious surface, but yet the SUSMP provisions are interpreted as applying because of the breadth of the definition of "New Development."

5. The SUSMP once again improperly attempts to cover "nondiscretionary projects."

There is nothing within the draft Permit or the findings thereto, to support the application of the SUSMP to ***"nondiscretionary"*** projects. Again, one of the primary arguments made and upheld by the State Board in connection with the prior challenge to the Regional Board's SUSMP, was that it inappropriately applied to "non-discretionary" projects. In ***Finding No. 41*** of the draft Permit, the Permit appears to be designed to modify the regulations to CEQA, and the entire land use decision-making process throughout the region, so that "a ministerial project may be made discretionary by adopting local ordinance provisions that create decision-making discretion." (See Finding No. 41.) The implication of the inclusion of "non discretionary" projects within the SUSMP is that ***any*** development and redevelopment project within the specified categories, would require the application of a SUSMP, leading to absurd and unintended consequences, as discussed herein.

Further, there are no findings, and no evidence to support any findings, for the need to apply the SUSMP requirements to "non-discretionary" projects. Before such an expansive and overly broad application of this SUSMP is mandated on the Permittees, at a minimum, findings supporting the needs for such an expansion, and evidence supporting such findings, must be sited. Without such findings, the inclusion of all "non discretionary" projects within the development categories of the SUSMP, is arbitrary and capricious and is not supported by the evidence in the record and is not otherwise shown to be "***necessary***" to protect the water quality of the region. (Water Code §13263(a).)

6. The "Waiver Fund" under the SUSMP is unspecific and unworkable.

The draft Permit provisions again ignore the State Board's admonition concerning the "Waiver Fund." In Order WQ-2000-11, the State Board stated that:

> "Before mandating funding, preliminary questions should be answered, including who will manage the fund, what types of projects it will be used for, what entities can legally operate such funds, and how permittees will determine the amount of the assessments. It would be appropriate for the County to consider developing a program with the appropriate flood control agency, or as a model for the separate cities to develop. There may be suitable agencies to administer such funds, but the ***development of programs may take some time***. The Regional Board should consider adopting such a program when it reissues the permit, ***after consultation with the appropriate local agencies***." (Order WQ-2000-11, p. 27.)

Here, the preliminary questions raised by the State Board have not been addressed, e.g., what entities can legally operate the Fund, what type of projects will it be used for, how are the Permittees to determine the amount of the assessment, who will operate the fund, etc. The development of such a waiver fund program does takes time, and there has not been sufficient time to properly determine these parameters and implement the concept. Furthermore, in spite of the State Boards admonition, there has been no ***"consultation with the appropriate local agencies"*** in the development of this Fund. Consultation with the affected and implementing agencies is critical to the successful design, administration and implementation of the fund. In short, the State Board envisioned a process whereby the Regional Board would first consult with local agencies to develop the fund, and would then secondly, work with and provide local agencies the time and resources to develop the fund. This basic, common-sense approach, to develop the waiver fund program, as required by the State Board, has been ignored.

Finally, it appears that the Regional Board is again demanding that where there is economic impracticability, that the equivalent amount of the funds that created the economic impracticability for an onsite SUSMP, be expended through the contribution of these funds to the

waiver fund. This obviously creates an unworkable situation. The State Board Order should be followed, and a Waiver Fund should only be developed "after consultation with the appropriate local agencies" and complete consideration of the above-referenced issues.

7. "Regional Solutions" have not been adequately considered.

In spite of the various admonishments from the State Board to develop "regional solutions" for purposes of implementing the SUSMP program, and in spite of the requirements under State and federal law to consider regional solutions in protecting the quality of the region's waters, the draft Permit again fails to adequately allow for regional solutions.

In Order WQ-2000-11, the State Board recommend that:

> "The Cities and the County, along with other interested agencies, work to develop regional solutions so that individual dischargers are not forced to create numerous small scale projects. While the SUSMP are an appropriate means of requiring mitigation of storm water discharges, we also encourage innovative regional approaches." (Order WQ-2000-11, p.21.)

With the proposed Permit, it is essential that regional solutions be developed, not only to insure cost effective measures of resolving our water quality problems, but also to insure technically effective programs and to avoid "numerous small scale projects." The Coalition for Practical Regulation has proposed a specific plan to develop regional solutions and we would strongly encourage the Regional Board to consider this plan in developing the subject NPDES Permit.

C. THE DRAFT PERMIT FAILS TO PROPERLY CONSIDER "ECONOMIC" CONSIDERATIONS AND HAS NOT BEEN DEVELOPED BASED ON A "COST/BENEFIT" ANALYSIS.

When issuing any NPDES Permit for alleged point source discharges, economic considerations are required to be taken into account under both State and federal Law. (See 33 USC §§ 1288, 1313, 1315(b), and 64 Federal Register 68722, 68732; Water Code §§ 13000, 13165, 13241, 13225, 13267 and related provisions thereto.) In particular, under Section 13263 of the Porter-Cologne Act, Waste Discharge Requirements ("WDRs") require a consideration of, among other matters, "the provisions of Section 13241." (Water Code § 3263 (a)) Section 13241(d) specifically requires that the Regional Board, in establishing water quality objectives, consider, among other matters, "***economic considerations***." As referenced above, Federal law also requires the consideration of "economic" considerations. (64 Federal Register 68722, 68732.)

The importance of "economic considerations" was, moreover, specifically recognized by the State Board in Order WQ-2000-11, where the Board found that the maximum extent practical ("MEP") standard requires Permittees to choose ***cost-effective***, best management practices ("BMPs"), and to reject applicable BMPs where the BMPs would not be technically feasible or "the cost would be prohibitive." (State Board Order 2000-11, p. 20.) Although the State Board did not agree that a formal "cost/benefit analysis" was required, it clearly recognized a need to consider costs in adopting BMPs, and here as well, at a minimum, the Porter-Cologne Act requires the Regional Board to consider "economic considerations," in imposing WDRs.

In addition, a cost/benefit analysis is plainly required under Water Code Section 13225(c), since the Regional Board is seeking to require local agencies to investigate and report on "technical factors involved" in water quality control. In this instance, Section 13225(c), requiring that "***the burden, including costs, of such reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained therefrom.***" (See Water Code § 13225(c); also see Water Code § 13165.) The draft Permit is replete with language requiring local municipalities to conduct numerous investigations and inspections, and to provide countless reports to either the Executive Officer or the Regional Board itself. Pursuant to the express requirements of the Porter-Cologne Act, a cost/benefit analysis must be conducted prior to the imposition of such mandates.

Moreover, ***Finding Nos. 16 and 45*** of the draft Permit refer to the importance of a ***cost-effective*** storm water control program and ***cost effective*** measures. Yet there are no findings supporting the actual terms of the draft Permit itself that impose the countless inspection, monitoring and reporting obligations on the Permittees, and there are no findings or evidence that the numerous programs under the draft Permit are ***"cost-effective"*** programs and/or measures. Without a supportable finding that the proposed measures are "cost-effective," such measures cannot legally be imposed.

We respectively request that the Board consider ***"economic considerations"*** in issuing the subject Permit, and that it perform the requisite ***"cost/benefit analysis"*** required by State law.

D. THE DRAFT PERMIT SEEKS TO IMPOSE NUMEROUS, UNFUNDED MANDATES UPON MUNICIPALITIES IN VIOLATION OF THE CALIFORNIA CONSTITUTION.

Article XIII B, Section 6 of the California Constitution prohibits the State Legislature or any State agency from shifting the financial responsibility of carrying out governmental functions to local governmental entities. In particular, Article XIII B, Section 6 provides in relevant part that:

> "Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse such local governments for the cost of such program or increased level of service ...."

This reimbursement requirement was intended to provide permanent protection for taxpayers from excessive taxation and to provide discipline in tax spending at both state and local levels. (*County of Fresno v. State* (1991) 53 Cal.3d 42, 46.) It was moreover enacted as a part of Proposition 4 in 1979, ***to preclude the state from shifting financial responsibility to local entities that were ill equipped to handle the task.*** (Id. at 47.)

Here, the draft Permit plainly attempts to shift the responsibility of the State and Regional Board on to the Permittees, by attempting to force the municipalities to, among other matters, regulate construction and industrial sites that are already otherwise regulated by the State Board. Irrefutable evidence of this attempt to shift an unfunded mandate on to the municipalities is provide by two correspondence from US EPA, one dated December 19, 2000 and a second is dated April 30, 2001. In such correspondence, US EPA explains that as a result of meetings with Regional Board's staff and the NRDC, that:

> "NRDC also recognizes, however, that the root of the problem is ***the lack of adequate staffing at the Regional Board to implement the program***. At the October 5 meeting, we [US EPA] suggested that the upcoming MS4 permit re-issuance for Los Angeles County ***require*** that the MS4 permittees provide ***more assistance to the Regional Board in this regard***." (See December 19, 2000 letter from Alexis Strauss, US EPA, p. 1)

To emphasize the point that US EPA would like to help impose a State mandate on municipalities because the State does not have "adequate staffing," Ms. Strauss goes on to state, in a follow up communication, that:

> "The State currently collects about $3 million in fees annually from storm water dischargers, and these fees are used entirely to fund storm water program activities, including inspections, enforcement, permitting and other activities. However, the storm water fees cover only about 30% of the costs of the current program, with the rest of the funding coming from other sources. As such, the fees are not adequate to fully fund the State's program and its various activities including inspection." (April 30, 2001

letter from Alexis Strauss of US EPA to Congressman Stephen Horn.)

(See April 30, 2001 letter from US EPA, Region 9, Alexis Strauss to Congressman Horn.)

The evidence could not be stronger and US EPA has emphatically made the point that because the fees charged by the State are "not adequate to fully fund the State's program," the Regional Board is attempting to shift a State ***mandate*** to municipalities, without providing funding, i.e. the State is attempting to impose an unfunded mandate. The Regional Board's attempt under the draft Permit to "shift financial responsibility to local agencies that are ill equipped to handle the task," and to put primary responsibility on the Cities to enforce a General Statewide Permit issued by the State Board, is a direct violation of Article XIII B, Section 6 of the California Constitution, thereby making the draft Permit invalid, without adequate funding to the Permittees. (*County of Fresno v. State, supra*, 53 Cal. 3d at 42, 47.) Other violations of this Constitutional prohibition exists with the shifting of other unfunded mandates to the municipalities, e.g. the SUSMP program.

E. THE DRAFT PERMIT FAILS TO INCLUDE APPROPRIATE SAFE HARBOR LANGUAGE AND AN ADMINISTRATIVE REVIEW PROCESS, AND WOULD RESULT IN POTENTIALLY OPEN-ENDED LIABILITY TO MUNICIPALITIES.

The intent and goal of the draft Permit should be to, in effect, issue a "permit" that ***allows*** for the discharge of pollutants from the Municipalities' MS4, but requires the municipalities control such discharges "to the maximum extent practicable." Such is the standard specifically set forth in the Clean Water Act, and the standard widely recognized by both the State and regional boards throughout the State, as being the appropriate standard for issuing MS4 NPDES Permits. Accordingly, where "pollutants" from an MS4 are being controlled to the maximum extent practicable, in accordance with "best management practices," the Permittees should be found to be in compliance with the permit, and thus CWA and the Porter-Cologne Act. Still, further, where a Permittee complies with the objective terms of the Permit, irrespective of whether or not a nuisance has been created by a private party's discharge to the MS4, and/or irrespective of whether there has been a water quality exceedance, so long as the terms of the Permit have been complied with, the Permittees should be deemed to be in compliance of the Clean Water Act and State law.

Accordingly, appropriate "safe harbor" language confirming that compliance with the terms of the Permit will constitute compliance with the provisions of the Clean Water Act and State law, is appropriate and should be expressly included within the draft Permit so as to provide the protections envisioned by State and federal law, and so as to avoid the potential for

spurious lawsuits against Permittees based on a strained reading of either the Permit, the Clean Water Act, or State law.

In addition, the Regional Board should include a specific Administrative Review Process as exists in the present Permit, as such a process goes hand in hand with an appropriate Safe Harbor. An Administrative Review Process provides important due process protections for the Permittees, and an opportunity for both Permittees and the Regional Board to present their respective positions prior to the commencement of a more formal and expensive dispute resolution process. Further, an Administrative Review Process provides an opportunity for the Board itself to address minor violations that may otherwise go unchecked through a more formal process, short of subjecting both parties to an expensive and timely dispute resolution process. It further allows the Regional Board to use a scalpel as opposed to a sledge hammer, in addressing what are perceived as minor violations.

In addition, the Administrative Review Process should include a "meet and confer" process to allow the parties an opportunity to resolve their differences through discussion of communications, followed up by a mediation and/or an arbitration process. Further communication and dialogue through the meet and confer process, followed by a mediation/arbitration process, would be in the best interest of all parties involved.

F. THE DRAFT PERMIT IMPROPERLY SEEKS TO TRANSFER THE BURDEN OF PROOF ON TO THE PERMITTEES, IN ENFORCEMENT ACTIONS, IN VIOLATION OF THE CLEAN WATER ACT, STATE LAW AND BASIC PRINCIPLES OF DUE PROCESS OF LAW.

Buried in the definition section of the draft Permit, at the end of the definition of the term "Pollutants," is the following:

> "In an enforcement action, the ***burden shall be on the person who is the subject of such action*** to establish the elimination of the discharge to the maximum extent practicable through compliance with the best management practices available."

The apparent intent of this language is to invert the burden of proof and to require the Permittees to effectively prove that their actions were not in violation of the Permit, and thus the Clean Water Act and the Porter-Cologne Act. In effect the apparent intent is to include a provision that the Permittees are deemed "guilty" of a violation, until they prove themselves "innocent." Obviously, this attempt to flip flop the burden of proof is a violation of the most basic principle of our American system of justice.

G. LIABILITY FROM PRIVATE ILLICIT DISCHARGES CANNOT BE TRANSFERRED TO THE MUNICIPALITIES, AND MUNICIPALITIES HAVE NO AUTHORITY TO MANDATE CONTRACTUAL PROVISIONS IN PRIVATE PARTY AGREEMENTS.

Under Section 9(c) on page 33 of the draft Permit entitled "Maintenance Agreement and Transfer," the Board attempts to impose obligations on Permittees to verify "[w]ritten conditions in the sales or lease agreements, which requires the recipient to assume responsibility for maintenance and conduct a maintenance inspection at least once a year...." The language seeks to have Permittees impose conditions in private sale and/or lease agreements, and effectively, to legislate language into sales and lease agreements requiring the assumption of responsibility for the maintenance of the SUSMP structures. Yet, there is no authority under State or federal law which would enable the Regional Board to impose this kind of requirement on municipalities, and nor is there any authority that would allow the municipality to impose such terms and conditions in a private agreement.

H. THE DRAFT PERMIT CAN ONLY BE ADOPTED AFTER THE REQUIREMENTS OF THE ADMINISTRATIVE PROCEDURES ACT HAVE BEEN COMPLIED WITH.

As discussed below, only State agencies with "statewide jurisdiction over a class of activities or discharges," and who have filed appropriate applications with the U.S. EPA, are authorized to administer NPDES programs. The lack of State direction in the instant case to individual regions throughout the State, has resulted in the present problem of different regional boards following different and inconsistent procedure and standards for developing NPDES permits. The lack of statewide jurisdiction of the Regional Board, in and of itself, invalidates the issuance of the subject permit. However, and in addition, in developing any "regulation," order" or "standard of general application," the State Board, and any Regional Board acting pursuant to State Board delegation, is required to comply with the express rule making requirements of the Administrative Procedures Act, Government Code Section 11340, et seq. ("APA").

Although California law does not require administrative agencies to comply with the APA in simply issuing permits, including the issuance of waste discharge requirements, because the draft Permit in question is, in effect, a set of regulations, and is an order and sets forth standards of general application, the APA plainly applies and must be complied with. (Gov. Code § 11342(g).) This conclusion is further supported by comments by Board Staff that the permit requirements have and/or will be applied to various other agencies as well, thereby confirming that the Regional Board believes it will be issuing an order of general application, i.e., a regulation.

Government Code section 11342(g) defines the term "regulation" broadly to include "every rule, regulation, order, or standard of general application or the amendment, supplement or revision of any rule, regulation, order or standard adopted by any state agency to implement, interpret or make specific law enforced or administered by it . . . ." (Gov. Code § 11342(g).) California courts have found that "any regulation promulgated contrary to the provisions of Chapter 3.5 of the Administrative Procedures Act is invalid." (See, e. g., *Goleta Valley Community Hospital v. Department of Health Services* (1983) 149 Cal.App.3d 1124, 1129.) Accordingly, where an agency does not promulgate a regulation in substantial compliance with the APA, the regulation is without legal affect. (*Grier v. Kizer* (1990) 219 Cal.App.3d 422, 431.) In short, the APA expressly prohibits public agencies from issuing, utilizing and enforcing any order, rule or standard of general application, unless the same has been adopted as a formal regulation. (See *Union of American Physicians and Dentists v. Kizer* (1990) 223 Cal.App.3d 490, 496.)

The Permit when adopted, will plainly be a set of regulations, an order and a standard of general application that has no legal affect unless and until the requirements of the APA have be met.

I. THE DRAFT PERMIT INCLUDES LANGUAGE THAT GOES BEYOND THE AUTHORITY OF THE REGIONAL BOARD TO REGULATE THE DISCHARGE OF POLLUTANTS TO RECEIVING WATERS UNDER AN MS4.

As discussed at the Workshop and above, Part 2, subsections 1 and 2 of the draft Permit, contains "receiving water limitation" language prohibiting discharges from the MS4 that "cause or contribute to the violation of water quality standards or water quality objectives" and provide that discharges from the MS4 of storm water shall not "cause or contribute to a condition of pollution." Yet, the very purpose of issuing a NPDES Permit, and a set of a Waste Discharge Requirements, is to specifically ***allow*** the discharge of storm water, which again, by definition includes "storm water runoff, snow melt runoff, and surface runoff and drainage." (40 CFR §122.26(b)(13).) The Waste Discharge Requirements under State law similarly specifically envision allowing or permitting the discharge of "waste" to, among other areas, receiving waters. In fact, the very purpose of the Los Angeles storm drain system developed years ago throughout the County, was to convey storm water runoff to receiving waters as quickly as possible so far to avoid flooding problems. Even the express Waste Discharge Requirement standards under the Porter-Cologne Act are limited to those requirements that are "reasonably required," and in connection with water quality conditions, that "could reasonably be achieved through the coordinated control of all factors which affect water quality in the area." Having an "open ended" standard ignores the specific standards set forth in the Porter-Cologne Act when issuing Waste Discharge Requirements in the first instance.

The subject "Permit," just like any other "permit," should be designed to specifically allow discharges from the MS4 to receiving waters, so long as the identified conditions in the permit are complied with and are consistent with the Clean Water Act and State law. There is nothing in State or federal law that would allow the imposition of an open-ended standard, or more importantly, an unspecified and unknown standard to be developed in the future, thereby creating a Catch 22 where the violation occurs ***before*** the standard is even known to the alleged violator, in this instance, the Permittee. The draft language in the Permit would effectively establish the standard ***after*** the discharge has occurred. The end result would be to effectively establish an open ended "standard" that is inconsistent with, and in violation of, the express standards already established in the Porter-Cologne Act and the Clean Water Act. Such language is not only in conflict with the Clean Water and the Porter-Cologne Acts, it obviously violates basic substantive rights to due process of law.

At the Workshop (and in ***Finding No. 36*** of the draft Permit), the Regional Board staff relied upon State Board Order WQ-99-05 to support the receiving water limitations language in the current draft. As discussed at the Workshop, however, a review of Order WQ-99-05 shows that the receiving water language in Subsections (1) and (2) does not appear anywhere in Order WQ-99-05. Accordingly, the Regional Board's reliance upon Order WQ-99-05 is misplaced, as the language in the draft Permit far exceeds Order WQ-99-05.

In addition, given that Order WQ-99-05 is an order issued by the State Board to all Regional Boards within the State, and thus is an order or standard of "general application," the State Board was required to have complied with the requirements of the Administrative Procedures Act, Government Code Section 11340, *et seq.* (the "APA") before issuing such an Order. Without compliance with the APA, the underlying basis for the language on receiving water limitations, is misplaced.

J. THE DRAFT PERMIT IMPROPERLY ATTEMPTS TO AMEND STATUTORY AND REGULATORY REQUIREMENTS UNDER CEQA AND STATE GENERAL PLAN REQUIREMENTS, IN VIOLATION OF THE STATE LAW AND THE ADMINISTRATIVE PROCEDURES ACT.

Under Section 11, on page 34, of the draft Permit, the Regional Board attempts to require Permittees to "modify planning procedures for preparing and reviewing CEQA documents to consider potential storm water impact and provide for appropriate mitigation, with immediate effect." These provisions go on to provide that "the CEQA guidelines shall require consideration of the following, . . ." Thus, it is apparent from the plain language in the draft Permit itself, that the Regional Board, is attempting to modify the "CEQA guidelines," which are regulations under Title 15 of the California Code of Regulations. Not only does the Regional Board not have any authority to modify the regulations to CEQA, if it were to do so, it would have to do so through compliance with the requirements of the Administrative Procedures Act.

Similarly, under Section 12, entitled "General Plan Update," on page 35 of the draft Permit, the Regional Board seeks to require each Permittee to "update appropriate elements of its General Plans to include watershed and storm water quality and quantity management considerations no later than [540 days from permit adoption date] appropriate elements include, but are not limited to, water quality protection, development goals and policies, open space goals and policies, preservation and integration with natural features and water conservation policies."

The requirements of a Cities General Plan are based on the elements identified by the State Legislature in the California Government Code and regulations thereto, and any attempt by the Regional Board to require additional "elements" in the Cities' General Plans is clearly beyond the authority of a Regional Water Quality Control Board and would certainly violate the requirements of the Administrative Procedures Act.

K. THE REGIONAL BOARD HAS NO AUTHORITY TO ISSUE THE NPDES PERMIT IN QUESTION.

In accordance with California Water Code Section 13160, the State Water Resources Control Board ("State Board") is the designated agency to exercise the powers delegated to the State of California under the Clean Water Act, specifically including the right and obligation to administer the National Pollutant Discharge Elimination System ("NPDES") Program, in accordance with that Memorandum of Understanding entered into by and between the United States Environmental Protection Agency ("EPA") and the State Board dated September 22, 1989. Federal regulations allow NPDES authority within a state to be shared between two or more state agencies, ***but only if each agency has statewide jurisdiction over a class of activities or discharges***. Further, when more that one agency is responsible for issuing NPDES Permits within the state, under the CWA, each agency is required to make a submission meeting the requirements of the federal regulations. (40 CFR § 123.1(g)(1).)

Unlike the State issued General NPDES Industrial and Construction Permits, the subject NPDES Permit is being developed and proposed by the Los Angeles Regional Water Quality Control Board. By definition, the Regional Water Quality Control Board is a regional agency with regional jurisdiction, and thus does not have ***"state-wide jurisdiction over a class of activities or discharges,"*** as required by the federal regulations. Further, nor has the State Board provided regulatory direction to the various regional boards in the State, on the procedural and substantive process to be followed in issuing a National Pollutant Discharge Elimination System Permit. Without such specific regulatory direction by the State Board, and given the mandate of Federal Law that each NPDES issuing agency is to be a ***State agency*** with ***state-wide jurisdiction over a class of activities or discharges***, the Los Angeles Regional Board has no authority to issue the subject Permit.

Finally, the only mechanism for which the State Board may be in a position to delegate the terms of an order, regulation or rule of general application to a class of activities or discharges, i.e., to have a regional agency issue an NPDES Permit on its behalf, is to do so in accordance with the requirements of the Administrative Procedures Act, Gov. Code § 11340 et seq. Presently, however, as this process has not been followed, the Los Angeles Regional Water Quality Control Board has no jurisdiction and no authority to issue the subject Permit.

L. THE REGIONAL BOARD HAS FAILED TO CONSIDER THE TYPES AND SOURCES OF POLLUTANTS IN DEVELOPING THE DRAFT PERMIT, AS REQUIRED BY STATE AND FEDERAL LAW.

Under the Porter-Cologne Act, specifically Water Code Section 13263(a), Waste Discharge Requirements are to be issued "***with relation to the conditions existing in the disposal area or receiving waters upon, or into which, the discharge is made or proposed***." (See Water Code § 13263(a).) In addition, under the CWA, Municipal Separate Storm Sewer System ("MS4") NPDES Permits are to be issued based on information concerning "source identification," "discharge characterization," and "characterization data." (See 40 CFR §§ 122.26(d)(1)(iii), (iv), and (d)(2)(ii) and (iii).) In fact, one of the primary purposes of the permit process is to develop quantitative data on the types and sources of the pollutants in the effected receiving waters, and to thereafter develop particular management programs based on the "quantitative data" developed. (40 CFR § 122.26(d)(2)(iv).)

With the subject draft Permit, the Regional Board has gone beyond its authority under the CWA and State law, as the Board has failed to customize and particularize the terms of the draft Permit to account for the "conditions existing in the disposal area or receiving waters," or for such "source identification," "discharge characterization," and "characterization data," as required by the Act. (Water Code §13263(a); 40 CFR § 122.26(d)(1)(ii)).

In proposing a Permit that is not based on "quantitative data," nor on information on the particular types and sources of pollutants in the subject receiving waters, the Regional Board is acting contrary to the policies and procedures set forth in the Act itself, and in the Porter-Cologne Act. For example, Part 2 of the draft Permit entitled "Receiving Water Limitations," subsections 1 and 2, contains very broad and ambiguous language imposing a prohibition on all discharges from the MS4 "that cause or contribute to the violation of water quality standards or water quality objectives." Yet, the purpose of the CWA in requiring the identification of the sources and pollutants of concern through the development of "quantitative data," is to have these sources of pollutants and pollutants identified in the development process, and to then issue a Permit that considers these pollutants and imposes "controls to reduce the discharge of pollutants to the maximum extent practicable" from the MS4. (42 U.S.C. § 1342(p)(3)(B).) Other language throughout the draft Permit further highlights the problems created by a draft

Permit that was not developed based on the pollutants of concern and the sources of those pollutants, or on the "conditions existing in the disposal area or receiving waters."

M. THE DRAFT PERMIT IMPROPERLY SEEKS TO REGULATE THE APPLICATION OF PESTICIDES, HERBACIDES AND FERTILIZERS, IN AN AREA ALREADY HEAVILY REGULATED.

Under Section 4 on page 42, entitled "Landscape and Recreational Facilities Management," the draft Permit attempts to impose protocol and prohibitions on Permittees' application of pesticides, herbicides and fertilizers. Again, the Regional Board has attempted to regulate an area already heavily regulated under State and federal law (for example see Section 14151, *et seq.* of the California Food and Agriculture Code).

Beyond the fact that the Regional Board has no such authority and that it is attempting to regulate within an area already heavily regulated, the Regional Board's actions in this regard would be ***preempted*** by State and federal legislation, and would be outside the authority of an appointed, unelected regional body, that is not charged with any authority to regulate the field. Further, there are ***no findings*** anywhere within the draft Permit itself that would support such an unauthorized underground regulation.

Finally, the California Environmental Protection Agency, under existing State legislation, already regulates the storage and application of pesticides throughout the State. Before the Regional Board, or any other unelected body of the State, attempts to impose regulations that in any way differ from existing requirements on the application of pesticides, herbicides and fertilizers, the appropriate authorized agencies within the State should be conferred with. In effect, the right hand of the State should only act after knowing of the actions already taken by the left hand of the State.

N. BECAUSE THE DRAFT PERMIT GOES BEYOND THE AUTHORITY PROVIDED UNDER THE CLEAN WATER ACT AND THE PORTER-COLOGNE ACT AND WOULD APPLY TO "NEW SOURCES" AS DEFINED IN THE CLEAN WATER ACT, THE REQUIREMENTS OF CEQA MUST BE COMPLIED WITH.

Water Code Section 13389 exempts the State and Regional boards from compliance with the requirements from CEQA and the adoption of "waste discharge requirements," except requirements for "new sources" as defined in the Clean Water Act. In the instant case, the draft Permit seeks to impose permanent requirements on "new sources" as defined in the Clean Water Act, and thus the requirements of CEQA must be complied with.

Under the Clean Water Act, "new sources" are defined to mean "any source, the construction of which is commenced after the publication of proposed regulations prescribing a standard of performance under this section which will be applicable to such source, if such standard is thereafter promulgated in accordance with this section." (33 U.S.C. § 1316(a)(2).) Further the term "source" is defined to mean "***any building, structure, facility, or installation from which there is or may be the discharge of pollutants.***" (33 U.S.C. § 1316(a)(3).)

Here, to the extent the Regional Board is requiring municipalities to enforce provisions of this Permit and/or to enforce directly or indirectly any State industrial NPDES permit involving a facility constructed after the applicable regulations have been adopted for the standard governing discharges from such facility, the requirements of CEQA apply, and must be complied with.

O. THE DRAFT PERMIT WOULD VIOLATE THE PROHIBITION SET FORTH UNDER CALIFORNIA WATER CODE SECTION 13360.

California Water Code Section 13360(a) provides in pertinent part that:

> "No waste discharge requirement or other order of a Regional Board or the state board or decree of a court issued under this division shall specify the ***design***, location, type of construction, or ***particular manner*** in which compliance may be had with that requirement, order, or decree, and the person so ordered shall be permitted to comply with the order in any lawful manner."

In short, Section 13360 allows a State or regional board to identify the "disease and command that it be cured," but prohibits the State or Regional Board from "dictating the cure." (See *Tahoe Sierra Preservation Council v. State Water Resources Control Board* (1989) 210 Cal.App.3d 1421, 1438.) The .75 inch numerical SUSMP standard is clearly a ***"design"*** standard and a ***particular manner*** in which "compliance may be had," and represents "dictating the cure." As such, it violates the requirements of Water Code Section 13360(a).

In addition, the draft Permit violates Water Code Section 13360(a) in each instance where the Regional Board seeks to impose a ***"particular manner"*** in which compliance may be had. In particular, specific requirements that are imposed on the municipalities to amend CEQA or to add additional elements to the General Plan, or to adopt and implement a particular Business Assistance Program, or to impose particular language in private sale or lease agreements, all constitute a ***"particular manner"*** in which compliance may be had. The imposition of such "particular manners" of compliance violates the express prohibition under Water Code Section 13360(a).

P. NUMEROUS FINDINGS WITH THE DRAFT PERMIT ARE NOT SUPPORTED BY THE EVIDENCE, AND/OR THE FINDINGS DO NOT SUPPORT THE TERMS OF THE PERMIT.

Finding No. 6 in the draft Permit appears to have been drafted to support the inclusion of environmentally sensitive areas into the SUSMP provisions of the draft Permit. As discussed above, there is no authority under State or federal law to allow the Regional Board to per se regulate environmentally sensitive areas, and the State Board has determined that environmentally sensitive areas are already heavily regulated. ***Finding No. 6*** is not supported by the evidence, and itself does not support the ability of the Regional Board to regulate environmentally sensitive areas; nor does it support the need for the Regional Board to regulate "receiving waters" differently in environmentally sensitive areas than in other areas.

In ***Finding No. 7***, the Regional Board asserts that "[p]ercentage impervious cover is a reliable indicator and predictor of potential water quality degradation expected from new development." Yet, there is no indication that the Board has considered the need for the proposed development, such as the need for additional housing in the region, particularly low or moderate income housing, or other development as may be necessary to serve the needs of the community. In short, the implication of ***Finding No. 7*** is that ***no development*** creating additional impervious surfaces should be permitted, as such will result in a potential for water quality degradation.

Further, it does not appear that there has been any balancing of the potential need for the purposed project on the community in comparison to the potential adverse impact, if any, on the water quality from the development. ***Finding No. 7***, thus violates the review process under the California Environmental Quality Act, as the Regional Board has failed to consider all potential environmental impacts created by the adoption of the draft Permit, and such findings, and has determined without environmental review, that the addition of any impervious surface is overridden by the potential detrimental impact on water quality.

Also, in ***Finding No. 41***, the draft Permit provides that "[a] ministerial project may be made discretionary by adopting local ordinance provisions that create decision-making discretion." ***Finding No. 41*** seems to imply that not only do municipalities have the authority to make all ministerial projects, discretionary, that it would make some regulatory or legal sense to do so. In short, the draft Permit suggests that every building permit, grading permit, plumbing permit, electrical permit and occupancy permit, should be issued directly by the City Council, the Board of Supervisors and/or the Flood Control District Boards. With one felt swoop, for the sole purpose of addressing an ***unidentified*** problem with the existing SUSMP program, the Regional Board will have changed the entire planning, building and development process throughout the County of Los Angeles. ***Finding No. 41*** is not supported by the evidence and would have disastrous consequences on planning and development throughout the County.

In ***Finding No. 14***, the Regional Board recognizes "that the Permittees will not be held responsible" for federal, State, regional and other local facilities within its jurisdiction and/or for discharges from such facilities. Unfortunately, there are no provisions anywhere in the draft Permit itself which exempt the Permittees from such responsibility, and, to the contrary, the definition of Industrial/Commercial Facility is defined to include federal, State and municipal facilities. Accordingly, not only are the provisions of the draft Permit dealing with Industrial/Commercial Facilities not supported by the findings, they are expressly controverted by ***Finding No. 14***.

Finding Nos. 16 and ***45*** indicate that the Permit is intended to develop, among other things, a ***"cost-effective storm water control program"*** and ***"cost-effective"*** measures to minimize the discharge of pollutants to receiving waters. Yet, the terms of the draft Permit itself are not based on these findings, as the terms of the draft Permit do not provide the flexibility for ***"cost-effective"*** control measures and programs, such as regional solutions. Further, there are no findings anywhere in the draft Permit to show that its terms are "cost effective" or that "economic considerations" were considered in its development. To the extent that there is evidence that exists to support Finding Nos. 16 and 45, i.e. to support the determinations of the Regional Board that its programs and measures are "cost effective," this information should be disclosed to the public and the public should be given an opportunity to review the same. To date, no such evidence has been provided.

Finding No. 16 also provides that it is the intent of the Permit to "minimize the discharge of pollutants in storm water from the permitted areas in the County of Los Angeles, to the waters of the United States." This finding plainly contravenes the clear standard set forth under the Clean Water Act, whereby the Permit is required to be designed to control the discharge of pollutants from MS4 ***"to the maximum extent practicable."***

Finding No. 21 states that EPA regulations "require that Permittees implement a program to monitor and control pollutants in discharges to the municipal system from industrial and commercial facilities that contribute a substantial pollutant load to the MS4." As discussed above, this is not an accurate representation of the regulations, as the referenced regulations only apply to the control of pollutants and discharges of storm water runoff associated with ***industrial activities***, as specifically defined in the regulations themselves (40 CFR §122.26(b)(14) which do not include "commercial" facilities), and to industrial facilities that the municipality determines are "contributing a substantial pollutant loading to the municipal storm sewer system." (See 40 CFR 122.26 (d)(2)(iv)(c).) The requirement that the Permittees implement a program to monitor and control pollutants and discharges from all "industrial/commercial facilities" is not supported by the regulations and is directly contrary to the CWA regulations cited in ***Finding No. 21***.

Finding No. 29 provides that the Regional Board on October 13, 1998 "approved recommended best management practices for industrial/commercial facilities (Resolution

No. 98-08)." A review of Resolution No. 98-08, however, shows that it only applies to a few select "commercial" facilities, and further, only imposes best management practices on certain specified industrial facilities and/or activities. The definition of "Industrial/Commercial Facility" under the draft Permit is far broader than the facilities described in Resolution No. 98-08, and the draft Permit plainly exceeds the terms of Resolution No. 98-08.

Finding No. 31 implies that a December 26, 2000 memorandum from the State Board's Chief Counsel constitutes "a state-wide policy" memorandum, and is cited to support the proposition that the SUSMP requirements are to include "ministerial projects, projects in an environmentally sensitive areas, and retail gasoline outlets." The December 26, 2000 directive from the State Board's Chief Counsel, if it is to be followed, can only be followed after the requirements of the Administrative Procedures Act ("APA") have been complied with, which they have not.

Finding No. 37 references California Water Code Section 13263(a) and the provisions of said section which require the Regional Board to "take into consideration the beneficial uses to be protected and the water quality objectives reasonably required for that purpose." Yet, ***Finding No. 37***, fails to cite the complete language within Water Code Section 13263(a), and specifically fails to include the need for the objectives identified in Water Code Section 13241 to be considered, including the need to consider "economic considerations," and "the need for developing housing within the region," along with "water quality conditions that could ***reasonably*** be achieved through the coordinated control of all factors which effect water quality in the area." In addition, under Section 13263(a), the waste discharge requirements are to take into consideration "the water quality objectives ***reasonably*** required for that purpose...," and are to be considered in "relation to the conditions existing in the disposal area or receiving waters upon, or into which the discharge is made or proposed." (Water Code §13263(a).) ***Finding 37*** thus, omits critical language from the standard for the issuance of waste discharge requirements, and the Permit fails to follow the standards set forth in Section 13263. The findings within the draft Permit do not support the Regional Board's consideration of these factors and other important factors, and the terms of the draft Permit do not comply with the requirements of Water Code Section 13263.

In ***Finding No. 43***, the Regional Board contends that the Permit is "to protect the beneficial uses of receiving waters in Los Angeles County," and that to meet this objective, the Order requires implementation of BMPs intended to reduce pollutants in storm water and urban runoff such that ultimately their discharge will neither cause violations of water quality objectives nor create conditions of nuisance in receiving waters." This standard, however, is contrary to the standards set forth under the Porter-Cologne Act, as discussed above, and the standards set forth in the Clean Water Act, which require the control of discharges of pollutants from MS4s "to the maximum extent practicable." (42 USC § 1342(p)(3)(B).)

Finding No. 43 is not supported by State or federal law, and moreover, as discussed above in connection with the receiving water limitation language in the draft Permit, would result in a scenario where the standards under the Permit are not established until after an alleged violation occurs, thereby denying the Permittee its right to substantive due process of law, and thereby denying the municipalities a "meaningful" Permit that allows for the discharge of waste and the discharge of pollutants from its MS4, as envisioned by both the Porter-Cologne and the Clean Water Acts.

In short, the findings set forth throughout the draft Permit are not supported by the evidence in the record, and the findings themselves do not support the proposed terms of the draft Permit. Further, there are a number of provisions throughout the Permit, which are not supported by either supportable or unsupportable findings.

Q. THE DRAFT PERMIT FAILS TO INCLUDE A FINDING OF CONSISTENTLY WITH THE AREA-WIDE WASTE TREATMENT MANAGEMENT PLAN.

The Southern California Association of Governments ("SCAG") is a joint powers authority, created pursuant to California Government Code Section 6500, *et seq.*, and is an agency that represents 184 cities in Southern California, in the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura and Imperial. SCAG's region encompasses some 38,000 sq. miles and a population of over 15,000,000 residents. SCAG has been designated as an Area-Wide Waste Treatment Management Planning Agency, pursuant to 33 USC Section 1288(a)(2), i.e., Section 208 of the Clean Water Act. SCAG is therefore an agency responsible for continuing an area-wide waste treatment management planning process. Thus, under Section 208 of the Clean Water Act, particularly subsection (e), before an NPDES Permit can be issued, the issuing agency must make a finding of consistency with the area-wide waste treatment management plan. (42 U.S.C. § 1288(e).) In the instant case, the draft Permit fails to include a finding of consistency with the Area-Wide Waste Treatment Management Plan, and as such, Section 208 of the Clean Water Act has not been complied with.

We hope the above comments are helpful to you in your review of the draft Permit, and encourage you to consider these comments in incorporating appropriate changes into a final Permit, so that the Permit ultimately adopted by the Regional Board is consistent with requirements of State and federal law, and results in a legally supportable and effective Storm Water Program for the region.

Sincerely,

RUTAN & TUCKER

Richard Montevideo

RM:kmh
Enclosures

EPA United States Environmental Protection Agency

Storm Water

LINKS

EPA Home

Region 4

Water Mgmt. Division

Water Prgrms. Enforcemnt. Branch

Clean Water Act Enf. Section

Storm Water

Federal Register

Storm Water Discharges Associated with Industrial Activity 40 C.F.R. 122.26(b)(14)

The term "Storm Water Discharges Associated with Industrial Activity", defined in federal regulations 40 CFR 122.26(b)(14)(i)-(xi), determined which industrial facilities are potentially subject to Phase I of the storm water program. If you are subject to the program you need to apply for a permit. The definition uses either SIC (Standard Industrial Classification EXIT EPA) codes or narrative descriptions to characterize the activities. You are responsible for identifying your facility's SIC code. The definition's 11 categories ((i) - (xi)) are listed below. You should review these 11 categories and decide if your type of facility is described by any of them (either by SIC code or by narrative descriptions). Please note that categories iii, viii, and xi have special conditions, or exceptions (described below) which may make a facility NOT subject to the program, and therefore not required to apply, even though the facility's activity matches one of the SIC codes.

category (i)

Facilities subject to storm water effluent limitations guideline, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N (except facilities with toxic pollutant effluent standards which are exempted under category (xi)). These types of facilities include the following:

```
40 CFR Subchapter N
================================================
405 Dairy products processing
406 Grain mills
407 Canned & preserved fruits & veg. processing *
408 Canned & preserved seafood processing
409 Beet, crystalline & liquid cane sugar refining
410 Textile mills
411 Cement manufacturing
412 Feedlots (use CAFO General Permit)
414 Organic Chemicals plastics and synthetic fibers
415 Inorganic chemical manufacturing *
417 Soap and detergent manufacturing
418 Fertilizer manufacturing
419 Petroleum refining
420 Iron and steel manufacturing
421 Nonferrous metal manufacturing
422 Phosphate manufacturing *
423 Steam electric power
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EXHIBIT A

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424 Ferroalloy manufacturing *
425 Leather tanning and finishing
426 Glass manufacturing *
427 Asbestos manufacturing
428 Rubber manufacturing
429 Timber products processing
430 Pulp, paper, and paperboard *
431 Builder's paper and board mills
432 Meat products
433 Metal finishing
434 Coal Mining *
436 Mineral mining & processing *
439 Pharmaceutical manufacturing *
440 Ore mining & dressing *
443 Paving and roofing materials
446 Paint formulating
447 Ink formulating
455 Pesticide Chemicals *
458 Carbon Black manufacturing
461 Battery manufacturing
463 Plastics molding and forming
464 Metal molding and casting
465 Coil coating
466 Porcelain enameling
467 Aluminum forming
468 Copper forming *
469 Electrical & electronic component
471 Nonferrous metal forming & powders
   * some facilities in group do not have limits or
     standards, see 40 CFR subchapter N to verify.
```

category (ii)

```
SIC Code
========
24   lumber and wood products (except 2434 wood
      kitchen cabinets, see (xi))
26   paper & allied products (except 265 paperboard
      containers, 267 converted paper, see (xi))
28   chemicals & allied products (except 283 drugs,
      see (xi))
29   petroleum & coal products
311  leather tanning & finishing
32   stone, clay & glass production (except
      323 products of purchased glass, see (xi))
33   primary metal industry
3441 fabricated structural metal
373  ship and boat building and repair
```

category (iii) Mineral Industry

Facilities classified as SIC codes 10-14 including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11(1) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17,

1990), and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, benefication, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim).

```
SIC Code
10  metal mining (metallic mineral/ores)
12  coal mining
13  oil and gas extraction
14  non-metallic minerals except fuels
```

Oil and gas operations that discharge contaminated storm water at any time between November 16, 1987 and October 1, 1992, and that are currently not authorized by an NPDES permit, must apply for a permit. Operators of oil and gas exploration, production, processing, or treatment operations or transmission facilities, that are not required to submit a permit application as of October 1, 1992 in accordance with 40 CFR 122.26(c)(1)(iii), but that after October 1, 1992 have a discharge of a reportable quantity of oil or a hazardous substance (in a storm water discharge) for which notification is required pursuant to either 40 CFR 110.6, 117.21, or 302.6, must apply for a permit.

category (iv) Hazardous Waste

Hazardous waste treatment, storage, or disposal facilities including those that are operating under interim status or a permit under Subtitle C of RCRA.

category (v) Landfills

Landfills, land application sites, and open dumps that receive or have received any industrial waste (waste that is received from any of the facilities described under categories (i) - (xi)) including those that are subject to regulations under Subtitle D of RCRA.

category (vi)

Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as SIC 5015 (used motor vehicle parts) and 5093 (scrap and waste materials).

category (vii) Steam Electric Plants

Steam electric power generating facilities, including coal handling sites.

category (viii) Transportation

Transportation facilities classified by the SIC codes listed below **which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations**. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under categories (I)-(vii) or (ix)-(xi) are associated with industrial activity, and need permit coverage.

```
SIC Code
40   railroad transportation
41   local and interurban passenger transit
42   trucking & warehousing (except 4221-25,
      see (xi))
43   US postal service
44   water transportation
45   transportation by air
5171 petroleum bulk stations and terminals
```

category (ix) Treatment Works

Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the Clean Water Act.

category (x) Construction

Construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than 5 acres of total land area which are not part of a larger common plan of development or sale.

The construction "operator" must apply for permit coverage under the General Storm Water Permit for Construction Activities. The "operator" is the party or parties that either individually or taken together meet the following two criteria: 1) they have operational control over the site specification; 2) they have the day-to-day operational control of those activities at the site necessary to ensure compliance. For a typical commercial construction site, the owner and general contractor must both apply. For a typical residential development, the developer and all builders must apply. Each builder must apply even if they individually disturb less than 5 acres if the overall development is 5 or more acres. Only one Pollution Prevention Plan is required per site even though there may be multiple parties.

category (xi) Light industry

Facilities classified by the following SIC codes:

SIC Code	
20	food and kindred product
21	tobacco products
22	textile mill products
23	apparel and other textile product
2434	wood kitchen cabinets
25	furniture and fixtures
265	paperboard containers and boxes
267	miscellaneous converted paper products
27	printing and publishing
283	drugs
285	paints and allied products
30	rubber and miscellaneous plastic
31	leather and products (except 311)
323	products of purchased glass
34	fabricated metal products (except 3441)
35	industrial machinery and equipment
36	electronic and other electric equipment
37	transportation equipment (except 373)
38	instruments and related products
39	miscellaneous manufacturing
4221	farm product storage
4222	refrigerated storage
4225	general warehouse and storage

(and which are not otherwise included in categories (ii) - (x)) with storm water discharges from all areas (except access roads and rail lines) where material handling, equipment, or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are **exposed to storm water**. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate produce, finished product, by-product, or waste product.

Note:

Standard Industrial Classification (SIC) codes are in the process of being replaced by the newer North American Industry Classification System (NAICS). Until EPA modifies regulations referring to the newer NAICS system, the older SIC codes will continue to be utilitized.

Standard Industrial Classification codes

EXIT EPA

North American Industry Classification System EXIT EPA

R0002150

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R0002151

State Water Resources Control Board

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Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

October 12, 2000

OCT 1 6 RECD

CERTIFIED MAIL

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Dear Mr. Montevideo, Mr. Deitsch, and Mr. Welch:

PETITION OF PETITIONS OF THE CITIES OF BELLFLOWER, ET AL., CITY OF ARCADIA, AND WESTERN STATES PETROLEUM ASSOCIATION (REVIEW OF JANUARY 26, 2000 ACTION OF THE REGIONAL BOARD, AND ACTIONS AND FAILURES TO ACT BY BOTH THE REGIONAL BOARD AND ITS EXECUTIVE OFFICER PURSUANT TO ORDER NO. 96-054, PERMIT FOR MUNICIPAL STORM WATER AND URBAN RUN-OFF DISCHARGES WITHIN LOS ANGELES COUNTY [NPDES NO. CAS614001]), LOS ANGELES REGION: ADOPTED ORDER
SWRCB/OCC FILES A-1280, A-1280(a) and A-1280(b)

Enclosed is a copy of Order WQ 2000-11 which was adopted by the State Water Resources Control Board at its regular business meeting on October 5, 2000.

Sincerely,

Craig M. Wilson

Craig M. Wilson
Chief Counsel

Enclosure

cc: Mr. Dennis Dickerson
Executive Officer
Los Angeles Regional Water Quality Control Board
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Interested Persons Mailing List

EXHIBIT B

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER: WQ 2000 - 11

In the Matter of the Petitions of
THE CITIES OF BELLFLOWER, ET AL., THE CITY OF ARCADIA, AND WESTERN STATES PETROLEUM ASSOCIATION
Review of January 26, 2000 Action of the Regional Board
and
Actions and Failures to Act
by both the
California Regional Water Quality Control Board,
Los Angeles Region and Its Executive Officer
Pursuant to Order No. 96-054,
Permit for Municipal Storm Water and Urban Run-Off Discharges Within
Los Angeles County
[NPDES NO. CAS614001]

SWRCB/OCC FILES A-1280, A-1280(a) and A-1280(b)

BY THE BOARD:

On July 15, 1996, the Los Angeles Regional Water Quality Control Board (Regional Water Board) issued a revised national pollutant discharge elimination system (NPDES) permit in Order No. 96-054 (permit) to the 85 incorporated cities and the county within Los Angeles County (the County).[1] The permit covers storm water discharges from municipal separate storm sewer systems throughout the County.[2]

[1] This was the second storm water permit adopted for Los Angeles County and its cities. The first permit was the subject of an earlier Order. (In the Matter of Natural Resources Defense Council, Inc., Order WQ 91-04). In this permit, the County is designated as the Principal Permittee, and each city is designated as a permittee. The County is required to submit various documents on behalf of all of the permittees.
[2] The Regional Water Board has since issued a separate permit for one city, Long Beach. The relevant provisions of the Long Beach permit are similar to those in Order No. 96-054.

The permit contains provisions for the regulation of storm water discharges from development planning and construction.[3] Pursuant to these provisions, the County was required to submit Standard Urban Storm Water Mitigation Plans (SUSMPs).[4] The SUSMPs are plans that designate best management practices (BMPs) that must be used in specified categories of development projects. The County submitted SUSMPs, but the Regional Water Board approved the SUSMPs only after making revisions. The Executive Officer issued the revised SUSMPs on March 8, 2000.[5]

On February 25, 2000, the State Water Resources Control Board (State Water Board or Board) received a petition for review of the actions and failures to act regarding the SUSMPs from a number of cities, the Building Industry Association of Southern California and the Building Industry Legal Defense Foundation (jointly referred to as Cities). A second petition was received from the City of Arcadia. And a third petition was received from the Western States Petroleum Association (WSPA). On April 7, 2000, the petitioners filed amendments to their petitions, concerning the March 8, 2000 issuance of the SUSMPs. The Cities' amendment also revised the list of cities included in the petition. The Cities' petition now includes 32 cities. The petitions are legally and factually related, and have therefore been consolidated for purposes of review.[6] The petitioners also requested a stay of the SUSMPs. This request was denied by letter, dated May 11, 2000.

[3] Permit, Part 2.III. These provisions focus more on post-construction impacts of development than on discharges from construction activities.
[4] Permit, Part 2.III.A.1.c.
[5] These are referred to herein as the Final SUSMPs. The Final SUSMPs also apply to Long Beach, even though it is subject to a separate permit.
[6] Cal. Code of Regs., tit. 23, section 2054.

On June 7 and 8, 2000, the Board held a hearing in Torrance. Several entities, including the petitioners, the Regional Water Board, and several environmental groups[7], were designated parties. The evidence from that hearing has been included in the record before the Board. The record for comments on the petition was kept open until the end of the hearing. The parties were allowed to submit post-hearing briefs.[8]

I. BACKGROUND

In prior Orders[9] this Board has explained the need for the municipal storm water programs and the emphasis on BMPs in lieu of numeric effluent limitations. The emphasis for preventing pollution from storm water discharges is still on the development and implementation of effective BMPs, but with the expectation that the level of effort will increase over time. In its Interim Permitting Approach[10], the United States Environmental Protection Agency (U.S. EPA) stated that first-round permits should include BMPs, and expanded or better-tailored BMPs in subsequent permits where necessary to attain water quality standards. Dischargers, consultants, and academic institutions in California and nationwide have conducted numerous studies on the effectiveness of BMPs and appropriate design standards. While many questions are still

[7] The environmental groups are Natural Resources Defense Council, Inc., Santa Monica BayKeeper, and Heal the Bay.

[8] There are several documents that were not timely received and, therefore, are not made a part of the record before the Board. The hearing notice specified that all evidence from parties must be received by May 31, 2000. The Regional Water Board submitted documents on June 6, 2000. The hearing notice specified that policy statements were due by the close of the hearing. Several comment letters were received June 12, 13, and 19, 2000. None of these submittals are a part of the record. The post-hearing briefs were subject to a 10-page limit. The environmental groups submitted objections to the post-hearing brief submitted by the Cities. First, the environmental groups challenge the length of the brief. All briefs were subject to a 10-page limit. The Cities submitted a 10-page brief, with a 22-page attachment showing extensive proposed revisions to the SUSMPs. This submittal violates the page limit, and only the brief is considered part of the record. Second, the environmental groups claim that an e-mail message referred to by the petitioners is subject to attorney-client privilege and should not have been used in this hearing. This e-mail message, from the Regional Water Board's counsel to one of its engineers, was placed in the Regional Water Board's administrative record and submitted to the State Water Board. Any privilege that may have attached to the message has been waived and no longer exists. Finally, the post-hearing brief from the City of Arcadia was received late and will not be considered. Documents submitted late for interim deadlines (such as the deadline for submitting responses to the petitions), have been included in the record.

[9] See, especially Orders WQ 91-03 (In the Matter of Citizens for a Better Environment et al.) and WQ 91-04.

[10] Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits. (61 Federal Register 57425.)

outstanding, more is expected of municipal dischargers, and many are implementing more effective programs.

While storm water management plans are improving, our knowledge of the impacts is also growing. Urban runoff has been determined to be a significant contributor of impairment to waters throughout the state. In Los Angeles specifically, beach closures are sometimes associated with urban runoff. In adopting the SUSMPs, the Regional Water Board took note of the urgent need for preventing further pollution from urban runoff and storm water discharges.

It is important to emphasize the role of the SUSMPs within the totality of regulating storm water discharges, and the purpose of these particular control measures. The requirement to prepare SUSMPS was part of the development controls in the permit. In addition to development controls, the permit requires education, public outreach, programs to restrict illicit connections and discharges, and controls on public facilities. In the context of the entire effort required by the permit, the development controls can be seen as preventing the existing situation from becoming worse.

The Final SUSMPs include a list of mandatory BMPs for nine categories of development. There are provisions that are applicable to all categories and lists of BMPs for individual categories. Requirements applicable to all categories include provisions to limit erosion from new development and redevelopment, requirements to conserve natural areas, protection of slopes and channels, and storm drain stenciling. Examples of BMPs specific to categories of discharge include design of loading docks for commercial projects and design of fueling areas for retail gasoline outlets. In most respects, the Final SUSMPs were similar to those proposed by the County. The significant departures were the inclusion of a numeric design standard for structural or treatment control BMPs, and the inclusion of certain types of projects that were not

covered in the County's proposal. The design standard creates objective and measurable criteria for the amount of runoff that must be treated or infiltrated by BMPs.

The record indicates that the purpose of the development controls, including the SUSMPs, is not simply to prevent pollution associated with construction runoff. As the petitioners point out, construction discharges are already subject to this Board's Statewide Construction Permit. The development controls in the SUSMPs, on the other hand, focus on post-construction runoff. They are aimed at limiting not just the pollutants in runoff from the new development, but also the volume of runoff that enters the municipal storm sewer system. By limiting runoff from new development, the SUSMPs prevent increased impacts from urban runoff generally. There is adequate technical information in the record to show that by controlling the volume of runoff from new development, BMPs can be effective in reducing the discharge of pollutants in storm water runoff.

The Procedure for Adopting the SUSMPs

The permit requires a program for controls on Development Planning and Construction. It involved a number of submissions by the County in consultation with the Cities. The first step was submission of a checklist for determining priority projects and exempt projects. The checklist was due on January 30, 1998. A list of recommended BMPs for development projects was also due on that date. The SUSMPs were due within six months of approval of the BMP list, and were to incorporate BMPs for certain categories of development. Following approval of the SUSMPs, the cities and County were to implement development programs for priority projects, consistent with the BMP list and the SUSMPs.

The BMP list was not approved until April 22, 1999. Thereafter, the County submitted proposed SUSMPs on July 22, 1999. The Regional Water Board held a public workshop on

August 10, 1999. Following the workshop, the County submitted revisions to the SUSMPs on August 12, 1999. On August 16, 1999, the Regional water Board gave notice that it would discuss the SUSMPs in a public meeting on September 16, 1999. There was significant discussion at that meeting regarding the intent of the Executive Officer to approve the SUSMPs, but with revisions including a numeric design standard. At the conclusion of the meeting, the Regional Water Board members asked the Executive Officer to revise the SUSMPs and bring them back to another meeting. On December 7, 1999, the Executive Officer circulated revised SUSMPs for public review. This document incorporated a numeric design standard and made other revisions to the permittees' proposal. The Regional Water Board held a hearing on the SUSMPs on January 26, 2000. At that meeting, the Regional Water Board endorsed the SUSMPs revised by the Executive Officer, but directed him to make further changes. The Executive Officer issued the Final SUSMPs on March 8, 2000.

The Contents of the Final SUSMPs

The permit provides that the SUSMPs must incorporate the appropriate elements of the BMP list and, at a minimum, apply to seven development categories: 100-plus home subdivisions; 10-plus home subdivisions; 100,000-plus square foot commercial developments; automotive repair shops; retail gasoline outlets; restaurants; and hillside single-family dwellings.

The SUSMPs proposed by the County applied to these seven categories. Various BMPs applied to the different categories, and the SUSMPs contained narrative mitigation requirements for source control and treatment. The July proposals stated:

> "The development must be designed so as to mitigate (infiltrate and/or treat) the site runoff generated from impervious directly connected areas that may contribute pollutants of concern to the storm water conveyance system."

There were no numeric design criteria for mitigation. According to various participants, earlier County drafts had included design standards to mitigate flows from 0.6-inch storm events. But any numeric criteria had been removed from the version that was submitted.

In its revised SUSMPs, submitted on August 12, the County explained in its cover letter that the mitigation language did not mean that all runoff must be mitigated. Rather, the County's intent was to omit a numerical standard from the SUSMPs. The revised SUSMPs no longer referred to mitigation at all. Instead, the following language replaced the mitigation requirement:

> "The development must be designed so as to minimize, to the maximum extent practicable (MEP), the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas (DCIA), to the storm water conveyance system as approved by the building official."

The Final SUSMPs, as approved by the Executive Officer and the Regional Water Board, included several revisions from the County's submittal. The revision that is of greatest concern to the petitioners is the addition of Design Standards for Structural or Treatment Control BMPs.[11] The design standards require that developments subject to the SUSMPs shall be designed to mitigate storm water runoff (by treatment or infiltration) from one of the following:

> "1. The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area..., or
>
> 2. The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment..., or
>
> 3. The volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or
>
> 4. The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event."

[11] The Final SUSMPs also include the narrative language quoted from the County's August 22, 1999 proposal.

The Final SUSMPs also applied to two additional categories of development: parking lots over 5,000 square feet or with 25 or more spaces and exposed to storm water, and to developments in environmentally-sensitive areas. Other revisions included application to all projects in the categories instead of discretionary projects only and the definition of redevelopment.

II. CONTENTIONS AND FINDINGS[12]

Contention: The petitioners contend that the Regional Water Board erred in not complying with the Administrative Review Process within the permit, and acted arbitrarily and capriciously and in violation of the Clean Water Act and state law.

Finding: The permit required the County, in consultation with the cities subject to the permit, to submit SUSMPs. The permit includes some general minimum requirements for the SUSMPs.[13] The Executive Officer is granted authority to approve the SUSMPs.[14]

The permit also contains an administrative review process.[15] The permit states that the administrative review process "formalizes the procedure for review and acceptance of reports and documents" and "provides a method to resolve any differences in compliance expectations between the Regional Board and Permittees, prior to initiating enforcement action."[16] Following this introductory statement, the permit includes two procedures. The first is for review and approval or disapproval of reports and documents. The second is the dispute resolution section that must be followed prior to enforcement action.

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[12] This Order does not address all of the issues raised by the petitioners. The Board finds that the issues that are not addressed are insubstantial and not appropriate for State Water Board review. (See *People v. Barry* (1987) 194 Cal.App.3d 158, [239 Cal.Rptr. 349], Cal. Code Regs., tit. 3, § 052.)
[13] Permit, Part 2, III.A.1.c.
[14] Permit, Part 2, III.A.2.
[15] Permit, Part 2, I.G.
[16] *Id.*

The process for review of documents that are subject to the Executive Officer's approval is that the Executive Officer will notify the permittees of the results of the review and approval or disapproval within 120 days. If the Executive Officer does not do so, the permittees must notify the Regional Water Board of their intent to implement the documents without approval. The Executive Officer then has 10 days to respond, or the permittees may implement the program and the Executive Officer may not make modifications.

The dispute resolution procedure is to be used when the Executive Officer determines that a permittee's storm water program is insufficient to meet the permit's provisions. The Executive Officer must send a "Notice of Intent to Meet and Confer" with the permittee. A meet and confer period then ensues, resulting in a written "Storm Water Program Compliance Amendment (SWPCA)." The permittee is provided time to comply with the SWPCA. The Executive Officer is not allowed to take enforcement action against a permittee until the Executive Officer notifies the permittee in writing that the administrative review process has been exhausted and that a violation exists warranting enforcement.

The petitioners contend that the Executive Officer failed to notify the permittees that their SUSMPs were inadequate within 120 days of its submittal. The petitioners also argue that, by revising the SUSMPs without pursuing the dispute resolution process, the Regional Water Board "violated" the terms of the permit.

The provision for review of documents, which clearly includes the SUSMPs, requires that the Executive Officer notify the permittees of the results of the review and approval or disapproval within 120 days. The County submitted the revised SUSMPs on August 12, 1999. Within 120 days, the Regional Water Board held a workshop where staff expressed their concerns with the SUSMPs. Also within 120 days the Regional Water Board itself held a public

meeting where there was extensive discussion and concern by board members that the SUSMPs did not include a numeric standard. And, prior to any notification by the permittees that they would proceed with implementing their SUSMPs, the Regional Water Board held a hearing January 26, 2000, where it directed the Executive Officer to issue the SUSMPs with revisions. The Executive Officer did so on March 8, 2000.

It is clear from the record that the Executive Officer, and the Regional Water Board itself, did inform the permittees that the SUSMPs were inadequate. There was no requirement for a specific form for expressing disapproval of documents. The extensive discussion and meetings on the need for revisions to the SUSMPs, and the Executive Officer's approval of revised SUSMPs, plainly refutes the allegation that the Regional Water Board never notified the permittees of its disapproval of the County's proposed SUSMPs.

The permittees also claim that the Regional Water Board "violated" the permit by failing to institute the meet and confer process.[17] The dispute resolution process, which includes meet and confer, did not apply to the decision to disapprove the proposed SUSMPs. That process is only required when the Regional Water Board ultimately takes an enforcement action against a permittee. It is separate from the process for review and approval or disapproval of documents, and does not even appear to relate to possible enforcement actions for submission of inadequate documents. This is illustrated by the fact that the provision regarding documents refers to submittals from both the Principal Permittee and the individual permittees, while the dispute resolution provision refers only to the permittees. This distinction is relevant because the County is charged with submitting the documents, while the individual permittees are responsible for compliance. A fair reading of the entire section on the administrative review process is that the

[17] We note that permits are issued to permittees to allow discharges to waters of the state. It is only permittees, and not Regional Water Boards, who can be charged with violating permits.

review and approval or disapproval of documents applies to submission of documents by the County on behalf of the cities, while the dispute resolution process applies to enforcement actions against any permittees for failing to implement adequate programs.

Contention: The petitioners contend that the Regional Water Board was not authorized to revise the SUSMPs to add more stringent requirements.

Finding: The petitioners contend that the mitigation standards in the SUSMPs are more stringent than the requirement in the permit to reduce pollutants in storm water runoff to the maximum extent practicable (MEP)[18]. The issue of what level of protection constitutes MEP will be discussed *Infra*, in the discussion of the reasonableness of the numeric standards. But the petitioners also make certain procedural claims on this point. They argue that in approving the BMP list, the Regional Water Board determined that those BMPs constituted MEP and that the Board could not add additional BMPs in the SUSMPs. They also contend the Regional Water Board itself had no authority to "usurp" the Executive Officer's role in reviewing the SUSMPs.[19] Finally, the petitioners contend that the Regional Water Board was not authorized to mandate a program for the permittees without amending the permit.

The permit requires the County to submit a list of BMPs for approval. The Regional Water Board approved this list. Following approval of the list, the County was required to submit the SUSMPs, which must "incorporate the appropriate elements of the recommended BMPs list."[20] The petitioners contend that by approving the list, the Regional Water Board determined that those BMPs constituted MEP, and that under the terms of the permit the Regional Water Board could not require additional BMPs.

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[18] The technology-based standard for controls under municipal storm water permits is MEP. For a fuller discussion of this standard, see Order WQ 91-03.

[19] It is undisputed that, at its January 26, 2000 meeting, the Board directed the Executive Officer to make additional revisions to the SUSMPs.

[20] Permit, Part 2, III.A.1.c.

In addressing this contention, we face what appears to be a fundamental misunderstanding of the numeric design standards on the part of the petitioners. The design standards are objective criteria that developers must achieve in designing their BMPs. The design standards are not separate BMPs. The standards tell what magnitude of storm event the BMPs must be designed to treat or infiltrate. They do not specify the BMPs that must be employed.

The SUSMPs as submitted by the County specify BMPs for various categories of development. Many of these BMPs are designed to minimize the pollutants in storm water runoff, by reducing flow through infiltration or by treatment. Examples of BMPs proposed by the County include infiltration basins and trenches, oil/water separators, and media filtration. The County's proposed SUSMPs also included language requiring minimizing the introduction of pollutants to the storm water conveyance system. That language remains unchanged in the Final SUSMPs. The only significant difference between the two versions of the SUSMPs was that the Regional Water Board established numeric criteria for designing the BMPs.

In adopting the Final SUSMPs, the Regional Water Board based its decision on the MEP standard.[21] The Regional Water Board did not significantly revise the BMP list or specify further the actions that developers must take to comply with the SUSMPs. Thus, we find that the Regional Water Board did not inappropriately revise its determination of what constituted MEP.

The Regional Water Board is the political body responsible for water quality control in the Los Angeles region.[22] While the Regional Water Board may delegate specified powers and duties to its Executive Officer,[23] it can at any time act on its own behalf. The fact that the Board authorized its Executive Officer to approve the SUSMPs in the permit did not mean that the Board thereby denied itself the opportunity to provide direction to the Executive Officer in his

[21] Resolution R-00-02.
[22] Water Code sections 13200 and 13225.
[23] Water Code section 13223.

approval. Such an interpretation of its delegation authority would result in an improper failure of the Board to assume responsibility for water quality in the region.

We also find that the Regional Water Board was authorized to revise the SUSMPs to achieve compliance with the permit's requirements. The SUSMPs are a part of implementation of the permit. Because the permit regulates storm water discharges throughout the entire Los Angeles region and it is implemented by 85 cities and the County, it is obvious that the permit could not spell out every detail of the program for the five-year term of the permit. Instead, the implementation is through the submission, review and approval, and implementation of various programs, including the SUSMPs.[24] Where it receives a submission that it finds is not consistent with the requirements of the permit, it is reasonable for the Regional Water Board to be able to require revisions. The Regional Water Board is not required to amend the permit each time it approves a submittal or approves a submittal with revisions. On the other hand, if the Regional Water Board's action in requiring revisions is inconsistent with the terms of the permit, then the Board should not act without first amending the permit. While the Regional Water Board could have required the County to make the revisions rather than making them itself, we see no harm in the Regional Water Board's approach.

As will be discussed below, in most respects the Final SUSMPs are consistent with the permit. But there are some portions of the SUSMPs that are not consistent, and in those cases the SUSMPs provisions are further revised in this Order.

Contention: The petitioners make various procedural claims, including that they were denied due process, and that the Regional Water Board violated the Administrative Procedure

[24] A fuller discussion of the use of storm water management plans to incorporate a developing program is found in Order No. WQ 91-03.

Act, the California Environmental Quality Act (CEQA), and the California Constitution, Article XIII B, section 6 (regarding state mandates).

Finding: The petitioners point out that at the January 26, 2000 Regional Water Board hearing, there was some confusion over late changes to the SUSMPs and they contend they were not provided adequate opportunity to comment. There was significant discussion of the SUSMPs over several months. We do not agree with the petitioners that a program of this magnitude must necessarily take years to develop. But we are concerned that at the January 26, 2000 hearing, interested persons and permittees were not given adequate time to review late revisions or to comment on them. Given the intense interest in this issue, the Regional Water Board should have diverged from its strict rule limiting individual speakers to three minutes and conducted a more formal process. Such a process should provide adequate time for comment, including continuances where appropriate.[25] But to the extent the Regional Water Board's process caused any harm, this Board cured those harms. We held a two-day hearing in Los Angeles County, where all parties were allowed significant time to present their positions and testimony. In addition, we allowed the introduction of new evidence that had not been presented to the Regional Water Board. At this point, all parties have been afforded a full opportunity to review the Final SUSMPs, to present their positions and evidence, and to engage in cross-examination. The petitioners' due process rights have been protected.

The Board has already addressed the contentions regarding compliance with other laws in prior decisions. The Administrative Procedure Act exempts the adoption of permits from its requirements.[26] While the SUSMPs are not a permit, they are implementing documents for a

[25] For future adjudicative proceedings that are highly controversial or involve complex factual or legal issues, we encourage regional water boards to follow the procedures for formal hearings set forth in Cal. Code of Regs., tit. 23, section 648 et seq.

[26] Government Code section 11352; See, Order No. 95-4 (In the Matter of the City and County of San Francisco).

permit, and are therefore subject to the exemption. Moreover, they are relevant only to this permit, and are not a general rule of application. The constitutional provisions regarding state mandates also do not apply to NPDES permits.[27] As will be explained below, the SUSMPs as revised herein, are consistent with MEP and therefore are federally mandated. The provisions of CEQA requiring adoption of environmental documents also do not apply to NPDES permits.[28] Again, as an implementing document for the permit, there is no requirement for a separate CEQA analysis.[29]

Contention: The petitioners contend that the SUSMPs do not properly apply the maximum extent practicable standard.

Finding: The permit, consistent with Clean Water Act section 402(p)(3)(B)(iii), requires controls to reduce the discharge of pollutants to the maximum extent practicable, or MEP.[30] In approving the Final SUSMPs, the Regional Water Board acknowledged that one of the primary objectives of the municipal storm water program is the requirement to reduce the discharge of pollutants from storm water conveyance systems to the MEP.[31] While all parties appear to agree that the standard for the SUSMPs is MEP, they disagree about what level of effort is necessary to comply with that standard.

The petitioners approach this issue from two angles. First, they contend that the SUSMPs will not provide water quality benefits that reflect MEP. Second, they contend that there could be adverse impacts on groundwater quality that have not been adequately evaluated.

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[27] See, Order No. WQ 90-3 (In the Matter of San Diego Unified Port District).
[28] Water Code section 13389.
[29] We do note with interest the environmental groups' comment that if the permittees believed it was necessary to comply with the APA and CEQA prior to adoption of the SUSMPs, then they themselves would have violated those acts in their submissions of the proposed SUSMPs.
[30] Permit, Finding 13.
[31] Final SUSMPs, at page 2; Resolution No. R-00-02, at page 3.

Storm Water Design Standards as MEP

In adopting the Final SUSMPs, the Regional Water Board found that many rivers and streams in Los Angeles County are impaired for pollutants found in storm water and urban runoff, and that storm water runoff carries pollutants from nearly all types of developed properties.[32] Pollutant loading from the aggregate of development in the basin results in impairments from sediments, metals, complex organic compounds, oil and grease, nutrients, and pesticides.[33] The Final SUSMPs reflect two goals: to reduce the amounts of these pollutants in runoff and to reduce the ability of runoff to act as a conveyance system to deliver more pollutants to receiving waters. The Final SUSMPs, which include lists of BMPs and design standards requiring treatment or infiltration, address these two goals.

Clean Water Act section 402(p)(3)(B)(iii), which sets forth the requirements for establishing MEP in municipal storm water permits, provides that such permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." The United States Environmental Protection Agency (U.S. EPA), in a guidance document, explains that BMPs should be used in first-round storm water permits, and "expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards."[34] The Clean Water Act, as interpreted by U.S. EPA, does require that, in a second-round permit,[35] expanded BMPs may be appropriate. In light of the number of water

[32] Resolution No. R-00-02.
[33] *Id.*
[34] Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits, 61 Federal Register 57425 (1996).
[35] The original permit was issued in 1990. The 1996 permit is a second-round permit.

bodies impaired by runoff in Los Angeles County, it was appropriate to expand the scope of BMPs during the permit term.

The regulations implementing section 402(p) specifically require municipalities to have controls to reduce the discharge of pollutants from their storm sewer systems that "receive discharges from areas of new development and significant redevelopment," including post-construction discharges.[36] Clearly, it was appropriate for the Regional Water Board to require BMPs for new development and significant redevelopment. The permittees, who submitted their own version of SUSMPs with listed BMPs for categories of development, appear to have no real quarrel with this general mandate.

This Board has already endorsed requirements to limit the flow of the "first flush" of storm water, which may contain more significant pollutants.[37] The permittees' own version of the SUSMPs required mitigation of storm water runoff by treatment or infiltration, thus conceding the propriety of these two approaches to lessening the impact of storm water discharges. The crux of the disagreement is that the Regional Water Board added numeric design standards to establish the amount of runoff that must be treated or infiltrated, and required the mandatory application of these standards to categories of development.

The addition of measurable standards for designing the BMPs provides additional guidance to developers and establishes a clear target for the development of the BMPs. The U.S. EPA guidance manual suggests the use of design criteria and performance standards for post-construction BMPs.[38] The numeric criteria the Regional Water Board adopted essentially

[36] 40 CFR section 122.26(d)(2)(iv)(A)(2).
[37] In the Matter of National Steel and Shipbuilding Company, et al., Order WQ 98-07, at slip opinion 7.
[38] Guidance Manual for the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Strom Sewer Systems, at page 6-4 (November 1992).

requires that 85 percent of the runoff from the development be infiltrated or treated.[39] In adopting these standards, the Regional Water Board based its decision on a research review of standards in other states and a statistical analysis of the rainfall in the area. The standard was set to gain the maximum benefit in mitigation while imposing the least burden on developers.[40] In light of the evidence of the use of this or more stringent standards in other states, the expert testimony supporting this standard, the endorsement by U.S. EPA in its comments, and the cost-effectiveness of its implementation (discussed below), the Regional Water Board acted appropriately in determining that the standards reflect MEP.[41]

We also find that the Regional Water Board appropriately applied these standards to seven of the categories listed in the SUSMPs: single-family hillside residences, 100,000 square foot commercial developments, automotive repair shops, restaurants, home subdivisions with 10 to 99 housing units, home subdivisions with 100 or more housing units, and parking lots with 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff.[42] These categories, except for parking lots, were already targeted for special treatment in the permit. The evidence shows that each listed category can be a significant source of pollutants and/or runoff following development. It is appropriate that the design standards apply so that BMPs for these categories of development result in the infiltration or treatment of a significant about of the runoff.

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[39] Four different methods of calculation are permitted, so the percentage of capture may vary slightly.

[40] At the hearing in this matter, Regional Water Board staff explained that the standard was set at the bottom of the "knee" of the curve where the benefits of the mitigation requirements decrease and the cost increases. Other states have set the standard higher along this curve, requiring 90 to 95 percent mitigation.

[41] This conclusion in no way departs from our acceptance of BMPs in lieu of numeric effluent limitations in storm water permits. (See, e.g., Order WQ 91-03 and Order WQ 91-04.) The numeric standard is a design standard for BMPs. It does not quantify or limit the pollutants in the effluent. It also does not specify which of the listed BMPs must be employed.

[42] As discussed below, this Board is revising the SUSMPs to delete the application of the design standards to retail gasoline outlets and to locations within or directly adjacent to or discharging directly to environmentally-sensitive areas.

Potential Impacts on Ground Water

The petitioners contend that infiltration of runoff may lead to ground water pollution, and that the Regional Water Board did not properly consider such potential impacts. The mitigation standards provide for a waiver where there is a risk of ground water contamination because a known unconfined aquifer lies beneath the land surface or an existing or potential underground source of drinking water is less than ten feet from the soil surface.[43] The Final SUSMPs also include a discussion on how to use infiltration so that the risk of contamination of groundwater is reduced, and where infiltration is not appropriate.[44]

The Regional Water Board did consider the potential impacts to groundwater from infiltration, and included appropriate limitations and guidance on its use as a BMP. These provisions will ensure adequate protection of groundwater from any adverse impacts due to infiltration.

Contention: The petitioners contend the Regional Water Board failed to show that the SUSMPs as adopted are cost-effective and that the benefits to be obtained outweigh the costs.

Finding: The petitioners refer to the Preamble to the Phase II storm water regulations[45] as the basis for their economic argument. The quoted language, however, does not wholly support the petitioners' contention. The Preamble states that President Clinton's Clean Water Initiative clarifies "that the maximum extent practicable standard should be applied in a site-specific, flexible manner, taking into account cost considerations as well as water quality effects."[46] It is clear that cost should be considered in determining MEP; this does not mean that

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[43] Final SUSMP, page 14.
[44] *Id.*, at page 15.
[45] 64 Federal Register 68722 and following. These regulations do not apply to the permit, but the general language on MEP is relevant to EPA's interpretation of the standard.
[46] 64 Federal Register 68722, 68732 (December 8, 1999).

the Regional Water Board must demonstrate that the water quality benefits outweigh the economic costs.

While the standard of MEP is not defined in the storm water regulations or the Clean Water Act, the term has been defined in other federal rules. Probably the most comparable law that uses the term is the Superfund legislation, or CERCLA, at section 121(b). The legislative history of CERCLA indicates that the relevant factors, to determine whether MEP is met in choosing solutions and treatment technologies, include technical feasibility, cost, and state and public acceptance.[47] Another example of a definition of MEP is found in a regulation adopted by the Department of Transportation for onshore oil pipelines. MEP is defined as to "the limits of available technology and the practical and technical limits on a pipeline operator . . . ."[48]

These definitions focus mostly on technical feasibility, but cost is also a relevant factor. There must be a serious attempt to comply, and practical solutions may not be lightly rejected. If, from the list of BMPs, a permittee chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a permittee employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP requires permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive. Thus while cost is a factor, the Regional Water Board is not required to perform a cost-benefit analysis.

In reviewing the record, it is apparent that the Regional Water Board did evaluate the cost of the SUSMPs. While the petitioners claim there is no evidence in the record to show the

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[47] 132 Cong. Rec. H 9561 (Oct. 8, 1986).
[48] 49 CFR section 194.5.

SUSMPs are necessary and cost effective, the opposite is true. The record is replete with documentation of costs of pilot mitigation projects, studies from similar programs in other states, and research studies. The Regional Water Board complied with the requirement to consider cost.

The Regional Water Board found that the cost to include BMPs that will meet the mitigation criteria will be one to two percent of the total development cost. This amount appears reasonable, especially in light of the amount of impervious surface already in Los Angeles County and the impacts on impaired water bodies. In considering the cost of compliance, it is also important to consider the costs of impairment. The beach closures in the Los Angeles region, well documented in the evidence, have reached critical proportions. These beach closures clearly have a financial impact on the area, and should be positively affected by the SUSMPs.

We do note that there could be further cost savings for developers if the permittees develop a regional solution for the problem. We recommend that the cities and the County, along with other interested agencies, work to develop regional solutions so that individual dischargers are not forced to create numerous small-scale projects. While the SUSMPs are an appropriate means of requiring mitigation of storm water discharges, we also encourage innovative regional approaches.[49]

Contention: The petitioners have raised contentions regarding details of the SUSMPs, including the amount of time allowed for inclusion of SUSMPs in local ordinances, and their application to both "discretionary" and "non-discretionary" projects. In addition, during the hearing certain ambiguities in the wording of the Final SUSMPs became apparent, including the provisions regarding redevelopment and environmentally-sensitive areas. In this portion of the

[49] We note that the SUSMPs as written do not in any way preclude the development of regional solutions approved by the Regional Water Board as a means to comply with the BMP and design standard requirements.

Order we address these issues and also the application of the design standards to retail gasoline outlets (RGOs) and the waiver funding requirements.

Finding: The testimony at the hearing in this matter revealed that there are specific provisions of the SUSMPs that create confusion as to the types of development projects subject to the mitigation design standards. The petitioners also contend that application of the standards to specific types of development either is unreasonable or is inconsistent with the terms of the permit. The specific requirements are discussed below.

Retail Gasoline Outlets

Petitioner WSPA contends that RGOs should be excluded from the SUSMPs. Its petition raised the same general contentions as the other petitioners, but at the hearing WSPA presented evidence specific to RGOs. In particular, WSPA raised questions about the propriety of applying the design standards for BMPs to RGOs. In considering this issue, we conclude that construction of RGOs is already heavily regulated and that owners may be limited in their ability to construct infiltration facilities. Moreover, in light of the small size of many RGOs and the proximity to underground tanks, treatment may not always be feasible, or safe. The mandatory BMPs that are included in the SUSMPs may be adequate to achieve MEP at RGOs, but the Regional Water Board should add additional mandatory BMPs, such as use of dry cleanup methods (e.g. sweeping) for removal of litter and debris, use of rags and absorbents for leaks and spills, restricting the practice of washing down hard surfaces unless the wash water is collected and disposed of properly, annual training of employees on proper spill cleanup and waste disposal methods, and the inclusion of BMPs to address trash receptacle areas and air/water supply

areas.[50] We conclude that because RGOs are already heavily regulated and may be limited in their ability to construct infiltration facilities or to perform treatment, they should not be subject to the BMP design standards at this time, and recommend that the Regional Water Board undertake further consideration of a threshold relative to size of the RGO, number of fueling nozzles, or some other relevant factor. This Order should not be construed to preclude inclusion of RGOs in the SUSMP design standards, with proper justification, when the permit is reissued.

Redevelopment Projects

The SUSMPs were written to apply to new development and to some types of redevelopment in nine categories of projects. The definition of "redevelopment" reflected the intent of the Regional Water Board to define the scope of redevelopment projects subject to the requirements. That definition[51], however, was somewhat confusing, and it was apparent from testimony at the hearing that the parties had different understandings of the scope of redevelopment subject to the SUSMPs. In their post-hearing briefs, the various parties appeared to agree on the actual intent of the Regional Water Board in including redevelopment in the SUSMPs. This intent was to include redevelopment that adds or creates at least 5,000 square feet of impervious surface to the original development and, where the addition constitutes less than 50 percent of the original development, to limit the application of the BMP design standards to the addition.

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[50] These BMPs are from a list of BMPs in a publication of the California Storm Water Quality Task Force. (Best Management Practice Guide – Retail Gasoline Outlets. March 1997.) This publication includes BMPs in addition to those listed in the SUSMPs. All BMPs recommended in this publication should be mandated.

[51] The SUSMPs state: "Redevelopment" means, on an already developed site, the creation or addition of at least 5,000 square feet of impervious surfaces or the creation or addition of fifty percent or more of impervious surfaces or the making of improvements to fifty percent or more of the existing structure. Redevelopment includes, but is not limited to: the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces.

While some parties requested further requirements for development, it appears that the Regional Water Board's original intent was relatively simple to apply and results in a fair and appropriate application of the SUSMPs' requirements to redevelopment. Therefore, we will revise the definition in the SUSMPs accordingly.

Environmentally-Sensitive Areas

The permit required that the SUSMPs address at least seven development categories.[52] The final SUSMPs added two more categories: parking lots of 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff; and location within or directly adjacent to an environmentally-sensitive area (ESA). The petitioners contend that the addition of ESAs was inappropriate because the permit refers only to "development categories"[53] and ESA is a location category.

Whether or not the Regional Water Board went beyond the permit's terms in including this category, we find a fundamental problem with the language of the SUSMPs regarding ESAs. All of the other categories are relatively simple to apply because they describe the types of development that fall within the category. For instance, the threshold for a commercial development is 100,000 square feet. If the development is smaller, it is not subject to the SUSMPs. But for developments within ESAs, the SUSMPs contain no threshold. This absence led to speculation by the petitioners that something as small as a new patio on a home in an ESA would make the SUSMPs applicable. The Regional Water Board, at the hearing and in its post-hearing brief, conceded that there should be some threshold. While the Regional Water Board

[52] The categories listed in the permit are: single-family hill residences, 100,000 square-foot commercial developments, automotive repair shops, retail gasoline outlets, restaurants, home subdivisions with 10 to 99 housing units, and home subdivisions with 100 or more housing units. Permit, Part 2. III.A.1.c.
[53] *Id.*

did recommend a specific threshold, we believe that it is inappropriate for this Board to add a threshold that has not been fully discussed by all interested persons.

While it may be appropriate to include more stringent controls for developments in ESAs, we also note that such developments are already subject to extensive regulation under other regulatory programs. Moreover, in light of the permit language limiting the SUSMPs to development categories, ESAs are not an appropriate category within the SUSMPs. The Regional Water Board may choose to consider the issue further when it reissues the permit.

Discretionary and Non-Discretionary, or Ministerial, Projects

The petitioners contend that the SUSMPs should apply only to projects that are considered "discretionary" within the meaning of California Environmental Quality Act (CEQA).[54] They argue that the inclusion of non-discretionary, or ministerial, projects is inconsistent with the terms of the permit.

The permit provisions on development projects do refer to "discretionary" projects in several places. The permittees are directed to develop a checklist for determining priority and exempt projects.[55] Priority projects are defined as development and redevelopment projects requiring discretionary approval, which may have a potential significant effect on storm water quality.[56] The permittees are also required to develop a BMP list.[57] In developing the SUSMPs, the permittees are required to incorporate appropriate elements of the BMP list.[58] Next, the permittees must develop a program on planning control measures for priority projects (which are limited to projects requiring discretionary approval), consistent with the list of BMPs and the

[54] Public Resources Code section 21000 *et seq.*
[55] Permit, Part 2, III.A.1.a.
[56] *Id.*
[57] Permit, Part 2, III.A.1.b.
[58] Permit, Part 2, III.A.1.c.

SUSMPs.[59] The permit further states that, in order to assure compliance with these requirements, the permittees must develop guidelines on preparing CEQA documents that link mitigation conditions to "local discretionary project approvals."[60]

Taken as a whole, the provisions of the permit appear to link the development requirements for SUSMPs to developments that receive discretionary approval by local governments, as defined in CEQA. The SUSMPs are an implementation tool for the permit and must be consistent with the permit. While the limitation of the SUSMPs to discretionary projects may not be sufficiently broad for an effective storm water control program, the Regional Water Board acted inappropriately in expanding the SUSMPs to include non-discretionary projects. The Regional Water Board may consider expanding the development controls beyond CEQA discretionary projects when it reissues the permit. But at this time, the SUSMPs must be revised so that they are limited to development projects requiring discretionary approval within the meaning of CEQA.[61]

Waiver Funding Requirement

Where a waiver is granted from the design standard requirements, the Final SUSMPs provide that the permittee must require the project proponent to transfer the cost savings to a storm water mitigation fund. The fund is to be operated by a public agency or a non-profit entity, to promote regional or alternative solutions for storm water pollution in the same storm watershed. The petitioners contend that the funding requirement will create an additional administrative burden.

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[59] Permit, Part 2, III.a.2.
[60] Permit, Part 2, III.a.3.b.
[61] We note that the Final SUSMPs already include a definition of "discretionary project" consistent with the definition in the CEQA guidelines. Final SUSMPs at page 4 of 25; Title 14, California Code of Regulations, section 15357. Apparently this definition was inadvertently retained after the Regional Water Board decided to expand the SUSMPs beyond discretionary projects.

The concept of a mitigation fund or "bank" is a positive idea for obtaining regional solutions to storm water runoff. As a long-term strategy, municipal storm water dischargers should work to establish regional mitigation facilities, which may be more cost-effective and more technically effective than mitigation structures at individual developments. But at this point there are not sufficient resources in place to require all permittees to establish such funds or to find appropriate non-profit organizations. Before mandating funding, preliminary questions should be answered, including who will manage the fund, what types of projects it will be used for, what entities can legally operate such funds, and how permittees will determine the amount of the assessments. It would be appropriate for the County to consider developing a program with the appropriate flood control agency, or as a model for the separate cities to develop. There may be suitable agencies to administer such funds, but the development of programs may take some time. The Regional Water Board should consider adopting such a program when it reissues the permit, after consultation with the appropriate local agencies.

III. CONCLUSIONS

Based on the discussion above, the Board concludes that:

1. The Regional Water Board complied with the procedural requirements of the permit, including the Administrative Review Process, in approving the Final SUSMPs.
2. The Regional Water Board was authorized to revise the SUSMPs by including more stringent requirements than the permittees had proposed.
3. The Regional Water Board complied with did not violate the Administrative Procedure Act, CEQA, or the Constitutional provisions on state mandates. The petitioners' due process rights have been protected
4. The Regional Water Board considered the costs of the SUSMPs, and acted reasonably in requiring these controls in light of the expected benefits to water quality.

5. The Final SUSMPs reflect a reasonable interpretation of development controls that achieve reduction of pollutants in storm water discharges to the maximum extent practicable.
6. The SUSMPs include adequate protections of groundwater quality from any impacts from infiltration.
7. The SUSMPs will be revised to clarify the intent of the Regional Water Board and to make them consistent with the permit. Specifically, retail gasoline outlets should not be subject to the BMP design standards because they are already heavily regulated and may be limited in their ability to construct infiltration facilities or to perform treatment. Redevelopment projects should be subject to the SUSMPs only if they result in creation or addition of 5,000 square feet of impervious surfaces. Environmentally-sensitive areas should not be listed as a category in the SUSMPs. The SUSMPs should only apply to discretionary projects. The requirement for funding by project proponents who receive waivers should be deleted. The SUSMPs will be amended as shown in the attachment to this Order.
8. In light of the revisions of the SUSMPs made by this Order, and to allow the permittees adequate time to adopt implementing ordinances, the deadline for adopting ordinances will be revised to January 15, 2001, and the effective date of the Final SUSMPs will be revised to February 15, 2001.

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IV. ORDER

IT IS HEREBY ORDERED that the Standard Urban Storm Water Mitigation Plans for Los Angeles County and Cities in Los Angeles County is revised consistent with the amendments attached hereto. In all other respects the petitions are dismissed.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on October 5, 2000.

AYE: Arthur G. Baggett, Jr.
Mary Jane Forster
John W. Brown

NO: None

ABSENT: Peter S. Silva

ABSTAIN: None

Maureen Marché
Administrative Assistant to the Board

[These amendments are to the Final SUSMP, as published March 8, 2000]

Page 3 of 25

First full paragraph:

All **discretionary development and redevelopment** projects that fall into one of ~~seven~~ **the following** categories are ~~identified in the Los Angeles County MS4 Permit as requiring~~ **subject to these** SUSMPs. These categories are:

- Single-family Hillside Residences
- 100,000 Square Foot Commercial Developments
- Automotive Repair Shops
- Retail Gasoline Outlets
- Restaurants
- Home Subdivisions with 10 to 99 housing units
- Home Subdivisions with 100 or more housing units
- **Parking lots 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff**

Second full paragraph:

~~The Regional Board Executive Officer has designated two additional categories subject to SUSMP requirements for the Los Angeles County MS4 Permit. These categories are:~~

- ~~Location within or directly adjacent to or discharging directly to an environmentally sensitive area, and~~
- ~~Parking lots 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff~~

Fourth full paragraph:

Permittees shall amend codes, if necessary, not later than ~~September 8, 2000~~ **January 15, 2001**, to give legal effect to the SUSMP requirements. The SUSMP requirements for projects identified herein shall take effect not later than ~~October 8, 2000~~ **February 15, 2001**.

Page 4 of 25

Delete definition of "Environmentally Sensitive Area"

Revise Definition of "Redevelopment":

"Redevelopment" means, on an already developed site, the creation or addition of at least 5,000 square feet of impervious surfaces ~~or the creation or addition of fifty percent or more of impervious surfaces or the making of improvements to fifty percent or more of the existing structure~~. Redevelopment includes, but is not limited to: the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routing maintenance activity; and land disturbing activities related with structural or impervious surfaces. **Where redevelopment results in an increase of less than fifty percent of the impervious surfaces of a previously existing development, and the existing development was not subject to these SUSMPs, the Design Standards apply only to the addition, and not to the entire development.**

Page 10 of 25

Add to "Limited Exclusion": Retail Gasoline Outlets

Page 15 of 25

Delete the first full paragraph (storm water mitigation funding)

City of Arcadia

Public Works Services Department

May 15, 2001

Mr. Xavier Swammikannu
Chief, LA/Long Beach Storm Water Unit
California Regional Water Quality Control Board,
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles CA 90013-1105

SUBJECT: Draft Municipal Storm Water Permit for Los Angeles County

Dear Mr. Swammikannu:

Pat Mailoy
Public Works Services Director

Thank you for the opportunity to offer comments on the April 13, 2001 draft Area-Wide Municipal Storm Water Permit for Los Angeles County. We support the comments which have been offered by the County of Los Angeles Department of Public Works and the Coalition for Practical Regulation. Rather that repeating those comments here, we will augment them from our particular perspective. We begin with some general comments in this letter and continue with specific comments in the attachment.

General Comment

We object to what appear to be regulations being imposed through a permit rather than through the regulatory process. The magnitude of the industrial and commercial inspection and enforcement program, for example, is huge and is comparable to the Federal Pretreatment Program. However, the Federal Pretreatment Program was imposed through regulations that guaranteed a full due process of review and comment during adoption and nationwide consistency during implementation.

Moreover, under the Pretreatment Program, the EPA and the States spent millions of dollars providing technical guidance and training that gradually brought the cities and sanitation agencies up to a high level of proficiency we now take for granted. In comparison, the Regional Board is offering very little in the way of implementation guidance, training, cooperation, and funding for cities and is demanding almost instant compliance. In reality, the majority of the programs mandated by the draft permit should be adopted as regulations and/or through the basin planning process and the State should provide the necessary technical guidance.

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Post Office Box 60021
Arcadia, CA 91066 - 6021
(626) 256 - 6554
(626) 359 - 7028 Fax

Proposed Program for Industrial and Commercial Inspections

Under legal pressure from the Natural Resources Defense Council (NRDC), the Regional Board is attempting to shift to the cities the financial and resource burden of inspecting and enforcing storm water permit requirements at State-permitted industrial facilities. This would seem reasonable if this responsibility did not belong to the State under current regulations and were not the State already collecting $250 to $10,000 per permitted facility per year for the program. The State has, according to the NRDC, failed to carry out its duties. The solution is not to make the cities responsible, especially when this new mandate is imposed without going through the regulatory adoption process and without funding.

Alexis Strauss, Director of the Water Division for Region IX, EPA, in San Francisco, has written a letter that is intended to bolster the Regional Board Staff's position. When an EPA official takes this position, it makes it very difficult for the cities to argue that it is not what the federal regulations envisioned, even though we know this to be true. The federal intent is being manipulated for a purpose which is grossly unfair.

Area-wide joint municipal storm water discharge permits (as opposed to individual NPDES storm water permits) are supposed to result in control of all the smaller and miscellaneous sources of urban runoff and storm water pollution which are not effectively controllable on an individual basis at the State level. The cities and the County of Los Angeles have been working for the past five years to develop and implement an effective program to perform site inspections and enforce local ordinances for the smaller sources. We strongly object to the draft permit which is making the municipalities responsible for inspection and enforcement of industrial facilities that have been issued NPDES permits by the Regional Board.

These facilities are the larger industrial, commercial, and construction sites that have been issued individual or group discharge permits (combined federal/state permits). The enforcement of these permits is supposed to take place by the agency that issued them – in this case the Regional Board. We agree that the cities should work cooperatively with the Regional Board because we have an interest in ensuring that these facilities are not causing harm to the local environment. However, we believe the Regional Board's first concern should be setting a good example of regulating these industries, not forcing the responsibility on local government with the intention of taking enforcement action against us if we fail to achieve what the Regional Board could not.

The Regional Board and EPA Region IX justify this by saying that they are only making it a requirement for us to enforce our local storm water ordinances at these facilities and that we should be doing that anyway.

This sounds convincing, but it is not. First, the local governments have been forced by the Regional Board to adopt certain specific storm water requirements in their local ordinances to which we objected. Second, in some cases, these requirements are more stringent than the ones imposed in permits issued by the State to large industrial facilities. Therefore, the cities will be in an untenable position of having to take action against facilities that are totally in compliance with permits issued by the Regional Board.

A case in point is the Santa Anita Race Track Facility in the City of Arcadia. The Regional Board issued an individual NPDES permit to that facility last year that requires treatment of only the first one-tenth of an inch of storm water runoff. But, at the end of last year, the Regional Board adopted an Order that forced the City to revise its local ordinance to say that the first three-quarters of an inch of runoff must be treated. Granted, the current SUSMP applies only to new development and therefore does not apply to the Race Track at this time. However, it is extremely likely that the Race Track will in the future have major new construction that falls under the definition of Redevelopment, so the SUMP could apply.

The Race Track is being used here only for illustrative purposes. The point is that the Regional Board only required one-tenth of an inch when it was judged appropriate. But, the SUSMP and the NPDES permit take away the cities' right to use similar judgment and force us to use three-quarters of an inch. It appears that what is good for the goose (ability to use sound technical judgment) is not good for the gander. There are numerous other examples where the draft permit is overly prescriptive.

Additional Comments

Please refer to the attachment for additional comments. We look forward to working with you to continue to implement this important program. Please call me at (626) 256-6552 if you have any questions.

Sincerely,

LeAnne E. Hamilton
Assistant Engineer

Attachment
cc: Gary Lewis, General Services Manager
Pat Malloy, Public Works Services Director

ADDITIONAL COMMENTS ON THE 4-13-2001 DRAFT MUNICIPAL PERMIT

The Board's draft of the next permit contains numerous changes both in content and format from the previous permit. These include:

- The previous permit contained phrasing to the effect that if a city has implemented the permit, that city would be in compliance with the Clean Water Act. This has now been removed. Cities could find themselves in violation of the CWA, even if they have implemented every program and BMP required in the Municipal Permit.

- The receiving water limitations now include prohibition against discharges that contribute to violation of water quality standards, including the California Toxic Rule, which sets numerical standards. It is our understanding that the State of California guidance manual states that the California Toxics Rule does not apply to storm water. It is also our understanding that the federal and state intent until now has been to rely on a Maximum Extent Practicable (MEP) approach. It appears that the Regional Board is now trying to undo the MEP approach and to substitute a water quality standards approach without addressing issues such as mixing zones, point of application, wasteload allocations, compliance schedules, and so on. What is the justification for that?

- TMDLs are now to be incorporated into the Permit. This could result in future TMDLs being automatically adopted according to schedule, rather than going through a formal Board hearing as was the case for the recent trash TMDL. TMDLs should be adopted through the regulatory process or Basin Planning process and should not be included by reference in permits. One reason is that the applicability of the TMDL may be inconsistent with the applicability of the permit and compliance schedules and other specific requirements may be justifiably different. Since a permit only lasts five years, it is not unreasonable to wait until the permit is renewed to incorporate new regulations. Permittees should not be constantly subjected to a moving target. This is already wreaking havoc with our ability to implement an orderly and effective program.

- The responsibilities of the permit have become increasingly blurred. The Board retains some enforcement authority, The Board also is requiring that programs be run in a specific manner (micro-management), the County is assigned various responsibilities and negotiation authority, but if there are exceedances, it is the cities that bear the ultimate burden for correction.

Specific comments are:

FINDINGS

Item 10: Storm Water Management Plan is acceptable

This item states that the proposed Storm Water Management Plan submitted by the County was acceptable. If this is the case, then there appears to be no reason for the changes in structure and requirements in the proposed permit.

The Model Programs (or SWMP, or SQMP) in the previous permit were generally in continuous development, up until the approval of the SUSMP program in late 2000. Why are they now being changed again?

Item 39: Enforcement Authority

The draft permit requires the permittees to perform some enforcement actions for the State Permit, but specifically states in this finding that the enforcement authority for NPDES permits belongs to the Regional Board.

Typographical Error - This section should read "...in the Los Angeles Region for the two statewide..."

Part 1 - Discharge Prohibitions

Section 2

The procedure for permittees to petition for exemption of a discharge has been removed with no explanation, and the authority for adding or removing items from the list given to only the Executive Officer.

Part 2 - Receiving Water Limitations

Section 2.3.a

The procedure does not make sense. The Permittees are not responsible for water quality monitoring, so how will they know when they are exceeding water quality standards?

Section 2.A

This section exempts the County (the Principal Permittee) from ensuring the compliance of any of the co-permittees, but does not do the reverse (exempt the co-permittees from ensuring the compliance of the County).

Section 2.A.1

This section states that the Principal Permittee will negotiate NPDES requirements with the Board. The permit should not be written to give the impression that the Co-permittees are giving up their right to negotiate the permit with the board directly, if the

EAC or County hold a contrary position.

Section B.2 and B.6

The coordination and facilitation elements of these two items are effectively duplicates. They should be combined, or one removed.

Part 3 - SQMP Implementation, Monitoring and Reporting

Section 3.C

This section requires the WMC to do several things, with no real guidelines (i.e. prioritize pollution control efforts, develop-update-monitor adequate implementation, etc.). It seems as if the Board wants to set up the WMC as a middle oversight body rather than as an information exchange body.

Another difficulty is that several "prioritization" items are assigned to the WMC, but there is no requirement that an individual permittee comply with anything from the WMC. Either the WMC should be given enforcement authority over the permittees, or the "prioritization" should be left up to the individual permittees, since they are ultimately responsible, not the WMC.

Section 3.D

There are no requirements for any actions by the EAC, although there are actions referred to in other sections. These responsibilities should be consolidated here.

Section 3.E.1

This appears to in essence be a duplicate of Part 3, B.5. It also implies that there would be elements of the SQMP that are NOT consistent with the terms of this permit. This should be reworded or removed as unnecessary.

Section 3.F

There should be a consistent method referenced for modification of the SQMP. In various areas this is noted as both the responsibility of the permittees and the principal permittee. As the SQMP is a "county wide" document and part of the permit itself, isn't it true that any change should involve all the permittees? If the change is only to an individual permittees program, then the permit should state that, and not use the SQMP terminology.

Section 3.G

This section covers the legal authority of the Permittees. Is this area intended for the permittees to constantly be revising their ordinances? Is there a way to write a general ordinance, and just change the implementation policy every time the SQMP is changed?

Section 3.G.1.m and 3.G.1.n	This requires that the City control discharges from sites under the GIASP and GCSP. This seems to result in either a) a duplicate enforcement process, or b) the City being the enforcing body for the State requirements. Neither is acceptable, since in the first case this is basically unnecessary duplication, and in the second not the City's responsibility to enforce the state permit.
Section 3.G.1.p	The permit requires an ordinance "effective immediately upon the adoption of this Order." Is it even legally possible to write an ordinance adopting permit requirements that have not yet been finalized?
Section 3.H	This section requires copies of "...any proposed changes to the SQMP and its components...". Per Part 3 Section F, changes to the SQMP must be either approved by the Board or done at the request of the Board. Why include additional copies of something they already have?
Section 3.I	The budget reporting system should be revised based on the difficulties encountered so far. There should be a consistent way of determining which budget line items to report, and the submittal date should be based on the City's fiscal year.
Section 3.K	This item should be included in Part 3 Section F.3

Part 4 - Special Provisions

Part 4.A – Public Information ***Section A.1.c***	The permit does not state who will be responsible for the new signage, the city that the "designated access point" is in, or the owner of the channel?
Part 4.B – Industrial Commercial Inspections ***Section 4.B***	As this program has been changed in focus from education to inspection and enforcement, it should be moved to the ICID program for ease of reference.
Part 4.B – Industrial Commercial Inspections ***Section 4.B.1***	This sentence is unclear. Permittee shall require use of what by businesses. It appears to mean require use of the program itself, but that is not possible.
Part 4.B – Industrial Commercial Inspections	On it's face, this requirement appears to include every industrial or commercial business in the City. This is contradictory to the

Section 4.B.2	existing permit, which required visits based on the type of business and the potential for exposure. Under the older program, there was always the opportunity and requirement to add businesses that were found to be potential polluters.
Part 4.B – Industrial Commercial Inspections *Section 4.B.3.c*	This item should be clarified to indicate who is required to do the inspections. Is this intended for the County Health Department to take over storm water inspections at restaurants? If so, who is considered responsible if exceedances occur?
Part 4.B – Industrial Commercial Inspections *Section 4.B.5.b*	This table can be significantly simplified by just stating that any business shall be inspected every 24 months, not less than twice during the permit (since all inspection requirements are identical).
Part 4.B – Industrial Commercial Inspections *Section 4.B.5.d*	How is the permittee to determine if the board has made an inspection or not? This is indeed an irrelevant section, since even if the Board HAS inspected the site, that will not eliminate the potential liability if something were to occur and the City had NOT inspected it, therefore it would be in the Cities best interest to inspect it anyway.
Part 4.B – Industrial Commercial Inspections *Section 4.B.6.a*	Please specify what sanctions would satisfy this requirement (financial, criminal, etc.).
Part 4.B – Industrial Commercial Inspections *Section 4.B.7.a*	This notification requirement is burdensome and confusing. If there is a violation of a City ordinance, the City is the enforcing agency. Such a broad definition of "non-compliance" would result in a very large number of "violations" being referred to the board, which would normally be handled by the City in an educational manner (educational materials, follow up letter, one or two informal follow up inspections). These are normally single incidents, either accidental or by someone who hadn't been adequately educated at the time, and are typically not repeated once the situation is explained to them. What the Board would do with this information is unclear, since a violation of a City ordinance may not be a violation of a Board order that they could enforce, and such incidents are reported in the Annual Report. Additionally, if there is a violation of a State requirement, the State is the enforcing agency (see Item 39) and has not delegated that responsibility formally to the Cities. Although the City may be able to review information that a business submits to the State (an

SWPPP for example) to ensure that it also meets City standards, the City does not have the authority to determine whether or not a given SWPPP is in compliance with State requirements. The City cannot perform the State's job function in this manner.

And, as was discussed at ~~length during~~ the previous permit, the Cities do not have the authority to require a given business to obtain a State permit, since it is solely the States responsibility to determine whether or not an NPDES permit is necessary for a given site. A City can require that a business provide proof that they are complying with state requirements (such as an NOI), but do they now keep duplicate records listing all the businesses that have been determined NOT to require a permit? (i.e. Category 11 dischargers with no exposure)

Part 4.C – Development Planning

Section 4.C.3.c

SUSMPs have been developed for each of the other types of projects (listed in section C.3.b), but no equivalent standard for projects in Environmentally Sensitive Areas (ESA) has been developed. Since projects in these areas could take any number of forms, it is unlikely that a "standard" plan could be effectively developed.

Also, as of this draft of the permit, a list of these "ESA"s has not been provided for review.

Part 4.C – Development Planning

Section 4.C.9

It is unclear what authority the City has to regulate property transfers between two private parties. Is the City now to keep track of each property transfer and maintain records on who is responsible for maintenance of a site?

Part 4.C – Development Planning

Section 4.C.10

This section is completely unclear as to its intent and specifics.

Part 4.C – Development Planning

Section 4.C.12

Most cities are on a set schedule to update general plans (5 years or so), as such the 540 day deadline should be changed to the next scheduled general plan revision.

Part 4.C – Development Planning

Section 4.C.14

This should be assigned to the Principal Permittee, since it is intended to be a countywide consistent document.

Part 4.D – Development Construction

This should be clarified further. Is it intended that City personnel attend all such meetings or workshops, or merely to provide

Section 4.D.1.a	information for voluntary distribution during such meetings?
Part 4.D – Development Construction *Section 4.D.1.c*	Several of the items listed in the "minimum BMPs" are not actually BMPs. If a minimum list is envisioned, it should be spelled out here.
Part 4.D – Development Construction	The first sentence is unclear. Each Permittee shall require what?
Section 4.D.2	The statement that a Local SWPPP can replace a State SWPPP should be removed, as it is not relevant to the Local SWPPP requirements.
Part 4.D – Development Construction *Section 4.D.3*	Permittee inspectors additional actions must be limited to local ordinances and codes, since they do not have the authority to enforce state laws in this case. The phrase "...if non-compliance continues..." is vague, a set method and rational for referring sites to the Board should be determined to avoid confusion.
Part 4.D – Development Construction *Section 4.D.4.b*	Without additional rationale, the requirement of an "electronic system" is not justified. Smaller cities may not have a number of grading permits that would justify the expense of installing a new tracking system. Does the Board intend to eventually require electronic submittal of all grading permits? If so, a standardized format should be developed now for ease of future integration.
Part 4.E – Public Agency Activities *Section 4.E.1*	Details for the sections on Parking Facilities Management, Public Industrial Activities, and Dry Weather Diversions have been omitted from this draft.
Part 4.E – Public Agency Activities *Section 4.E.2*	Does the Board intend for the CMOM provisions to take the place of the Sewer section of the Public Agency program? If so, this should be specified.
Part 4.E – Public Agency Activities *Section 4.E.3.b.2*	Prepare site-specific SWPPPs for **which** municipal constructions sites? Does this mean **any** sites, regardless of size? That seems unduly burdensome.
Part 4.E – Public Agency Activities *Section 4.E.4.f*	A blanket requirement to reduce use, storage and handling is not useful, some guidelines (i.e. reduction from what amounts?) must be provided.

Part 4.E – Public Agency Activities ***Section 4.E.5***	There is a numbering inconsistency in this section, and duplication of at least one item.
Part 4.E – Public Agency Activities ***Section 4.E.6.a***	No definition of "high" and "moderate" volumes of trash was provided. In addition, the TMDL also does not contain definitions of "high" and "moderate" volumes of trash. Section IV.A of the L.A. River Trash TMDL states that if the Cities rely on the Default Baseline Waste Load Allocation, *"The final Default Baseline Waste Load Allocation, as described in compressed volume and/or dry weight, will be specified in the stormwater permit."* This definition also appears to have been omitted.
Part 4.E – Public Agency Activities ***Section 4.E.7***	A section should be inserted stating that the Permittees shall not be held responsible under the permit for discharges in excess of numerical limits that occur as a result of such emergency situations. For instance, a sewer break and overflow resulting from an earthquake would likely exceed bacteria discharge limits. If BMPs (such as containment) are delayed because of the emergency, the Permittees should not be held liable for the discharge that occurred between the earthquake and the implementation of the BMP.
Part 4.F – ICID Program ***Section 4.F.1.a***	The permittee should be given the option to adopt the ICID section of the SQMP as written, to avoid the additional paperwork of creating an unnecessary document.
Part 4.F – ICID Program ***Section 4.F.1.b***	The tracking system should be developed by the Principal Permittee, since the goal is to have a consistent and countywide system controlled by the Principal Permittee.
Part 4.F – ICID Program ***Section 4.F.2.b***	What is the rational for specifying that the Permittees specifically consider the 1994 Northridge quake and the "civil unrest"?

BALDWIN
P · A · R · K

May 14, 2001

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality Board
Los Angeles Region
320 West 4th Street
Los Angeles, California 90013

Subject: EAC Comments In Re: First Municipal NPDES Permit Draft

Dear Mr. Dickerson:

Submitted herewith for your consideration are comments prepared by the City of Baldwin Park ("City") in response to the draft Los Angeles County Municipal NPDES permit (hereinafter "draft permit"), dated April 13, 2001.

It should be noted that the draft permit is a substantial improvement over the current permit. It is less problematic in several key areas. There is, however, room for additional improvement. The written comments prepared by the City are intended to accomplish this by identifying areas of concern -- including: (1) program requirements that appear to be unnecessarily labor intensive and costly; (2) new provisions that would make permit compliance unjustifiably more stringent while increasing permittee exposure to administrative enforcement actions and third party litigation; and (3) permit language that seems unclear and contradictory in a few places.

It is also suggested that regional board staff consider a different approach for presenting, evaluating, and responding to comments in re: municipal NPDES issues. In the past, permittee comments that were contrary to regional board staff views were usually rejected without compelling reason. Often ignored were the permittees legitimate concerns for the cost and effectiveness of proposed requirements. This has resulted in the adoption

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of unpopular and very controversial permit requirements. Permittees were thus faced with the narrow options of either accepting unreasonable requirements or challenging them administratively and legally.

In the interest of avoiding a similar fate with next municipal NPDES permit, the following is proposed:

1. Regional Board staff should make a conscientious effort to discuss and resolve concerns raised by permittees rather than just issuing a written rejection with a brief explanation as to why. Instead, a forum is recommended to promote dialog aimed towards achieving mutual agreement. Although workshops are fine for communicating requirements and identifying general issues, they are not effective in identifying specific areas of concern or resolving disagreement. Smaller work groups are needed because they can provide better attention to issues. A work group could be comprised of permittee representatives and regional staff for each program area (e.g., development planning, development construction, illicit discharge and connection detection and elimination, etc.). The work groups should concentrate on working-out essential compliance concerns. Once this is done, developing language-related details would be relatively simple. Also, an objective third party should be involved to facilitate discussion and resolve disagreement.

2. Criteria for determining the reasonability of new permit requirements or existing ones should be developed. Such criteria should include objective readings of (a) 40 CFR 122.26 (storm water regulations under the Clean Water Act); (b) Phase II storm water rules, which are scheduled to take effect in 2003; and (c) Porter-Cologne Act (state water code) -- to justify requirements not specified in the Clean Water Act, in terms of beneficial use protection, using scientific data rather than subject judgment.

3. A general workshop on Phase II storm water rules promulgated by the USEPA and scheduled for implementation in 2003, should be held to educate regional board staff, permittees, and other interested parties on these new municipal NPDES permit requirements. To that end, regional board staff is encouraged to join with permittees in inviting a representative from USEPA Region 9 conduct the workshop.

4. Delay adoption of the new permit until Phase II rules have been fully identified, evaluated, and incorporated into the next permit.

In closing, the City appreciates the time and effort that regional board staff has invested in preparing the draft permit and looks forward to participating with it in developing a new permit that will truly in improving water quality in the most cost effective manner possible. In the meantime, should you have any questions, please call me.

Sincerely,

Shafiq- Nay

Shafique Naiyer,
Director of Public Works

SN:an

cc: Mr. David Nahai, Chairman
Los Angeles Regional Water Quality Control Board

Mr. Art Bagget, Chairman
State Water Resources Control Board

Baldwin Park City Council

Dayle Keller, Chief Executive Officer

CITY OF
BELLFLOWER

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http://www.bellflower.org

May 16, 2001

Xavier Swamikannu
Chief, LA/Long Beach Storm Water Unit
Regional Water Quality Control Board, Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA. 90013

RE: NPDES Draft Permit

Dear Mr. Swamikannu:

The City of Bellflower appreciates this opportunity to express its concerns regarding the NPDES draft permit proposed by the Regional Board. We further appreciate Board staff's efforts to explain the proposed permit and receive comments at the Regional Board's workshop of April 24. This letter will probably not offer any new issues that have not been previously addressed. However, because of their accumulated severe impact upon municipalities, we believe those concerns are worth repeating.

First, the proposed permit expands NPDES programs with no recognition of added financial costs to local agencies, specifically in the inspection and enforcement program and in compliance methods for TMDL's. It is admirable to seek the goals sought by the permit. It is good governance to evaluate alternatives to develop a critical path to those goals. It is foolish and incompetent to decide an alternative based on no analysis. The proposed permit prescribes the goals sought and reflects no discussion of competent analysis of alternatives. Perhaps that is because the Regional Board is not participating in the solution and its cost.

The proposed permit provides several opportunities of traps by which the co-permittees may receive punitive action. Terms such as "minimize" and "maximize" are open-ended. The current draft removes co-permittees "safe harbor" provisions, which allows a good faith effort. Such punitive measures include $25,000 per day fines, third party litigation and criminal prosecution. All are possible if unrealistic goals such as 0 TMDL's are not achieved.

The Regional Board has inserted provisions to overturn the battles won by the Coalition for Practical Regulation (CPR) during the SUSMP petition. This effort by the Regional Board does not perpetuate an atmosphere of cooperation and trust. Additionally, the Regional Board appears to be attempting to impose an order, rule or standard of general application without complying with the requirements of the Administrative procedures Act, as the Regional Board attempted during the SUSMP issue.

Fourth, we feel strongly that the Regional Board is displacing its duties and responsibilities upon the backs of local agencies. The Regional Board contends that its authority to institute the proposed is provided in Federal and State law. It is clear that the Regional Board has received the authority and responsibility to conduct enforcement of some of the programs in the permit. Yet it proposes to expand the scope of that enforcement and then transfer it to local agencies. The Board's rationale is that it does not have the resources to enforce. With what information does it conclude that local agencies do? The same laws that, arguably, empower the Regional Board do not provide local agencies with the same authority. Further, we challenge whether the Board can actually delegate its authority.

We consider the proposals as unfunded mandates, thereby illegal. The Regional Board argues that its authority and direction is found in the Porter-Cologne Act. The Regional Board is an extension of a State agency deriving its authority from State legislation. We believe the State Constitution applies.

Finally, we are very disheartened that the Regional Board's proposed language discourages regional and sub-regional solutions. As stated above, local agencies also have limited funds and strive to find the most effective alternative to reach their goals. Often cities join together to achieve resolution to their problems. The regional water quality problem can be addressed with regional solutions. Don't discourage solutions!

We urge the Regional Board to stop acting as if it is trying to extricate itself from a political situation and focus on achieving real and effective solutions. We hope you will earnestly consider these comments and those of our peers.

Sincerely,

Michael J. Egan
City Administrator

CITY OF BELL GARDENS
PUBLIC WORKS DEPARTMENT

8327 GARFIELD AVE., BELL GARDENS, CA 90201-6122
(562) 806-7770 FAX (562) 806-7789

May 16, 2001

2001 MAY 18 P 2:43

Mr. Dennis Dickerson
Executive Director
Regional Water Quality Control
Board – Los Angeles
320 W. Fourth Street, Suite 200
Los Angeles, CA 90013-1105

Subject: Review Comments on Draft Los Angeles County Storm Water and Urban Runoff Permit

Dear Mr. Dickerson:

Thank you for the opportunity to comment on the April 13, 2001, Draft Municipal Storm Water Permit. This permit will have a significant impact on the daily lives of the residents and businesses of Los Angeles County. A large percentage of the economy of Los Angeles County is tied to tourism at the beaches along the coast and at the inland lakes and streams. It is in everyone's best interest to protect these resources.

The Regional Board must recognize the limited resources available at the municipal level to support these programs. The Clean Water Act (CWA) establishes a Maximum Extent Practical (MEP) standard for Storm Water Permits. This permit, in several areas, attempts to apply numeric standards to Municipal Programs. The application of numeric standards will make compliance with the permit impossible for the municipalities and subject them to numerous citizen lawsuits.

While we recognize the importance of the CWA and the intent of this draft permit, we must also address the cities' ability to comply with the requirements without exposure to unnecessary liability. The following comments reflect the cities' desire to comply with the CWA and the Regional Water Quality Control Board's (Board) permit. Where suggestions are made they are intended to provide the Board with alternative wording that we believe will comply with the MEP intent of the CWA. The Board will receive many comments from lawyers and others familiar with the statutory requirements of the CWA. My comments will focus on the affect of the draft permit on the cities of Los Angeles County.

1. Part 2. Receiving Water Limitation sections 1 and 2. Section 1 is so broad that the cities and the County will face liability for "cause(ing) or contribute(ing) to the violation of water quality standards or water quality objectives". Section 2 will pose the threat of liability for "cause(ing) or contribute(ing) to a condition of nuisance. These two provisions must be revised to allow the cities and the County to operate the Municipal Separate Storm Sewer System (MS4) without fear of litigation from NRDC or other environmental groups for minimal impacts on water quality. Each and every resident of Los Angeles County depends on the MS4 to protect our homes and businesses from the real threat of flooding. The system has been built up over the years to efficiently carry storm runoff to the ocean. To convert this system to a full treatment system will take years. The Board cannot leave the cities and County open to litigation if you expect the improvements to be accomplished.

2. Part 3G(n). Legal Authority for inspections, surveillance and monitoring of Industrial, Commercial and Construction sites. This paragraph is overly broad. Cities and the County have the authority to investigate violations of law. Normally this occurs when the Police Department or the District Attorney is notified of a violation. These agencies are trained to conduct investigation and have the legal support to obtain the needed warrants to capture private records. These techniques are generally reserved for cases of some significance. Unfortunately, police agencies and prosecutors have not been convinced that discharges to the MS4 are important enough when they compare it to their workload involving thieves and murderers. Thus, it is not sufficient to ask cities and the County to certify to their legal authority, because the authority is granted by the State Judicial system. The greater question that should be asked is "has the crime been elevated to the degree needed to cause enforcement by local authorities." In extreme cases it is likely that the effort will be made, but for most incidents it is unlikely that any action will be taken to investigate or enforce minor illegal discharges.

   This section will be used to convict cities and the County of violating the Storm Water permit due to lack of detailed investigations and prosecutions. This will not be difficult to prove. We do not believe that the Board should be creating regulations that will subject the cities and the County to broad liability.

3. Part 3G(p). Adopt and implement an agency-specific storm water and urban runoff ordinance. The requirement of this paragraph that the ordinance be "effective immediately upon the adoption of this Order." This requirement is not practical. Cities and the County have a procedure to adopt ordinances. These procedures are derived from State Law that governs City and County authority. We must conduct public hearings before an Ordinance imposing restrictions on property rights can be adopted to allow the public to provide input to the process. Then unless there is a significant public health and safety concern involved, the ordinance will take effect thirty (30) days after the second reading of the ordinance. Thus, the requirement that the cities and the County adopt a new ordinance and have it effective upon the

approval of this order is impossible. I would suggest that a 180 day schedule be specified like the Board imposed for the SUSMP provisions.

4. Part 4A(2)(b). Business Assistance Program. While the principal involved with the Business Assistance Program is good, as currently written the program is flawed. The first problem is in the definition of a small business. Any business that has 99 employees is not a small business. To pay these employees even at minimum wage, the business must have significant revenue. I believe that the number of employees must be reduced to "less than 25 employees" or the business must be tied to actual revenue, say less than $1,000,000 in gross revenue. By setting the size of a small business at one of these levels, the Cities and the County will not be assisting businesses that can afford to obtain assistance on its own. The cities and the County have already offered to assist businesses that may not have a clear understanding as a result of the Educational Site Visit program. In most cases the offers were not well received. The businesses often treated the contact as an attempt to penalize the businesses rather than to help deal with the Storm Water Issue. The second issue with the program is the provision that states that the program "shall be a confidential and non-enforcement program." In most cities the ability to have two separate departments, one to assist businesses and another to enforce the regulations, will be impossible. Thus, the city employees charged with helping the businesses in a non-enforcement manner will likely be the same people that will visit and investigate violations of the business. I would suggest that the first visit be designed to assist the business to understand the program. Any future visits will involve enforcement that will then become progressively more severe. Without the ability to implement the program in this way the cities and the County will lack credibility when enforcement is required.

5. Part 4B. Programs for Industrial/Commercial Inspections. This part of the permit is the most objectionable part of the draft permit. This attempt by the Board to transfer its obligation to inspect and enforce against Phase I Industries and State Construction Permits without transferring the source of and the authority to collect revenue is unacceptable. It is clear to all cities and the County that the State has not adequately funded the inspection part of the NPDES program. If the State were to adequately fund the program they would have to include employees to perform the plan review, inspectors to train and to verify compliance in the field and prosecutors to enforce against violators. These are the same provisions that the Board is expecting the cities and the County to implement, yet the Board does not implement the same programs.

   As a City agent I do visit sites to verify compliance with State and Local Building Codes and other regulations to ensure that the Health and Safety of the public. But, for the Board to require that the cities and the County take over its responsibilities and liabilities because the Board will not adequately fund the program is

unacceptable. Until complete and adequate funding is provided the cities and the County must insist that this provision be removed.

6. Part 4B(4). BMP Implementation. This section is vague and contradictory. The first paragraph starts by saying that the City "shall require the implementation of the designated minimum BMP's, as approved in Resolution 98-08, at each industrial/commercial site within its jurisdiction." While this will be a formidable task by itself, the paragraph then ends by requiring the Permittee's "shall also implement or require any additional site specific BMP's ... which are more stringent than those required under the Statewide General Industrial Permit." This requirement I find confusing when I review the Permit. The General Industrial Permit does not cover all Industrial/Commercial businesses in my town. So as I read this requirement, I am required to impose harsher standards on non-regulated industry than the State would have the authority to impose on the Phase 1 industries identified in the CWA. I question if the Board has the Legal Authority to accomplish this requirement, much less force the permittee's to impose these standards. The other question that this requirement raises relates to the conditions that would trigger these harsh requirements. It is not clear if I am to impose this harsh standard on all of my business, or just those few that I deem to be gross violators. I believe that without clear requirements the City would stand little or no chance of prevailing against a court challenge.

   I would recommend that the Board revise this requirement to limit the city obligations to the requirements of Resolution 98-08.

   The second paragraph requires the Permittees to "implement, or require implementation of, additional controls for Industrial/Commercial sites tributary to CWA section 303d impaired water bodies ... as necessary to comply with this order." The paragraph also requires the cities to impose additional standards on Industrial/Commercial sites within or directly adjacent to or discharging directly to coastal lagoons or environmentally sensitive areas. Both of these requirements are vague as to intent and are impossible to enforce on businesses that may have been operating in the same location for twenty or more years. These businesses are going to ask, and rightly so, what proof the Permittees have to justify the imposition of new operating restrictions.

   I believe that the section, as written, is unenforceable and will be overturned in Court action. Since the City is damned if it imposes the requirement and damned if it fails to impose the requirement, each Permittee looses this battle. This section must be written with some justification for its inclusion in the permit.

7. Part 4B(5)d. Regional Board Inspection Coordination. This section states that if the Regional Board has performed an inspection of an Industrial/Commercial site the Permittees do not need to inspect that site. The section leaves unsaid how the coordination will happen between the Permittees and the Board. If the Board is to conduct an unannounced inspection of an Industrial/Commercial site they must follow up within a set time with a notice to the Permittee that the inspection has taken place. I also believe that the Permittee should be notified of the Board findings so that problem businesses can be monitored.

8. Part 4C(3)b. Board Revisions to the SUSMP Projects. I must request clarification on the change made to the Hillside Residential property. As written, item b(1) states that single-family hillside residential developments of "10,000" square feet or more. I have heard Permittees describe this as 10,000 square feet of disturbed area or 10,000 square feet of lot area. It is unclear how the Board intends this provision to be enforced. Clarification is required.

9. Part 4C(8). Redevelopment Projects. The wording used in this section does not agree with the definition of Redevelopment as contained in the Definitions in Part 5. This section must be revised to match the Definition since the definition was established by State Board Action on the SUSMP Petition.

10. Part 4C(12). General Plan Update. As noted at the Board Workshop on April 24th the requirement for every City to modify its general plan to reflect Storm Water Quality issues will take longer than 540 days (18 months) allowed in the permit. I believe that the Board must participate in a workshop with Planning Directors from all Permittees to establish the elements of the general plan that must be revised. Through this process all Permittees will perform the revisions correctly the first time rather than have to correct a flawed document. State Law limits the number of times that the General Plan can be modified in any one-year. The Permittees need to identify all elements that will be affected before contracts are issued for these amendments. Once the workshop is held, the Board should then allow not less than three years for Permittees to budget for and complete the General Plan Update.

11. Part 4E(1). Dry Weather Diversions. The Board has provided detailed requirements for all Public Agency activities except dry weather diversions. It is not clear if the Board is requiring all Permittees to implement a dry weather diversion program or if the Board is only mentioning this as a possible Public Agency activity. In either case it appears that the Permittees should be provided with direction from the Board on its intent on dry weather diversion. If there are no specific requirements this subgroup should not be listed at all.

RECEIVED
2001 MAY 16 P 2:19

May 16, 2001

Mr. Dennis Dickerson, Executive Officer
Los Angeles Regional Water Quality Control Board
320 W. 4th St., Suite 200
Los Angeles, CA 90013

RE: Comments on the First Draft, Los Angeles County Municipal Storm Water NPDES Permit (April 13, 2001 Draft Order, NPDES No. CAS614001)

Dear Mr. Dickerson:

Thank you for the opportunity to comment on the subject draft order. We believe that the draft order contains several inappropriate requirements, and we look forward to working with you to develop a permit that makes sense.

As a general comment, the draft permit is a formidable document. It was difficult to read, difficult to review within the allotted time, and it will be extremely difficult to ensure compliance with every requirement in its 85 pages of text and tables. We suggest the Regional Board develop a checklist-style of requirements to assist the Permittees with compliance.

Our specific comments at this time are provided below. It is very possible that we missed some critical issue during our review, so we reserve the right to offer additional comments.

Findings, Page 5, Item 10. The Board states here that the Permittee's proposed Storm Water Management Plan is acceptable, but then on page 17, Item F states that the Permittees shall modify the Plan. If the Plan is acceptable, why does it need to be modified?

Findings, Page 10, Item 41. The draft permit language should be revised to reflect that certain projects are statutorily exempt from CEQA.

Part 1, Page 12, Item 2c) (2). The phrase "of potable water distribution systems" should be deleted, and the existing conditionally exempt discharge of "water line flushing" should remain.

Part 1, Page 12, Item 2c)(8). Street washing should be included with sidewalk washing.

Part 2, Page 13, Receiving Water Limitations. The permit should include language similar to that contained in the second paragraph of Part 1, Section II of the existing permit: "timely and complete implementation by a Permittee of the storm water management programs prescribed in this Order shall satisfy the requirements of this section and constitute compliance with receiving water limitations." Furthermore, the Receiving Waters section of the draft permit should reflect the federal "maximum extent practicable" standard.

Part 3, Page 15, Item B. This section should be revised to address pollutants from flows that originate outside a Permittee's jurisdiction.

Part 3, Page 14, Item A.1. This section should be modified to state that each Permittee has the right to discuss any matter with the Regional Board.

Part 3, Page 16, Item C. This section places several new requirements on the Watershed Management Committees (WMCs), but does not provide the reasons why these are needed. The WMC should be a forum for information exchange and regional cooperation and coordination. Requiring the WMC to establish "additional goals and objectives and deadlines for the WMA" or "prioritize pollution control efforts" is inappropriate. The draft permit itself includes goals, objectives, deadlines and priorities. Also, the WMC should not be "investigating" activities since it is not a regulatory agency or entity.

Part 3, Page 18, Item G. This section is overly broad and would prohibit the discharge of runoff even if it does not contain pollutants (Items G.1.e) and G.1.h). This section also requires the Permittees to have the legal authority to do a number of things that the State is required to do. Items G.1. m and n require the Permittees to enforce the State-issued permits for industrial and construction activities, which is a State responsibility. Item G.1. p requires the City to adopt and implement an ordinance to enforce all of the new permit's requirements "immediately upon the adoption of this Order." There are strict rules regarding ordinance adoption, and it is impossible to adopt them "immediately." Furthermore, the County has adopted an ordinance that many of the other Permittees have adopted by reference. If this existing ordinance is not acceptable, the RWQCB should make specific recommendations for changes to it.

Part 3, Page 20, Item I. The storm water budget reporting system requirements should be revised to simply require the Permittees to report the *total* each entity plans to spend on storm water program costs. Each Permittee's City-specific budget requirements and subdivisions are different and do not match the Regional Board's categories.

Part 4, Page 23, Item A.1.d. The requirement for 35 million impressions per year is unreasonable and seems to be beyond the scope of an NPDES permit. How would the Principal Permittee prove that the minimum number of impressions is made? This could be sued over by third parties claiming that only 34 million impressions were made. This section could be re-written to include the minimum number of ads needed (these could be counted), but not that a certain number of impressions were made. In addition, Permittees do not have jurisdiction over what is taught in school district classes. The State should be responsible for outreach to the schools.

Part 4, Page 24, Item A.2.a. The Principal Permittee should not be required to visit corporate heads. Distributing information to corporate managers should be sufficient.

Part 4, Page 24, Item A.2.b. The Regional Board is requiring far more assistance to businesses, which places an undue burden on Permittees. It will be very difficult to predict how many businesses would request assistance, and what level of resources should be budgeted to respond to requests.

Part 4, Page 25 through 28, Item B. This program has changed from education to inspection and enforcement, with various overlaps with the State's program. Unclear regulatory roles increase the potential for confusion and inconsistent enforcement. The State seems to want to shift its regulatory responsibilities to the Permittees simply because it does not have its own adequate resources. The Permittees do not have excess resources, and would require

resources from the State to implement this requirement. Furthermore, the State has the regulatory authority to enforce the permits they issue. The BMP portion of this item (paragraph 4) requires the City to implement BMPs for businesses and private parties. It is the State's responsibility to enforce BMP implementation at sites covered by the State's general permit.

Part 4, Page 28, Item B.7. The Permittees should be required to send quarterly reports of the progress of the business education program. The proposed oral reports and the reporting deadlines are unreasonable.

Part 4, Page 29, Item C. The words "with immediate effect" should be deleted from the first sentence. The Permittees should be given at least 180 days to make necessary program changes. The development planning programs should apply only to priority projects.

Part 4, Page 35, Item C.12. The Regional Board does not have the authority to dictate when a Permittee's General Plan must be updated. The deadline in the draft permit should be deleted.

Part 4, Page 35, Item C.14. There is no need for Permittees to develop and make available additional developer planning guidelines. There are already a number of guidance and reference materials available, including the State's BMP manuals, that provide adequate information.

Part 4, Page 36 through 39, Item D. The first sentence of the first paragraph should be modified as follows: "Each Permittee shall implement a program to reduce pollutants in runoff from construction activity at all construction sites through the use of BMPs to the maximum extent possible."

Part 4, Page 38, Item D.3. The State (not the Permittees) is responsible for enforcing the general permits it has issued for construction sites.

Part 4, Page 42, Item E.4. Item E.4.b should be modified to include the words "that would result in measurable runoff" after the words "rain event." The words "to the maximum extent practicable" should be added at the end of paragraphs E.4.d and E.4.f. The City of Burbank has previously implemented several hazardous materials reduction steps, and should not be required to implement others unless additional reduction efforts are feasible.

Part 4, Page 42 and 43, Item E.5. Item E.5.b. should be modified to say "Clean catch basins when they become 40% full." Item E.5.f should require each Permittee to only submit a record of Permittee-owned catch basins, not those that are County owned. The County can provide records of the County-owned basins.

Part 4, Page 45, Item F.1.b) We question the Regional Board's authority to require Permittees to use GIS or a comparable tool for the IC/ID program. Many cities do not have GIS capabilities, and other cities have established their own priorities on how a citywide resource like GIS is to be used for the public benefit. In addition, we do not feel there is a need to use GIS to locate all permitted discharges. This information would be of limited use, but would take a tremendous effort to compile, and would involve getting data from the Regional Board for Board-issued permits. This program should focus on eliminating illicit connections and illicit discharges, not building datasets.

Part 4, Page 45, Item F.2. Reviewing data from the period following the Northridge earthquake or the 1992 civil unrest to identify potential illicit connections will likely provide very little, if any, useful data. This requirement should be removed from the permit.

Part 5, Pages 46 through 54. The definitions contained in the permit must be consistent with the federal Clean Water Act and the state Water Code. Paraphrasing or excerpting the statutory definitions causes confusion and disagreement.

Thank you again for this opportunity to comment. We look forward to reviewing the next draft.

Please call me at (818) 238-3921 if you have questions.

Sincerely,

Bonnie Teaford
City Engineer

BT:bt

cc. Bruce Feng, Public Works Director

CITY *of* CALABASAS 2001 MAY 24 P 2:51

May 16, 2001

Dr. Xavier Swamikannu, D. Env.
Chief, LA/Long Beach Storm Water Unit
Regional Water Quality Control Board, Los Angeles Region
320 W. 4th St., Suite 200
Los Angeles CA 90013

Dear Dr. Swammikannu:

Please find attached the comments on the First Draft - Los Angeles County Municipal Storm Water NPDES Permit No. CAS614001 for the City of Calabasas. I have faxed these comments with originals to follow. Thank you in advance for your time and consideration.

Sincerely,

Heather Lea Merenda
Storm Water Program Manager

encl

F:\USERS\HMERENDA\MODLPROG\2001-2006 permit\cvrltr

26135 Mureau Road
Calabasas, CA 91302-3172
(818) 878-4225
Fax (818) 878-4215

Comments from the City of Calabasas

Part 2 –

3.a) Please change paragraph to read "Upon determination by either the Permittee or the Regional Board based on scientifically sound study and scientific standard methods that discharges are causing or contributing to an exceedance of the applicable water quality standard, the Permittee shall promptly notify and thereafter submit a report to the Regional Board that describes BMPs that are currently being implemented and additional BMPs that will be implemented. The additional BMPs shall be demonstrated by the State Water Quality Task Force or like third party verification that the additional BMPs have proven effective in removing or reducing the pollutant(s) that have been proven to cause or proven to contribute to the exceedances of water quality standard using scientifically sound study and scientific standard methods. If there are no existing studies, Regional Water Quality Control Board and Permittee(s) shall jointly fund such a study. This report may be incorporated in the annual update of the SQMP and its components unless the Regional Board directs an earlier submittal. The report shall include an implementation schedule. The Regional Board may require modification the Report."

Please add fifth bullet
"5. A Watershed Management Area Plan (WMAP) is a comprehensive implementation plan for a specific Watershed Management Area (WMA). The development of the WMAP was required under Order No. 96-054. The WMAP is a document reviewing the NPDES Permit, the SQMP and any other applicable actions that address pollutants of concern and other water quality issues unique to the WMA toward the objective of reducing pollutants in discharges to the maximum extent practicable. Upon submittal by the permittees in a WMA and approval by the Executive Officer, the WMAP will supercede the SQMP. Compliance with the WMAP will be equal to compliance with the requirements of this Order."

Part 3 –

Replace language to:
"F. 2) The Principal Permittee shall modify the SQMP to comply with waste load allocations developed and approved pursuant to the process for the designation and implementation of approved Total Maximum Daily Loads (TMDL) for impaired water bodies. Upon submittal by the permittees in a WMA and approval by the Executive Officer, WMAPs that address the pollutants of concern that have TMDL will supercede the SQMP. Compliance with the WMAP will be equal to compliance with the requirements of this Order."

G.1. m AND n

Object to both m) and n) – Firstly, m) is not necessary based on a) through k). Secondly, cities cannot comply with n) because to do that requires a funding source that would be mandated to a vote. We cannot mandate the public vote for a fee to allow us the funding to hire inspectors. Secondly, we are not responsible for ensuring compliance with a RWQCB issued permit and it is not legal or our responsibility for us to do so even if we did pass an ordinance, as we are not the

permit issuers. Thirdly, cities need to have probable cause to enter private property. Just because of the suspicion of a business polluting in certain business districts or SIC categories doesn't allow government employees to just walk on a site and require businesses to perform tasks unless they are visibly discharging pollutants or there is evidence of pollution. This information does not belong in the legal authority section, as none of the cities will be able to comply with it as written. This issue will be addressed in the Part 4.

I.1.d) – it has not been established that the program will be an inspection program, please change to a more generic term.

Part 4. Special Provisions

B. Programs for Industrial/Commercial Inspections

Pg. 25 Section B.
Please clarify the language to reflect that this is a site visit. If violations of discharge prohibitions are found, only storm drain discharge prohibitions will be enforces, and the main purpose is to survey and education on BMPs. Any GIASP or other RWQCB/SWRCB permit violations will be referred to the RWQCB/SWRCB inspectors for enforcement

Pgs. 25 – 28, bullets 1, 4, & 6
BMP Implementation and site plan development are requirements under State law and therefore the RWQCB's responsibility to enforce. Calabasas currently will not agree to take over enforcement of these requirements on behalf of the RWQCB.

Pg. 25 #1
Calabasas currently will not agree to take over enforcement of these requirements on behalf of the RWQCB.

Pg. 27 #5 (a)
BMP Implementation and site plan development are requirements under State law and therefore the RWQCB's responsibility to enforce. Calabasas currently will not agree to take over enforcement of these requirements on behalf of the RWQCB.

Pg. 28 #6
BMP Implementation and site plan development are requirements under State law and therefore the RWQCB's responsibility to enforce. Calabasas currently will not agree to take over enforcement of these requirements on behalf of the RWQCB.

Pg. 28 #7
This should be working days since a shorter period may not be possible if occurring over a weekend. In addition, nuisance notification period to 72 hours to account for weekends should be changed as well.

C. Programs for Development Planning

Pg. 30 #3c & Pg. 48 ESA Definition

In the There is not a map attached to this document showing where ESAs are located and we cannot make complete comments until the complete document is available. Remove "3) discharge of storm water and urban runoff that is likely to impact a sensitive biological species or habitat", this language is too vague and is covered under Fish and Game, Endangered Species Act, CEQA and several other regulation. Including it here will further complicate the process with an organization that does not do this as its core duty.

Pg. 33 #7a7

Outdoor animal care, confinement or slaughter could be read as a single dog kennel. Please revise this to read "Outdoor LARGE animal care, confinement or slaughter". In addition, this should be consistent with the Health Department regulations for public health licenses, Los Angeles County Code Section 8. The definition should be "Outdoor animal care, confinement or slaughter with 5 or more horses, ponies, mules or donkeys; or 10 or more animals of the same of different classifications of horse, cow, sheep, goat or pig species."

E. Public Agency Activities

Pg. 42 #4 (f)
The MEP criteria should apply to landscape and recreational facilities, as since this requirement may not be possible if hazardous materials have already been reduced to the maximum extent practicable for a City to perform its required function (i.e. storing chlorine on site for public pools).

Pg. 42-43 #5
Cities that contract with Los Angeles County for catch basin cleaning will be at the mercy of the County position on the issue of the record keeping and clean out frequency. Please include "Cities that contract for these services with Los Angeles County shall meet this intent of this section by the County reporting and clean out frequency."

Pg. 39 E.1 & Pg. 44 E7 – Page 39 specifically states "Dry weather diversions" as an eighth bullet. However, there is not further discussion on page 44 after D7. Please either remove "Dry weather diversion" in D.1. or provide appropriate review and comment time for the addition of any intention to require dry weather diversions. The SUSMP and the TMDLs will both most likely deal with dry weather diversion. It is recommended IF and ONLY IF the intention was to include dry weather diversion in this permit that it be only one of a pallet of options to meet SUSMP or TMDL requirements.

CITY *of* CALABA AS

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f a x
TRANSMITTAL

TO:	Dr. Xavier Swammikannu
COMPANY:	Los Angeles Storm Wate nit
FAX #:	213-576-6640
RE:	NPDES Permit Commen ue today
DATE:	May 16, 2001
TOTAL PAGES INCLUDING COVER:	5

MESSAGE:

Please find the cover letter and comments due today for the First Draft of the LA County NPDES Permit. The orig will follow via mail today.

From the desk of...

PROJECT Pollution PREVENTION

HEATHER MERENDA

PUBLIC WORKS DEPARTMENT

818.878 4242, EXT. 293

FAX: 818.878 4205

City of Compton
DEPARTMENT OF PUBLIC WORKS

(310) 605-5505
Fax. (310) 604-3816

DANTE SEGUNDO
Deputy Director

May 16, 2001

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street
Los Angeles, California 90013

Subject: EAC Comments In Re: First Municipal NPDES Permit Draft

Dear Mr. Dickerson:

Submitted herewith for your consideration are comments prepared by the City of Compton ("City") in response to the draft Los Angeles County Municipal NPDES permit (hereinafter "draft permit"), dated April 13, 2001.

It should be noted that the draft permit is a substantial improvement over the current permit. It is less problematic in several key areas. There is, however, room for additional improvement. The written comments prepared by the City are intended to accomplish this by identifying areas of concern – including: (1) program requirements that appear to be unnecessarily labor intensive and costly; (2) new provisions that would make permit compliance unjustifiably more stringent while increasing permittee exposure to administrative enforcement actions and third party litigation; and (3) permit language that seems unclear and contradictory in a few places.

It is also suggested that regional board staff consider a different approach for presenting, evaluating, and responding to comments in re: municipal NPDES issues. In the past, permittee comments that were contrary to regional board staff views were usually rejected without compelling reason. Often ignored were the permittees legitimate concerns for the cost and effectiveness of proposed requirements. This has resulted in the adoption of unpopular and very controversial permit requirements. Permittees were thus faced with the narrow options of either accepting unreasonable requirements or challenging them administratively and legally.

In the interest of avoiding a similar fate with next municipal NPDES permit, the following is proposed:

1. Regional Board staff should make a conscientious effort to discuss and resolve concerns raised by permittees rather than just issuing a written rejection with a brief explanation as to why. Instead, a forum is recommended to promote dialog aimed towards achieving mutual agreement. Although workshops are fine for communicating requirements and

identifying general issues, they are not effective in identifying specific areas of concern or resolving disagreement. Smaller work groups are needed because they can provide better attention to issues. A work group could be comprised of permittee representatives and regional staff for each program area (e.g., development planning, development construction, illicit discharge and connection detection and elimination, etc.). The work groups should concentrate on working-out essential compliance concerns. Once this is done, developing language-related details would be relatively simple. Also, an objective third party should be involved to facilitate discussion and resolve disagreement.

2. Criteria for determining the reasonability of new permit requirements or existing ones should be developed. Such criteria should include objective readings of (a) 40 CFR 122.26 (storm water regulations under the Clean Water Act); (b) Phase II storm water rules, which are scheduled to take effect in 2003; and (c) Porter-Cologne Act (state water code) – to justify requirements not specified in the Clean Water Act, in terms of beneficial use protection, using scientific data rather than subject judgment.

3. A general workshop on Phase II storm water rules promulgated by the USEPA and scheduled for implementation in 2003, should be held to educate regional board staff, permittees, and other interested parties on these new municipal NPDES permit requirements. To that end, regional board staff is encouraged to join with permittees in inviting a representative from USEPA Region 9 conduct the workshop.

4. Delay adoption of the new permit until Phase II rules have been fully identified, evaluated, and incorporated into the next permit.

In closing, the City appreciates the time and effort that regional board staff has invested in preparing the draft permit and looks forward to participating with it in developing a new permit that will truly in improving water quality in the most cost effective manner possible. In the meantime, should you have any questions, please call me at 310.605.5506.

Sincerely,

for Dante Segundo
Deputy Director

cc: Mr. David Nahai, Chairman
Los Angeles Regional Water Quality Control Board

Mr. Art Baggett, Chairman
State Water Resources Control Board

CITY OF CARSON

May 15, 2001

Sent Via Facsimile & U.S. Mail

Dennis Dickerson, Executive Officer
California Regional Water Quality Control Board/Los Angeles Region
320 West 4th Street, Suite 2000
Los Angeles, California 90013-1105

Dear Mr. Dickerson:

Thank you for you and your staff's assistance with the initial review of the draft Los Angeles County Municipal NPDES permit dated April 13, 2001. Please find attached for your consideration comments prepared by the City of Carson in response to this draft permit.

The draft permit is a substantial improvement over its contemporary, as it is less problematic in several essential areas. However, there are some areas of concern including:

(1) Program requirements that seem unnecessarily labor intensive and costly.
(2) New provisions making permit compliance restrictive while increasing permittee exposure to administrative enforcement actions and third party litigation.
(3) Vague and contradictory permit language.

The City appreciates the time and effort that regional board staff has invested in preparing the draft permit. Our staff looks forward to participating in the development of an amended permit that will improve water quality in the most cost-effective means possible. If you have any questions regarding our attached comments, please call me directly at telephone no. (310) 952-1700, extension 1126. Thank you for your time and consideration regarding this enhancement to the NPDES program.

Sincerely,

Ken Boyce

Ken Boyce, Public Works Director

Attachment: "Municipal NPDES Permit Draft" Comments

cc: David Nahai, Chairman Los Angeles RWQCB
Art Bagget, Chairman State Water Resources Control Board
Jerome Groomes, City Manager
Kevin Ennis, City Attorney
Ann Marie Gallant, Development Services General Manager

R0002216

1. **Inspection/Enforcement of GIASWP Facilities and GCASWP Construction Sites (Part 4.A.2)**

o Proposed New Requirement

The draft permit proposes to require permittees to conduct inspections and of and, if necessary, to take enforcement action against: (1) industrial facilities subject to General Industrial Activity Storm Water Permit (GIASWP) requirements: and (2) construction sites subject to General Construction Activity Storm Water (GCASWP) requirements. Regional Board staff is of the opinion that municipalities are "ultimately responsible for the quality of storm water discharges to the MS4" -- including those discharged from GIASWP subject-facilities and GCASWP-subject construction projects.

- Issue

This proposed requirement would impose an additional cost burden on municipalities. This is unfair given that (1) the State Water Resources Control Board (SWRCB) and, by extension, the regional board, have already assumed responsibility for this task; and (2) the state collects fees from subject industrial facilities and construction sites. As to the notion that municipalities are responsible for discharges to the MS4 from GIASWP-subject industrial facilities and GCASWP-subject construction projects, regional board staff overlooks the fact that the state has elected to regulate discharges from industrial facilities and certain construction projects (viz., those that disturb 5 acres or more or soil disturbance) just as it has elected to regulate discharges to the MS4 from municipalities. In other words, the state has preempted this presumed responsibility.

- Recommendation

Discuss with regional board staff cost-effective alternatives. These include: (i) continuing the site visit program (only if funded by the principal permittee); (ii) requiring municipalities to compel industrial facilities to obtain a GIASWP (e.g., as a condition for a business license); (iii) reporting industrial facilities that do not have GIASWPs to regional board staff for enforcement action; (iv) reporting GIASWP industrial facilities that appear not to be in compliance with permit requirements (usually non-implementation of BMPs) and, if necessary, to conduct joint enforcement action.

2. **Eliminating Discretionary Approval from the SUSMP Evaluation Process (Part 4.C.3)**

o Proposed New Requirement

The draft permit proposes to remove "discretionary approval" as an important criterion for determining if certain categories of projects and redevelopments would be subject to Standard Urban Storm Water Mitigation Plan (SUSMP) requirements. Currently, a project is subject to SUSMP requirements if it is one of the 8 types of development projects/redevelopment projects and if it is subject to discretionary approval (i.e., CEQA clearance, conditional use permit, or other action involving the subjective judgment of a municipal official).

- Issue

The Regional Board -- together with the environmental community – attempted to remove discretionary approval when it adopted the SUSMP in March of 2000. That attempt was immediately challenged by a group of cities, which resulted in the restoration of discretionary approval by the State Water Resources Control Board. Most cities still want to retain discretionary approval to enable them not to require costly and questionably effective infiltration/treatment controls unless there is a compelling reason to do so. The City is aware that the regional board's attempt to eliminate discretionary approval was motivated by the understandable need to "close a loophole" that enables cities to exempt subject projects from all SUSMP measures by simply not requiring them to undergo discretionary approval (e.g., a coincidental EIR or mitigated negative declaration).

- Recommendation

There is, however, an alternative to these extremes. Although the City is opposed to eliminating discretionary approval it would not be opposed to:

i. Requiring the 8 categories of projects to be subject to all SUSMP measures except infiltration or treatment controls, which would remain discretionary. This means that (a) general mitigation measures (e.g., not increasing peak runoff from pre-development levels, protecting slopes and channels, etc.) and (b) use-specific mitigation measures (e.g., canopies for gas stations, and runoff control design requirements for wash areas, service bays, and loading docks, etc.) would be prescribed for all subject projects.

ii. Requiring infiltration/treatment controls (designed to meet the .75" or other numeric standards), only when the chemical constituents contained in runoff from the completed project would have impairing a beneficial use of a receiving water. as determined by its listing as pollutant on the 303(d) list of impaired water bodies).

3. Making 40,000 f^2 Industrial/Commercial Facilities SUSMP-Subject

o Proposed New Requirement

The draft permit proposes to add -- no later than March 9, 2001 -- one-acre industrial/commercial development projects to the list of subject SUSMP projects. Further, it seeks to define one acre as 40,000 square feet instead of 43,560 square feet.

- Issue

Adding one-acre industrial/commercial facilities to the SUSMP-applicable list appears inappropriate. This new requirement is based on the anticipation of the Phase II rule pertaining to the new developments. It is inappropriate because the Phase II rule here applies projects that "result in the land disturbance of greater than or equal to 1 acre" – not 1 acre of impervious area. In fact, the Phase II rule here would seem to apply to all new development projects, including land-use determined SUSMP projects.

- Recommendation

Eliminate this requirement and reevaluate SUSMP requirements against the Phase II rule as it relates to controlling pollutants from new developments.

3. General Plan Update (Part 4.C.12)

o Proposed New Requirement

The draft permit proposes to require municipalities to incorporate "watershed and storm water quality and quantity management considerations no later 540 days from the permit adoption date." The current permit requires this element to be incorporated into General Plans when they are updated.

- Issue

The need to update municipal General Plans to include, essentially, a storm water quality element has always been unclear. Further, it seems that the SUSMPs have obviated the need for a General Plan storm water quality element. This is because the SUSMP requires the prescription of controls for new developments and redevelopment projects that operate to minimize post-construction runoff pollution. That being the case, why is a storm water quality element needed, especially for built-out municipalities?

- Recommendation

Unless the regional board staff can justify the purpose of adding a storm water quality element addition to General Plans, this requirement should be eliminated.

4. Outreach and Education to School Districts (4.A.1.d)

o Proposed New Requirement

The draft permit proposes that permittees provide unified[1] school districts within their jurisdictions materials, live presentations, brochures, and other media necessary to storm water-educate a minimum of 50% of all school children (K-12 to 12), every 2 years.

- Issue

The City does not object to this requirement as long as it does not have to pay for it. It represents a new cost to cities. The City takes the view that schools districts are essentially state-managed governmental entities. The state, therefore, should provide the resources necessary to educating school children on runoff pollution prevention. Under the current permit, the principal permittee has assumed responsibility for this task. Using flood control funds (collected from residents and businesses), it has visited every subject school in every city and unincorporated areas of Los Angeles County. If the principal permittee agrees to continue performing this task as a means of satisfying this new requirement, the City would not object to it.

[1]Why are just "unified" school districts included here and not other school districts?

- Recommendation

Makes this requirement a principal permittee responsibility.

5. **Outreach and Education to Small Businesses (4.A.1.b)**

o Proposed New Requirement

Municipalities would be required to develop and implement a Business Assistance Program to educate subject businesses to provide: (i) on-site technical assistance/consultant by telephone; (ii) BMP-information and educational materials; (3) provide information about environmental consultants, hazardous waste treatment, hauling, disposal, and recycling services, and control practices; and (4) information regarding pollution prevention and control practices.

- Issue

This proposed new task is arbitrary because it enlarges the commercial facilities category from gas, stations, automotive facilities, and restaurants to include any business that (1) has less than 100 employees; (2) lacks funding for private consulting; (3) lacks expertise necessary to understand and comply with storm water regulations; and (4) has requested assistance or was referred through the industrial/commercial inspection program. Effectively, this could include any business, such as consulting agencies, tailor shops. barbershops, and hundreds of others that can hardly be considered as pollution generators. This proposed requirement -- which would be very costly -- does not provide any justification as to why it is necessary to perform outreach to these types of businesses.

- Recommendation

Eliminate this requirement.

6. **Lowering the Threshold for Local SWPPPs (Part 4.D.2)**

o Proposed New Requirement

The draft permit proposes to lower the threshold for requiring local SWPPPs (storm water pollution prevention plans). Currently, local SWPPPs are required from construction projects that are expected to cause a soil disturbance of two to fewer than five acres, by grading, clearing, and or excavating. The proposed permit would lower this threshold to between 1 acre and under 5 acres.

- Issue

Lowering the threshold here seems to be associated with a change in Phase II municipal NPDES regulations. In 2003, the threshold for construction sites requiring GCASWPs will be lowered from 5 acres to 1 acre. Apparently, Regional Board staff believes that this should have corresponding affect on the next level of construction requirements. The City disagrees with this rationale. The reason SWPPPs exist in the first place is to enable inspection/enforcement personnel to determine compliance with BMPs that are intended to: (1) reduce sediment and chemical constituent discharges to the MS4; and (2) certify that no illicit discharges would be released to the MS4. For larger construction sites, a SWPPP is

necessary because of the time it would take for inspection personnel to do a walk-through. However, for smaller construction sites this really is not a problem. Inspection personnel can easily identify if basic BMPs – which really do not require SWPPPs – are in place. Thus, to require permittees to require local SWPPPs for projects even less than 2 acres would be a waste of municipal time and money.

Beyond this, given that the threshold for determining GCASWP construction sites will be lowered in 2003 from 5 acres to 1 acre and given that the current permit requirement of prescribing minimum BMPs to construction sites of 2 acres and under has been effective, there is no reason tamper with that requirement now.

- Recommendation

Maintain the current soil disturbance requirement for local SWPPPs (2 and 5 acres) until 2003 when 1-plus acre projects will require GCASWP coverage.

7. **Training Contractors (Part 4.D.1.a)**

   o Proposed New Requirement

Under the construction program, municipal permittees would be required to "implement an education program to discuss storm water pollution prevention and controls at construction sites and distribute educational materials targeted at the construction community during meetings, workshops, pre-construction meetings, and inspections." The current requirement is to provide over-the-counter developer/contractor information regarding development construction requirements.

- Issue

The additional requirement is superfluous and, if approved, would impose additional unnecessary costs on cities. Actually, at present, communicating construction program requirements to contractors/developers is a simple task -- it involves: (1) providing, over-the-counter, written materials and verbal information regarding requirements associated with the three categories of construction projects; and (2) providing a list and description of construction-related BMPs. The draft permit proposes additional tasks that accomplish the same thing, but in more elaborate and costly terms.

- Recommendation

Eliminate this requirement because it would do nothing to improve the City's ability to inform contractors/developers of their obligations under the municipal NPDES permit.

8. **Public Agency (Part 4.E.6.a)**

   o Proposed New Requirement

The draft permit proposes to increase the frequency of street sweeping to at least 4 times per month "in areas generating high volumes of trash and "an average not less the twice per month in areas that generate moderate volumes of trash on traffic collector streets and

residential areas." The current permit calls for a minimum of sweeping once a month. Street sweeping is essentially a trash-reducing BMP.

- Recommendation

Given the cost associated with increased street sweeping and that there are less expensive trash-mitigation BMPs available, this requirement should be eliminated.

9. **Public Agency (Part 4.E.5.b)**

o Proposed New Requirement

The draft permit proposes to increase the frequency of clean-outs of priority catch basins (40% full) from once a year, just prior to the wet season (October 1 to April 30), to twice a year, from May 1 to September 30 (during the dry season).

- Issue

The justification for making this requirement is based more on the fact that the Ventura permit (adopted in June of 2000) requires it. Actually, increasing the frequency here makes no sense. Whether a catch basin is full at any level during the dry season is issueless because trash and other material trapped in it are not going to get into a receiving water because the hydraulic mechanism is not there (with the exception of a rare storm event every now and then). This is why, historically, catch basin clean-outs are done just before the wet season. While storm events during the wet season do occur from time-to-time, they are so rare as to warrant imposing such an additional expense on municipalities.

- Recommendation

Eliminate this requirement because it would do very little reduce trash discharges to the receiving water. Further, the zero trash TMDL for Los Angeles River and Ballona Creek watershed-resident cities would make this requirement superfluous. Beyond this, it denies permittees the option of resorting to more cost-effective trash reducing BMPs.

10. **Public Agency (Part 4.E.6.c)**

o Proposed New Requirement

The draft permit proposes to increase the frequency of parking lot cleanings from once a month to twice a month.

- Issue

Under the current permit, only parking lots with 25-plus spaces are subject to monthly cleanings. Thus, the scope of this requirement is enlarged to include every municipal parking lot, regardless of size, and increases the cleaning and inspection frequency from once a month to twice a month. The justification for making this requirement more stringent is not clear.

– Recommendation

Eliminate the requirement and, therewith, its additional cost, unless data can be provided to show that an increase in parking lot cleanings from once a month to twice month would improve receiving water quality.

II. OTHER CHANGES TO PROPOSED MUNICIPAL NPDES PERMIT

1. **Discharge Prohibitions (Part 1.2.c)**

o Issue

The proposed permit eliminates street wash water as an exempted non-storm water discharge. No explanation is provided as to why. CFR 40.122.26 places street wash water under the exempted non-storm water discharge category (as opposed to an illicit discharge). Proposed Phase II regulations also exempt street wash water – and other categories of non-storm water discharges -- unless the operator of the municipal separate storm sewer system ("MS4") deems it to be " significant contributor of pollutants." To date, no such determination has been made.

– Recommendation

Street wash water should be listed as an exempted non-storm water discharge (along with sidewalk wash water) as long as it does not (i) contain surfactants or other chemical constituents; or (ii) transport sediment, particulates, or other material to the storm drain.

2. **Model Programs** (no reference in draft permit)

o Issue

The proposed draft permit makes no clear reference to the current model programs. Are they to be re-written or carried-over from this permit to the new one?

3. **Notice to Meet and Confer** (no permit reference)

o Issue

The proposed permit lacks the "notice to meet and confer" provision contained in the existing permit. This provision is intended to, among other things, resolve compliance issues prior to the regional board taking enforcement action. Most compliance issues -- as recently demonstrated by the Notices of Violations issued by the regional board to several municipal permittees -- are the result of misinterpretation or misunderstanding on the part of regional board staff, especially new staff. The meet and confer provision is intended to allow the resolution of disagreements arising out of misinterpretation or misunderstanding before issuing NOVs -- in itself an enforcement action. Since it is likely that the draft permit

will contain provisions that are open to interpretation, it makes sense to retain the meet and confer provision.

4. **Receiving Waters Limitations (Part 2)**

o Issue

Notwithstanding that Ventura and Long Beach municipal permits contain the same receiving water limitations language presented in the proposed permit, the City is opposed to such language and prefers, instead, existing permit language. An alternative would be to remove the following provisions as mentioned by the principal permittee:

1. Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited.
2. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance.

The City objects to the proposed existing permit language because it does not allow implementing the permit and its programs as a means of achieving compliance with water quality standards and objectives. This seems to undermine the whole purpose of the permit, which is to tolerate some exceedances of water quality standards/objectives (contained in the Los Angeles Basin Plan) -- provided, of course that permit condition are met. It is simply impossible for any municipality to prevent all discharges that cause or contribute to the violation of water quality standards or objectives.

5. **180 Day Implementation Program Period (various program provisions)**

o The Issue

The proposed permit contains a 180-day implementation date for each program category (development planning, development construction illicit connection/discharge, public agency, and public education). 180 days is not enough time to revise and implement each of the revised programs because of budgetary constraints. Most cities need at least one year of advanced time to budget for new costs. Some cities need two years.

----------END----------

0797

CITY OF CARSON 701 EAST CARSON STREET, CARSON, CALIFORNIA 90745 (310) 830-7600

TELECOPY COVER SHEET

Original will follow

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Date: 5-16-01

Time: _____

Page: 1 of 9

PLEASE DELIVER THE FOLLOWING PAGES TO:

Agency: Calif Regional Water Quality Board

Attention: Dennis Dickerson

FAX Number: 213-576-6625

Phone Number: _____

COMMENTS: Comments In Re: Draft Municipal NPDES Permit

FROM: Stephen Arian

Sender: _____

Department: PUBLIC WORKS DEPARTMENT

Phone Number: (310) 952-1700 X1125

FAX Number: (310) 835-5749

The City of Carson uses a Xerox model Pro-535 automatic telecopier which is compatible with most group 2 & 3 telecopy machines.

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City of Commerce

2001 MAY 22 P 3:00

May 16, 2001

Mr. Dennis A. Dickerson
Executive Officer
LARWQCB
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Re: National Pollutant Discharge
Elimination System Municipal Storm Water Permit

Dear Mr. Dickerson:

The City of Commerce is deeply concerned with the current state of the proposed NPDES Permit for Los Angeles County. The City of Commerce is a small city that sits between portions of the Los Angeles River and the Rio Hondo River and shares flood control basins and storm drains with adjacent cities that would have financial difficulties in meeting the intent of the permit.

The City of Commerce has a small staff of employees who are not trained or technically equipped to regulate the provisions of the State permit. Will Proposition 218 impose legal problems in raising fees to pay for infrastructure, additional programs and inspections? Would the permit require cities to prohibit leaf blowers that can be used to "push" trash into a catch basin? Would youth groups be prohibited from conducting car wash fundraisers? Would existing restaurants be required to cover trash enclosures? Would State mandated recycling enclosures for commercial/retail buildings require roof covers? Will cities be required to prohibit or establish deposits on styrofoam cups and styrofoam food containers used by the fast food industry?

The threat of litigation by a third party is a very serious matter to a city that was a defendant in the Operating Industries case where the mere issuance of a business license to a trash hauler made the city culpable. The city was also a defendant in a case involving membership in the Sanitation Districts and was held liable for discharges into the Pacific Ocean. Will the city be liable for cigarette butts or filters that reach the Rio Hondo River? We need some answers to these questions.

Compliance with this permit will be very difficult because the responsibilities for portions of the permit are spread over various departments and various Los Angeles County agencies. While California was becoming a "business friendly" state again, the imposition of untried and unreliable treatment of stormwater runoff will cause further damage to the local economy and the State's economy. We hope that the Board will negotiate a new permit with all the cities.

Sincerely,

Raul T. Romero

Raul T. Romero
City Administrator

cc: State Senator, Martha Escistia
Public Services
Community Development

2535 Commerce Way
Commerce, CA 90040
Phone: 323•722•4805
Fax: 323•726•6231

"Where Quality Service Is Our Tradition"

CITY OF COMPTON
DEPARTMENT OF PUBLIC WORKS
205 SOUTH WILLOWBROOK AVENUE
COMPTON, CA 90220
310.605.5505
310.604.3816

FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
Dennis Dickerson	Rene Farrington
COMPANY:	DATE:
California Regional Water Quality Control Board	05/16/01
FAX NUMBER:	PHONE NUMBER:
213.576.6625	

☐ URGENT ■ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

Please review the faxed letter regarding EAC Comments in Re: First Municipal NPDES Draft Permit.

Thank you.

City of Compton
DEPARTMENT OF PUBLIC WORKS

(310) 605-5505
Fax. (310) 604-3816

DANTE SEGUNDO
Deputy Director

May 16, 2001

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street
Los Angeles, California 90013

Subject: EAC Comments In Re: First Municipal NPDES Permit Draft

Dear Mr. Dickerson:

Submitted herewith for your consideration are comments prepared by the City of Compton ("City") in response to the draft Los Angeles County Municipal NPDES permit (hereinafter "draft permit"), dated April 13, 2001.

It should be noted that the draft permit is a substantial improvement over the current permit. It is less problematic in several key areas. There is, however, room for additional improvement. The written comments prepared by the City are intended to accomplish this by identifying areas of concern -- including: (1) program requirements that appear to be unnecessarily labor intensive and costly; (2) new provisions that would make permit compliance unjustifiably more stringent while increasing permittee exposure to administrative enforcement actions and third party litigation; and (3) permit language that seems unclear and contradictory in a few places.

It is also suggested that regional board staff consider a different approach for presenting, evaluating, and responding to comments in re: municipal NPDES issues. In the past, permittee comments that were contrary to regional board staff views were usually rejected without compelling reason. Often ignored were the permittees legitimate concerns for the cost and effectiveness of proposed requirements. This has resulted in the adoption of unpopular and very controversial permit requirements. Permittees were thus faced with the narrow options of either accepting unreasonable requirements or challenging them administratively and legally.

In the interest of avoiding a similar fate with next municipal NPDES permit, the following is proposed:

1. Regional Board staff should make a conscientious effort to discuss and resolve concerns raised by permittees rather than just issuing a written rejection with a brief explanation as to why. Instead, a forum is recommended to promote dialog aimed towards achieving mutual agreement. Although workshops are fine for communicating requirements and

identifying general issues, they are not effective in identifying specific areas of concern or resolving disagreement. Smaller work groups are needed because they can provide better attention to issues. A work group could be comprised of permittee representatives and regional staff for each program area (e.g., development planning, development construction, illicit discharge and connection detection and elimination, etc.). The work groups should concentrate on working-out essential compliance concerns. Once this is done, developing language-related details would be relatively simple. Also, an objective third party should be involved to facilitate discussion and resolve disagreement.

2. Criteria for determining the reasonability of new permit requirements or existing ones should be developed. Such criteria should include objective readings of (a) 40 CFR 122.26 (storm water regulations under the Clean Water Act); (b) Phase II storm water rules, which are scheduled to take effect in 2003; and (c) Porter-Cologne Act (state water code) – to justify requirements not specified in the Clean Water Act, in terms of beneficial use protection, using scientific data rather than subject judgment.

3. A general workshop on Phase II storm water rules promulgated by the USEPA and scheduled for implementation in 2003, should be held to educate regional board staff, permittees, and other interested parties on these new municipal NPDES permit requirements. To that end, regional board staff is encouraged to join with permittees in inviting a representative from USEPA Region 9 conduct the workshop.

4. Delay adoption of the new permit until Phase II rules have been fully identified, evaluated, and incorporated into the next permit.

In closing, the City appreciates the time and effort that regional board staff has invested in preparing the draft permit and looks forward to participating with it in developing a new permit that will truly in improving water quality in the most cost effective manner possible. In the meantime, should you have any questions, please call me at 310.605.5506.

Sincerely,

for Dante Segundo
Deputy Director

cc: Mr. David Nahai, Chairman
Los Angeles Regional Water Quality Control Board

Mr. Art Baggett, Chairman
State Water Resources Control Board

CITY OF COVINA

125 East College Street ● Covina, California 91723-2199

Public Works Department
Environmental Services Division
(626) 858-7252 • (626) 858-5556 FAX

2001 MAY -4 P 1:59

May 3, 2001

Dr. Xavier Swamikannu
Chief, LA/Long Beach Storm Water Unit
Regional Water Quality Control Board, Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Dear Dr. Swamikannu:

We have reviewed the First Draft – Los Angeles County Municipal Storm Water NPDES Permit and have the following comments:

1. Page 12, paragraph c): Add "potable water flow" to the list of exempted discharges. This is an exemption in the present permit and is consistent with the objective of the Order stated on page 10, paragraph 43, "discharge will neither cause violations of water quality objectives nor create conditions of nuisance in receiving waters."
2. Page 16, paragraph D: How many representatives are to be allowed on the EAC from the City of Los Angeles and Los Angeles County, respectively? They should be limited to one representative each so as not to dominate the Watershed representatives in issues requiring a vote.
3. Page 17, paragraph E.3: The last sentence refers to Attachment A. There is no Attachment A.
4. Page 17, paragraph F.1: This paragraph allows the Permittees only 180 days (6 months) to develop new model programs based on the new permit. This is much too short a deadline. Recommend this requirement be changed to 12 months. The present permit gave 8 months for the model illicit connection/discharge elimination programs, 18 months for the model developer program, 14 months for the model construction inspection program, and 16 months for the model public agency program.
5. Page 17, paragraph F.2: Change "Total Daily Maximum Loads" to "Total Maximum Daily Loads".
6. Page 19, paragraph p): This paragraph requires adoption or amendment of a storm water ordinance to be "effective immediately upon the adoption of this Order." This is impossible. Recommend the paragraph be changed to "effective 7 months after the adoption of this Order". This would be consistent with the deadline given to implement the SUSMP.
7. Page 23: The third paragraph requires the Permittees to educate 50 percent of all school children in the school districts every 2 years on storm water pollution. This requirement should be deleted because the Permittees do not have the budget or the staff available to carry out such an aggressive program.
8. Page 23, paragraph e): Change the requirement to develop the outreach programs from no later than 6 months from adoption to no later than 12 months from adoption date. This is a more reasonable time period. Also, can the last sentence, "Programs shall be appropriate

for the anthropogenic sources of each pollutant", be changed to "Programs shall consider the human sources of each pollutant"?

9. Page 24. Paragraph b): The requirement for a formal Business Assistance Program should be deleted. Permittees do not have the staff or the budget to support a formal program. Information is adequately passed to business on an as-needed basis.
10. Page 25, paragraph B: Permittees do not have the legal authority to enforce compliance with state-issued permits. The inspection program should be deleted and the educational site visit program should be continued from the present permit.
11. Page 29, paragraph 2: The 90-day deadline to establish and enforce numerical criteria for peak flow control is too short. Recommend this be changed to 180 days.
12. Page 30, paragraph 3.a): Please clarify what is meant by "single-family hillside home developments". Does this mean a single house or a development of single-family homes? The present SUSMP says "single-family hillside residences".
13. Page 30, paragraph 3.b)(1): Does "Single-family hillside residential developments of 10,000 square feet or more" mean one house or many houses, and does the 10,000 square foot criteria refer to the living area of one house, or the building footprint, or the impervious area, or the lot size? Recommend the category be changed to say "Single-family hillside residences of 10,000 square feet or more impervious area."
14. Page 32, paragraph 5.a): Same comment as #13.
15. Page 32, paragraph 6.a): Change "One acre (40,000 square feet)" to "One acre (43,560 square feet)". Rounding down to 40,000 makes the criteria unnecessarily stringent.
16. Page 35, paragraph 14.a): What does the phrase "with immediate effect" mean at the end of the sentence? Please make this language more clear.
17. Page 35, paragraph 14.b): Change "Permittees" to "The Principle Permittee in conjunction with the Permittees". The Permittees do not have the budget or the expertise to develop this technical manual.
18. Page 36, paragraph D: The deadline to revise the Construction Development model program in 180 days is too short. Change this deadline to 12 months.
19. Page 39, paragraph 4.b): Delete this requirement to use an electronic system to track grading permits. Each Permittee should be allowed to track the permits in any way that works. Funding constraints may prevent Permittees from using electronic systems.
20. Page 40, paragraph 3.a): The deadline to revise the Construction Development model program in 180 days is too short. Change this deadline to 12 months.
21. Page 42, paragraph 4: Change "Each Permittee shall continue to implement the following requirements with the following additions:" to "Each Permittee shall implement the following requirements:".
22. Page 42, paragraph 5: Change the title from "Storm Drain Operation and Management" to "Storm Drain Operation and Maintenance".
23. Page 43, paragraph 5.b): Change "Classify priority catch-basins to be those that are 40 percent full;" to "Classify priority catch-basins to be those that are found to be 40 percent full during the annual inspection;".
24. Page 43, paragraph 5.f): Delete this requirement. All Permittees do not have a record of all the catch basins in the community and do not have the capability to submit the record as a GIS layer. This is more appropriately tasked to the Principal Permittee.
25. Page 43, unnumbered paragraph after 5.f): Add "open channel" before "Storm Drain Maintenance".
26. Page 43, the second paragraph b): Is there a word missing in the phrase "are being utilized to water quality"?
27. Page 43, the second paragraph e): Change "catch basin" to "open channel".
28. Page 44, paragraph F: The deadline to revise the IC/ID model program in 180 days is too short. Change this deadline to 12 months.
29. Page 45, paragraph 1.b): Analytic tools such as a Geographic Information System may not be available to Permittees because of staffing and budget constraints. This should be a requirement for the Principal Permittee.

30. Page 45, paragraph 2.b): The new requirement to perform proactive screening should be deleted—it is an expensive task with an unproven payoff that cannot be afforded by Permittees. Also, what does "a review of documentation for storm drain connections made in the six months following the 1994 Northridge Earthquake, and in the year following the 1992 civil unrest" have to do with determining priority areas for screening, especially for Permittees in the San Gabriel River Watershed? More pertinent criteria for proactive screening must be developed.
31. Page 60, paragraph M: Please add a definition for "upset" as you did for "bypass" in the previous paragraph.
32. Page 62, paragraph S: Should not the Principal Permittee submit a Report of Waste Discharge rather than a Storm Water Quality Management Plan as application for reissue of waste discharge requirements?
33. Page 66, paragraph D.2: Delete this requirement to report total square feet of impervious area conditioned for mitigation. The figure is not readily available and it has no value in reducing storm water pollution.
34. Page 66, paragraph D.3: Change "Significant date rewrite completed" to "Date significant rewrite completed".
35. Page 67, paragraph D.6: There is no requirement in the permit for the technical manual to be made available electronically, therefore, the date of availability is not applicable.
36. Page 68, paragraph G.2: The statistic "percentage of total curb miles swept annually as a function of total curb miles" does not seem to be meaningful. If every street is swept only once a year, you get 100%. If every street is swept 4 times a month, you get 4,800%. Is this the metric you are looking for?
37. Page 74, paragraph D.1.d): In the last sentence, what are "storm water particles" and what kind of fate might befall them?

If there are any questions, please call Charles Redden at (626) 858-7204.

Sincerely,

Vince Mastrosimone

Vince Mastrosimone
Public Works Director

cc: Mr. Mustafa Ariki, Los Angeles County Department of Public Works
File

CITY OF **CUDAHY** CALIFORNIA

Incorporated November 10, 1960

2001 MAY 18 P 2:42

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May 16, 2001

Mr. Dennis Dickerson
Executive Director
Regional Water Quality Control
Board – Los Angeles
320 W. Fourth Street, Suite 200
Los Angeles, CA 90013-1105

Subject: Review Comments on Draft Los Angeles County Storm Water and Urban Runoff Permit

Dear Mr. Dickerson:

Thank you for the opportunity to comment on the April 13, 2001, Draft Municipal Storm Water Permit. This permit will have a significant impact on the daily lives of the residents and businesses of Los Angeles County. A large percentage of the economy of Los Angeles County is tied to tourism at the beaches along the coast and at the inland lakes and streams. It is in everyone's best interest to protect these resources.

The Regional Board must recognize the limited resources available at the municipal level to support these programs. The Clean Water Act (CWA) establishes a Maximum Extent Practical (MEP) standard for Storm Water Permits. This permit, in several areas, attempts to apply numeric standards to Municipal Programs. The application of numeric standards will make compliance with the permit impossible for the municipalities and subject them to numerous citizen lawsuits.

While we recognize the importance of the CWA and the intent of this draft permit, we must also address the cities' ability to comply with the requirements without exposure to unnecessary liability. The following comments reflect the cities' desire to comply with the CWA and the Regional Water Quality Control Board's (Board) permit. Where suggestions are made they are intended to provide the Board with alternative wording that we believe will comply with the MEP intent of the CWA. The Board will receive many comments from lawyers and others familiar with the statutory requirements of the CWA. My comments will focus on the affect of the draft permit on the cities of Los Angeles County.

1. Part 2. Receiving Water Limitation sections 1 and 2. Section 1 is so broad that the cities and the County will face liability for "cause(ing) or contribute(ing) to the violation of water quality standards or water quality objectives". Section 2 will pose the threat of liability for "cause(ing) or contribute(ing) to a condition of nuisance. These two provisions must be revised to allow the cities and the County to operate the Municipal Separate Storm Sewer System (MS4) without fear of litigation from NRDC or other environmental groups for minimal impacts on water quality. Each and every resident of Los Angeles County depends on the MS4 to protect our homes and businesses from the real threat of flooding. The system has been built up over the years to efficiently carry storm runoff to the ocean. To convert this system to a full treatment system will take years. The Board cannot leave the cities and County open to litigation if you expect the improvements to be accomplished.

2. Part 3G(n). Legal Authority for inspections, surveillance and monitoring of Industrial, Commercial and Construction sites. This paragraph is overly broad. Cities and the County have the authority to investigate violations of law. Normally this occurs when the Police Department or the District Attorney is notified of a violation. These agencies are trained to conduct investigation and have the legal support to obtain the needed warrants to capture private records. These techniques are generally reserved for cases of some significance. Unfortunately, police agencies and prosecutors have not been convinced that discharges to the MS4 are important enough when they compare it to their workload involving thieves and murderers. Thus, it is not sufficient to ask cities and the County to certify to their legal authority, because the authority is granted by the State Judicial system. The greater question that should be asked is "has the crime been elevated to the degree needed to cause enforcement by local authorities." In extreme cases it is likely that the effort will be made, but for most incidents it is unlikely that any action will be taken to investigate or enforce minor illegal discharges.

   This section will be used to convict cities and the County of violating the Storm Water permit due to lack of detailed investigations and prosecutions. This will not be difficult to prove. We do not believe that the Board should be creating regulations that will subject the cities and the County to broad liability.

3. Part 3G(p). Adopt and implement an agency-specific storm water and urban runoff ordinance. The requirement of this paragraph that the ordinance be "effective immediately upon the adoption of this Order." This requirement is not practical. Cities and the County have a procedure to adopt ordinances. These procedures are derived from State Law that governs City and County authority. We must conduct public hearings before an Ordinance imposing restrictions on property rights can be adopted to allow the public to provide input to the process. Then unless there is a significant public health and safety concern involved, the ordinance will take effect thirty (30) days after the second reading of the ordinance. Thus, the requirement that the cities and the County adopt a new ordinance and have it effective upon the

approval of this order is impossible. I would suggest that a 180 day schedule be specified like the Board imposed for the SUSMP provisions.

4. Part 4A(2)(b). Business Assistance Program. While the principal involved with the Business Assistance Program is good, as currently written the program is flawed. The first problem is in the definition of a small business. Any business that has 99 employees is not a small business. To pay these employees even at minimum wage, the business must have significant revenue. I believe that the number of employees must be reduced to "less than 25 employees" or the business must be tied to actual revenue, say less than $1,000,000 in gross revenue. By setting the size of a small business at one of these levels, the cities and the County will not be assisting businesses that can afford to obtain assistance on its own. The cities and the County have already offered to assist businesses that may not have a clear understanding as a result of the Educational Site Visit program. In most cases the offers were not well received. The businesses often treated the contact as an attempt to penalize the businesses rather than to help deal with the Storm Water Issue. The second issue with the program is the provision that states that the program "shall be a confidential and non-enforcement program." In most cities the ability to have two separate departments, one to assist businesses and another to enforce the regulations, will be impossible. Thus, the city employees charged with helping the businesses in a non-enforcement manner will likely be the same people that will visit and investigate violations of the business. I would suggest that the first visit be designed to assist the business understand the program. Any future visits will involve enforcement that will then become progressively more severe. Without the ability to implement the program in this way the cities and the County will lack credibility when enforcement is required.

5. Part 4B. Programs for Industrial/Commercial Inspections. This part of the permit is the most objectionable part of the draft permit. This attempt by the Board to transfer its obligation to inspect and enforce against Phase I Industries and State Construction Permits without transferring the source of and the authority to collect revenue is unacceptable. It is clear to all cities and the County that the State has not adequately funded the inspection part of the NPDES program. If the State were to adequately fund the program they would have to include employees to perform the plan review, inspectors to train and to verify compliance in the field and prosecutors to enforce against violators. These are the same provisions that the Board is expecting the cities and the County to implement, yet the Board does not implement the same programs.

   As a City agent I do visit sites to verify compliance with State and Local Building Codes and other regulations to ensure that the Health and Safety of the public. But, for the Board to require that the cities and the County take over its responsibilities and liabilities because the Board will not adequately fund the program is

unacceptable. Until complete and adequate funding is provided, the cities and the County must insist that this provision be removed.

6. Part 4B(4). BMP Implementation. This section is vague and contradictory. The first paragraph starts by saying that the City "shall require the implementation of the designated minimum BMP's, as approved in Resolution 98-08, at each industrial/commercial site within its jurisdiction." While this will be a formidable task by itself, the paragraph then ends by requiring the Permittee's "shall also implement or require any additional site specific BMP's ... which are more stringent than those required under the Statewide General Industrial Permit." This requirement I find confusing when I review the Permit. The General Industrial Permit does not cover all Industrial/Commercial businesses in my town. So as I read this requirement, I am required to impose harsher standards on non-regulated industry than the State would have the authority to impose on the Phase 1 industries identified in the CWA. I question if the Board has the Legal Authority to accomplish this requirement, much less force the permittee's to impose these standards. The other question that this requirement raises relates to the conditions that would trigger these harsh requirements. It is not clear if I am to impose this harsh standard on all of my business, or just those few that I deem to be gross violators. I believe that without clear requirements the City would stand little or no chance of prevailing against a court challenge.

   I would recommend that the Board revise this requirement to limit the city obligations to the requirements of Resolution 98-08.

   The second paragraph requires the Permittees to "implement, or require implementation of, additional controls for Industrial/Commercial sites tributary to CWA section 303d impaired water bodies ... as necessary to comply with this order." The paragraph also requires the cities to impose additional standards on Industrial/Commercial sites within or directly adjacent to or discharging directly to coastal lagoons or environmentally sensitive areas. Both of these requirements are vague as to intent and are impossible to enforce on businesses that may have been operating in the same location for twenty or more years. These businesses are going to ask, and rightly so, what proof the Permittees have to justify the imposition of new operating restrictions.

   I believe that the section, as written, is unenforceable and will be overturned in Court action. Since the City is damned if it imposes the requirement and damned if it fails to impose the requirement, each Permittee looses this battle. This section must be written with some justification for its inclusion in the permit.

7. Part 4B(5)d. Regional Board Inspection Coordination. This section states that if the Regional Board has performed an inspection of an Industrial/Commercial site the Permittees do not need to inspect that site. The section leaves unsaid how the coordination will happen between the Permittees and the Board. If the Board is to conduct an unannounced inspection of an Industrial/Commercial site they must follow up within a set time with a notice to the Permittee that the inspection has taken place. I also believe that the Permittee should be notified of the Board findings so that problem businesses can be monitored.

8. Part 4C(3)b. Board Revisions to the SUSMP Projects. I must request clarification on the change made to the Hillside Residential property. As written, item b(1) states that single-family hillside residential developments of "10,000" square feet or more. I have heard Permittees describe this as 10,000 square feet of disturbed area or 10,000 square feet of lot area. It is unclear how the Board intends this provision to be enforced. Clarification is required.

9. Part 4C(8). Redevelopment Projects. The wording used in this section does not agree with the definition of Redevelopment as contained in the Definitions in Part 5. This section must be revised to match the Definition since the definition was established by State Board Action on the SUSMP Petition.

10. Part 4C(12). General Plan Update. As noted at the Board Workshop on April 24th the requirement for every City to modify its general plan to reflect Storm Water Quality issues will take longer than 540 days (18 months) allowed in the permit. I believe that the Board must participate in a workshop with Planning Directors from all Permittees to establish the elements of the general plan that must be revised. Through this process all Permittees will perform the revisions correctly the first time rather than have to correct a flawed document. State Law limits the number of times that the General Plan can be modified in any one-year. The Permittees need to identify all elements that will be affected before contracts are issued for these amendments. Once the workshop is held, the Board should then allow not less than three years for Permittees to budget for and complete the General Plan Update.

11. Part 4E(1). Dry Weather Diversions.The Board has provided detailed requirements for all Public Agency activities except dry weather diversions. It is not clear if the Board is requiring all Permittees to implement a dry weather diversion program or if the Board is only mentioning this as a possible Public Agency activity. In either case it appears that the Permittees should be provided with direction from the Board on its intent on dry weather diversion. If there are no specific requirements this subgroup should not be listed at all.

12. Permit Wide Requirement. Throughout the Permit the Board includes requirements that the Permittees maintain computer records of a wide variety of activities. Without standards for the design of these data bases the County as Principal Permittee will get information that is in any number of formats. Not all Permittees have the same computer system support and few Permittees have GIS capabilities. The Board should mandate that the Principal Permittee develop an application that contains all of the data that the Board wants collected. The Principal Permittee should then be required to supply the application to the Permittees. Through this means the Permittees will provide information that is uniform and transferable.

The comments included above do not represent all of our concerns about the draft permit. But, due to the limited time available to conduct this review the important areas have been highlighted. At this point I understand that the Permit will not be presented to the Board until September or October, depending on the Boards schedule. I understand that the Board cannot negotiate with each Permittee individually, however I hope that the Board will address these issues by incorporating the requested changes. Permittees support the Clean Water Act and the Boards desire to clean up the waters of Los Angeles County. However the resources available to implement new regulations are not unlimited. The Board will get cooperation if they propose a practical permit based on MEP Technology. Any permit based on numeric limits will not be supported and will only lead to Board fines and legal actions challenging the proposed permit.

If you would like to further discuss this issue or have any questions, please contact me at (562) 908-6214.

Sincerely,

CITY OF CUDAHY

William C. Pagett, P.E.
City Engineer

Copy: City Manager
City Council
City Attorney

ELK:mf
12446\3002\L09
06-130

City of Diamond Bar

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May 15, 2001

Dr. Xavier Swamikannu, Chief
LA/Long Beach Storm Water Unit
Regional Water Quality Control Board, Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

2001 MAY 17 P 3:43

Re: Response to Draft NPDES Permit

Dear Dr. Swamikannu,

Thank you for the opportunity to review the proposed renewal of the municipal storm water permit for the County of Los Angeles, which includes the City of Diamond Bar (City). As a co-permittee, we have concerns with the proposed permit as well as suggestions, which we hope could be incorporated in any future drafts of the permit.

First, we are concerned with the expansion of the existing permit to include new provisions and requirements without allowing for model programs recently devised to take full effect and without regard to funding. Areas where expansion occurs includes inspections, subjecting all building permits to storm water requirements, and street sweeping.

For instance, co-permittees are required to conduct at least two educational site visits at each priority business or source during the term of the existing permit. This dispensing of educational information is regarded by the Regional Board as sufficient training and justification for co-permittees to carry out full-blown inspections at all commercial and industrial facilities within a jurisdiction. Not only does our City lack the expertise to conduct such inspections but we also do not have the authority to enforce state requirements upon sources within our jurisdiction. We already inspect and enforce for local ordinance requirements, so the expansion of the permit to require co-permittees to conduct state-related inspection and enforcement is duplicative and counterproductive.

Recently, the State Water Board disallowed the Regional Board from expanding new projects to all building projects within the concept of the SUSMP. The new permit would again include all building projects as subject to SUSMP. We object to this as costly and unnecessary.

Street sweeping is among the most costly of municipal services conducted by our jurisdiction. We sweep at least bi-weekly throughout the City. However, the renewal would increase sweeping to two or four times per month depending upon location. We already have several programs in place to address littering and debris upon city streets, and the expansion of street sweeping to such a high

level will likely not result in significant improvement in terms of storm water quality. Our programs include home composting, grass cycling, street inspections, anti-littering programs, and educational outreach.

Second, there appears to be new interpretations of what constituents and pollutants are covered by the permit renewal. For instance, the new permit would prohibit discharges to prevent downstream erosion and protect habitat. Erosion, e.g., soil, is of paramount concern to the City, but the Federal Regulations do not appear to address soil and erosion as storm water concerns to be controlled by MS4 permits. Also, the permit is intended to allow for discharge of some level of pollution as identified by Federal Law; however, new language is inserted in a number of locations that address the responsibility of the co-permittees to "prevent" discharges. In effect, it appears that the co-permittees are being held accountable to a higher level of compliance or standard than normally allowed by the Clean Water Act. We would like clarification of the issue of prevention, and deletion of provisions mandating higher emission controls than that allowed by law. Furthermore, "potentially contributing to discharges" is an open-ended provision that increases the risk to permittees for liability (e.g., we have to assure that all potential contributions were addressed), and level of effort, in that we will need to coordinate a vast data base of information regarding 303(d) listed constituents at any commercial and industrial property and their usage of BMPs. This program falls rightly under EPA and the Regional Board, not the permittees.

Third, a legal issue related to this is the "safe harbor" provision. In effect, co-permittees cannot be held liable if they are implementing the permit in accordance with its terms and conditions. However, by eliminating our safe harbor provision which is in the existing permit, permittees are liable for any exceedances even though a best effort was accomplished by the permittees. In any permit, there are always unknowns, especially with regard to compliance. Making the new permit hard and fast to difficult-to-attain standards rather than intent and implementation creates great risk for the permittees. We would like the reinsertion of the safe harbor provision.

Development construction has new requirements such as sizing the need for BMPs to all sites even those less than one acre. Plus, the permittees would need to file NOIs for all grading permits done to one acre in extent. We object to this, and desire the provisions to be deleted or modified to their existing context.

Finally, the focus on individual co-permittee activities and preventive actions may act to discourage regional and sub regional solutions. For instance, our jurisdiction may discharge storm water leading to the Whittier Narrows. There are storm water management devices at that location and spreading grounds that control any further inadvertent discharges, effectively sealing them away from the Ocean. However, as the permit is constituted, such reliance upon non-preventative measures may be unacceptable to the Regional Board.

Please review the document for our concerns as well as suggestions. If you so desire, please give us a call at (909) 396-5671 to discuss this further.

Sincerely,

David, G. Liu, PE
Director of Public Works

cc: Linda C. Lowry, City Manager
James DeStefano, Deputy City Manager
Mike Jenkins, City Attorney
J. Michael Huls, Environmental Services Coordinator

CITY OF DIAMOND BAR
PUBLIC WORKS
21825 EAST COPLEY DRIVE
DIAMOND BAR CA 91765-4177

FAX COVER SHEET

DATE: May 15, 2001 TIME: 5:23 PM NUMBER OF PAGES: 3 INCLUDING THIS PAGE

TO: Name: Dr. Xavier Swamikannu, Chief TELE: (213) 576-6600

Agency: LA/Long Beach Storm Water Unit
Regional Water Quality Control Board

FAX NO.: (213) 576-6640

FROM: Name: David G. Liu, Director of Public Works

COMMUNITY & DEVELOPMENT SERVICES

Phone: (909) 396-5671 FAX: (909) 396-7486

COMMENTS: attached is the City's response to the Dr... NPDES Permit

CITY OF Glendale CALIFORNIA

633 E. Broadway, Room 205, Glendale, CA 91206-4388 • (818) 548-3945
FAX (818) 242-7087

Public Works
Division
ENGINEERING
SECTION

May 16, 2001

2001 MAY 17 P 2:02

Xavier Swamikannu, D.Env
Chief, LA/Long Beach Storm Water Unit
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

COMMENTS TO THE APRIL 13, 2001 DRAFT OF THE LOS ANGELES MUNICIPAL STORM WATER NPDES PERMIT

Dear Mr. Swamikannu:

We are pleased to provide you with our comments to the April 13, 2001, draft of the Los Angeles County Municipal Storm Water NPDES Permit.

If you have any questions, please call me or Carlos Santos at (818) 548-3945.

Sincerely,

Jake Amar
Senior Environmental Engineer

cc: Kerry L. Morford, Director of Public Works
Steve Zurn, Assistant Director of Public Works
Lou Le Blanc, P.E., City Engineer
Alice I. Stoner, Assistant City Engineer

Comments by the Environmental Group, Public Works Division, City of Glendale to the April 13, 2001, Draft Waste Discharge Requirements (WDRs) for the Municipal Stormwater and Urban Runoff Discharges within the County of Los Angeles

1. Pages 1 through 11 – **Findings**

It is our opinion that an NPDES/WDR permit should be a direct-to-the-point permit document that is concise and can be read conveniently. The 51 Findings in the draft WDR/NPDES permit should be placed in the Fact Sheet of the permit. The permit should start only with the Findings 1 and 2 before its "It is hereby ordered" clause then proceed with the Part 1 Discharge Prohibitions.

Page 4 and 5, Permit Background

The permit background should be revised to meet the requirements of 40 CFR 122.26(d)1(iii)

2. Page 12 – Part 1 - **Discharge Prohibitions**

We feel that the Fact Sheet did not adequately discuss the provisions of Part 1 Discharge Prohibitions. We ask that the following be discussed in the Fact Sheet as this affects how Permittee understand the provisions to effectively prohibit non-storm water discharges into the MS4:

The individual NPDES permit(s) and its stormwater provisions:

a. The type of general permit for non-storm water discharges that are available in Los Angeles Region; and
b. The anti-degradation policy and its relation to conditionally exempted discharges.

3. Page 13 – Part 2 - **Receiving Water Limitations**

Again, the Fact Sheet should contain discussion of applicable narrative water quality standards and matrices of numerical limitations that are applicable to the receiving water specially Los Angeles River which is an effluent dominated receiving water.

We agree with comment of the City of Alhambra that the Board recognizes that certain pollutants present in storm water and/or urban runoff may be derived from extraneous sources over which Permittees have no or limited authority or jurisdiction. It is simply inconsistent and unreasonable for the Board, having recognized in paragraph 3 of the Findings that there are pollutants in stormwater and urban runoff over which the Permittees have no or limited jurisdiction, to nevertheless impose an absolute prohibition in paragraph 1 of Part 2 over such discharges. The Board should modify paragraph 1 of Part 2 to limit the requirement to those pollutants as to which the Permittee has jurisdiction.

We further agree that the phrase "maximum extent practicable" or MEP, is the federal standard under which it is determined whether the removal of pollutants from the MS4 is sufficient. The use of the term "practicable" has been interpreted by the Ninth Circuit to provide flexibility as to how clean is clean enough; the water in the MS4 need not strictly comply with receiving water standards nor be clean enough to drink, reflecting the need to balance water quality goals with land use restrictions.

Section 13241 of the California Water Code requires a similar balancing when regional boards issue permits, including permits for MS4s. Among the factors regional boards must consider are:

a. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.

b. Economic considerations.

4. Page 14, Part 3 Section A.1 – **Storm Water Quality Management Plan Implementation, Monitoring and Reporting**

The third sentence on this paragraph, the words "However" and "on behalf of Permittees" should be deleted. A new fourth sentence should be added: "Any permittee has the right to discuss any matter with the Regional Board." This change is essential. Neither the EAC nor the Principal Permittee has any authority under either the Clean Water Act or California law to act on behalf of, and in place of, any City which is a permittee. Any attempt to preclude a Permittee from direct discussions with the Regional Board is not only not authorized, it would deny the Permittee due process.

5. Page 24, Part 2, Section 2(a) – **Program for Business, Public Information and Participation Program**

It may not be possible to contact corporate heads however, store managers or branch managers may be more accessible.

6. Page 24, Part 2, Section 2(a)(1)

Contacts should first be done by mail indicating an on-site visit is possible. It is unlikely we will be able to visit directly with management otherwise.

7. Page 24, Part 2, Section 2(a)(2)

We will meet with management to explain stormwater regulations as well as discuss BMPs.

8. Page 25, Part 4, Section B - **Programs for Industrial/Commercial Inspections**

We want to clarify that the inspection is for enforcement of discharge prohibitions and education on BMPs.

The general comment is that the Sections 4.B and 4.C are repetitive and would read more smoothly if consolidated.

9. Page 25, Part 4, Section B, Bullets 1, 4,and 6

BMP Implementation and site plan development are requirements under state law, and therefore it is the Regional Water Quality Control Board's (Regional Board) responsibility to enforce. We currently are not assenting to take over enforcement of these requirements on behalf of the Regional Board.

10. Pg. 26, Part 4, Section B.1

We will enforce discharge prohibitions but are not currently willing to enforce state required BMPs on behalf of the Regional Board.

11. Page 26, Part 4, Section B.2

We will update an inventory of all applicable industrial/commercial sites under our jurisdiction. However, federal and state facilities should not be included.

12. Page 27 & 28, Part 4, Sections B.4(a) and B.4(b)

We will survey BMPs and encourage and record their implementation. However, it is the Regional Board's responsibility to enforce implementation.

13. Page 27-28, Part 4, Section B.5 Chart

We are not certain which SIC codes are encompassed by "Other Commercial".
Also, a provision should be placed for all categories explaining that no facilities will be visited by Permittees if they have NPDES permits, or are being visited by the Regional Board.

14. Page 29, Part 4, Section B.6

As previously stated, we will enforce our urban runoff ordinances and their discharge prohibitions, however, enforcement of BMPs is the State's responsibility.

15. Page 29, Part 4, Section C.1 - **Programs for Development Planning**

The inconsistency of using planning priority development/redevelopment projects and all projects in Sections C.1, C.3, C.5, and C.8 causes discrepancy in the program requirement. Therefore, the definition of planning priority development/redevelopment projects needs to be defined in the permit.

16. Page 29, Part 4, Sections C.1(a) through C.1(d) and C.1.(f)

Add maximum extent practicable (MEP) wordings to items C.1(a) through C.1(d) and C.1(f) to be consistent with the wording of the Clean Water Act.

Section 402(p)(3)(B)(iii) of the CWA requires that municipal permits "shall require control to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

17. Page 29. Part 4, Section C.1 addition

We agree with the Los Angeles County's comment to add a last paragraph to this Section to be consistent with other programs' language that we will update our SQMP first.

18. Page 30, Part 4, Section C.2, first paragraph

We agree with the Los Angeles County's comment that Ventura County is in the process of developing a study to determine the effects of development on stream habitat and how to prevent downstream erosion. Their time frame to finish this study is approximately three years. Permittees and Principal Permitte need the same amount of time to develop this policy that is suitable for the Los Angeles River watersheds and will benefit the environment of the L.A. County.

19. Page 30, Part 4, Section C.2(a) through C.2.(e)

It would be more appropriate for the Principal Permittee, the Los Angeles County to identify and provide the list of natural drainage systems to Permittees since they are more familiar and possess all hydrological records of all the channels within the County.

20. Page 31, Part 4, Section C.4, C.5, and C.6

We recommend that Sections C.4 and C.6 be consolidated into item Section C.3 as Section C.3.d and C.3.e since they are part of the SUSMP requirements. Section C.5 appeared to be redundant.

21. Page 34, Part 4, Section C.10 first paragraph

Regional Board should allow more time to set up this funding mechanism and management framework.

22. Page 34, Part 4, Section C.11 first paragraph

The City's Planning Division in consultation or coordination with concerned Sections under the Public Works Division need time to consult together and review the required language before incorporating C.11(a) through C.12(g) into the CEQA guidelines.

23. Page 35, Part 4, Section C.14(b)

On May 11, 2001, meeting of the California Stormwater Quality Task Force, it was reported that the RFP to update the State BMP Handbooks has been awarded to CDM Consultants. It's completion is anticipated to be in 2 to 3 years.

The Handbook will be one of our most up-to-date references in developing this requirement of a technical manual. Furthermore, we need more time and resources in researching to put a good manual together that will benefit the environment of the L.A. County watersheds.

24. Page 36, Part 4, Section D.1(a) and D.1(b) – **Programs for Development Construction**

We agree with the County that to make this Section consistent with the objective of the program to reduce pollutants in runoff from construction activities, Sections D.1(a) and D.1(b) are individual requirements under the program that need to be placed at the end of Section D as Sections D.5 and D.6.

25. Page 37, Part 4, Section D.2(g)

We have an ordinance on erosion control for construction projects that are active during wet season, but we can not post any limitation on grading schedules during the wet season.

26. Page 38, Part 4, Section D.3

It is the Regional Board's responsibilities to verify and enforce the provisions of the General Construction Permit. Cities should not legally assume the Regional Board's statutory responsibilities of enforcing any non-compliance of state SWPPPs.

27. Page 44, Part 4, Section E.5(b) - **Public Agency Activities**
Priority catch basins will be cleaned when they are found to be 40% full. The original wording would have given an uncertain definition to "priority catch basins" resulting in a constantly changing list and inefficient inspection program.

28. Page 44, Section E.5(f)

Principal Permittee should develop and provide Permittees with countywide and city-by-city drainage area GIS maps to used by cities.

29. Page 45, Section F - Program to Eliminate Illicit Connections and Discharges

In as much as the Principal Permitte has already implemented the usage of GIS, to a certain extent, to track illicit connections and illicit discharges (ICID) within their jurisdiction, there should be a provision requiring the Principal Permittee to take the lead responsibility developing a GIS or ICID for which the cost, including training cost, will be shared by the Permittees.

30. Page 67, Part 4, Section I.F - **Program Reporting Requirements, Programs for Illicit Discharge and Illegal Connection Control**

Throughout the permit this is referred to as the Illicit Connections and Illicit Discharge program. Replace Illegal Discharge with Illicit Discharge and reorder the elements to IC/ID (instead of ID/IC).

31. Page 67, Part 4, Section F.6

For clarification purposes only. We will report on confirmed illicit connections as opposed to suspected illicit connections.

32. Page 68, Part 4, Section F.11

We are unclear of the purpose of this summary. For summaries, we should separate Illicit Connections from Illicit Discharges. Therefore, we propose to add Section F.12.

Also, a summary can not contain dates. Each incident will have its own initial date of inspection, follow up, etc. If we are to include these dates, you will not end up not with a summary but with the entire database itself. Dates are already addressed in items 4, 7, and 9.
Summaries could be, for examples 800 incidents, 400 involved oil spills, 200 involved paint, etc. This summary needs different comparison items than an illicit discharge summary. We may be able to identify, out of so many illicit connections, how many were found in residential land use, commercial, industrial, etc. We can also summarize how the illicit connections were resolved (permitted vs. physical removal).

"Our Youth - Our Future"

CITY OF
HAWAIIAN GARDENS

2001 MAY 18 P 2:42

May 16, 2001

Mr. Dennis Dickerson
Executive Director
Regional Water Quality Control
Board – Los Angeles
320 W. Fourth Street, Suite 200
Los Angeles, CA 90013-1105

Subject: Review Comments on Draft Los Angeles County Storm Water and Urban Runoff Permit

Dear Mr. Dickerson:

Thank you for the opportunity to comment on the April 13, 2001, Draft Municipal Storm Water Permit. This permit will have a significant impact on the daily lives of the Residents and Businesses of Los Angeles County. A large percentage of the economy of Los Angeles County is tied to tourism at the beaches along the Coast and at the inland lakes and streams. It is in everyone's best interest to protect these resources.

The Regional Board must recognize the limited resources available at the Municipal level to support these programs. The Clean Water Act (CWA) establishes a Maximum Extent Practical (MEP) standard for Storm Water Permits. This permit, in several areas, attempts to apply numeric standards to Municipal Programs. The application of numeric standards will make compliance with the permit impossible for the municipalities and subject them to numerous citizen lawsuits.

While we recognize the importance of the CWA and the intent of this draft permit we must also address the Cities ability to comply with the requirements without exposure to unnecessary liability. The following comments reflect the Cities desire to comply with the CWA and the Regional Water Quality Control Board's (Board) permit. Where suggestions are made they are intended to provide the Board with alternative wording that we believe will comply with the MEP intent of the CWA. The Board will receive many comments from Lawyers and others familiar with the statutory requirements of the CWA. My comments will focus on the affect of the draft permit on the Cities of Los Angeles County.

21815 PIONEER BOULEVARD, HAWAIIAN GARDENS, CA 90716-1237 TEL: (562) 420-2641 FAX: (562) 496-3708

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Sincerely,

CITY OF HAWAIIAN GARDENS

Elroy L. Kiepke
Deputy City Engineer

Copy: City Manager
City Council
City Attorney

EK:tb3
11855\3005\L03
06-130

TRANSMITTAL

To: Regional Board Date: 5/16/01

Project No.:

Telephone No.:

Attn: Xavier Swamikannu Fax No.: 213-576-6717

Delivery: ☐ U.S. Mail ☐ Express Mail ☐ Messenger ☐ Fax - # of Pages

Item(s) NPDES Permit Comments

WILLDAN

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Telephone: (562) 908-6200
Fax: (562) 695-2120

Remarks:

Status: ☐ Checking ☐ Filing ☐ Approval ☐ Information ☐ Signature
☐ Other

Copies To:

Very truly yours,

WILLDAN

Completed By: Date/Time:

City of
IRWINDALE

2001 MAY 18 P 2:47

May 17, 2001

Mr. Dennis Dickerson, Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street
Los Angeles, CA 90013

Dear Mr. Dickerson:

RE: **COMMENTS OF THE DRAFT FOR THE NPDES PERMIT**

Submitted herewith for your consideration are comments prepared by the City of Irwindale in response to the draft of Los Angeles County Municipal NPDES permit dated April 13, 2001.

It should be noted that the draft permit is a substantial improvement over the current permit. It is less problematic in several key areas. There is, however, room for additional improvement. The written comments prepared by the City are intended to accomplish this by identifying areas of concern including:

1. Program requirements that appear to be unnecessary labor intensive and costly.

2. New provisions that would make permit compliance unjustifiably more stringent while increasing permittee exposure to administrative enforcement actions and third party litigation.

3. Permit language that seems unclear and contradictory in a few places.

It is also suggested that regional board staff consider a different approach for presenting, evaluating, and responding to comments in regarding municipal NPDES issues. In the past, permittee comments that were contrary to regional board staff views were usually rejected without compelling reason. Often ignored were the permittees legitimate concerns for the cost and effectiveness of proposed requirements. This has resulted in the adoption of unpopular and very controversial permit requirements. Permittees were thus faced with the narrow options of either accepting unreasonable requirements or challenging them administratively and legally.

5050 North Irwindale Ave. Irwindale, CA 91706 (626) 430-2244 Facsimile: (626) 856-0471

In the interest of avoiding a similar fate with next municipal NPDES permit, the following is proposed:

1. Regional Board staff should make a conscientious effort to discuss and resolve concerns raised by permittees rather than just issuing a written rejection with a brief explanation as to why. Instead, a forum is recommended to promote dialog aimed towards achieving mutual agreement. Although workshops are fine for communicating requirements and identifying general issues, they are not effective in identifying specific areas of concern or resolving disagreement. Smaller work groups are needed because they can provide better attention to issues. A work group could be comprised of permittee representatives and regional staff for each program area (e.g., development planning, development construction, illicit discharge and connection detection and elimination, etc). The work groups should concentrate on working-out essential compliance concerns. Once this is done, developing language-related details would be relatively simple. Also, an objective third party should be involved to facilitate discussion and resolve disagreement.

2. Criteria for determining the reasonability of new permit requirements or existing ones should be developed. Such criteria should include objective readings of (a) 40 CFR 122.26 (storm water regulations under the Clean Water Act); (b) Phase II storm water rules, which are scheduled to take effect in 2003; and (c) Porter-Cologne Act (state water code) to justify requirements not specified in the Clean Water Act, in terms of beneficial use protection, using scientific data rather than subject judgment.

3. A general workshop on Phase II storm water rules promulgated by the USEPA and scheduled for implementation in 2003, should be held to educate regional board staff, permittees, and other interested parties on these new municipal NPDES permit requirements. To that end, regional board staff is encouraged to join with permittees in inviting a representative from USEPA Region 9 conduct the workshop.

4. Delay adoption of the new permit until Phase II rules have been fully identified, evaluated, and incorporated into the next permit.

In closing, the City appreciates the time and effort that regional board staff has invested in preparing the draft permit and looks forward to participating with it in developing a new permit that will truly in improving water quality in the most cost effective manner possible. In the meantime, should you have any questions, please call the undersigned at (626) 430-2212.

Sincerely,

Rod Posada, P.E.
Public Works Director/City Engineer

RP:vs

cc: Steve Blancarte, City Manager
Ray Tahir, TECS Environmental

CITY OF IRWINDALE

5050 NORTH IRWINDALE AVENUE
IRWINDALE, CALIFORNIA 91706

626 / 430-2211 FACSIMILE: 626 / 962-2013

FACSIMILE COVER SHEET

DATE: 5-17-01 TIME: _____

TO: California Regional Water Quality
COMPANY Control Board

Mr. Dennis [illegible]
ATTENTION

FAX NO. (213) 576-6[illegible]

FROM: Rod Posada

NUMBER OF PAGES, INCLUDING COVER SHEET 3

DOCUMENT DESCRIPTION:

COMMENTS:

IF PORTIONS OF THIS TRANSMISSION ARE ILLEGIBLE OR MISSING,
PLEASE CONTACT VIOLET STOCKBRIDGE AT (626) 430-2211
IMMEDIATELY.

R0002258

City of La Cañada Flintridge
Public Works Department
(818) 790-8882
(818) 790-8897 fax

Fax

To: Xavier Swamikannu From: Elroy Kiepke

Fax: 213-576-6717 Pages: 7

Phone: Date:

Re: CC:

Urgent ☒ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Comments: Original to follow by Mail

R0002259

La Cañada Flintridge

[illegible]
Mayor Pro Tem
David A. Spence

City Council
Stephen A. Del Guercio
Jerry G. Martin
Deborah K. Orlik

May 16, 2001

Mr. Dennis Dickerson
Executive Director
Regional Water Quality Control
Board – Los Angeles
320 W. Fourth Street, Suite 200
Los Angeles, CA 90013-1105

Review Comments on Draft Los Angeles County Storm Water and Urban Runoff Permit

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1327 Foothill Boulevard • La Cañada Flintridge • California 91011-2137 • (818) 790-8880 • FAX (818) 790-7536

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Sincerely

CITY OF LA CANADA FLINTRIDGE

Elroy L. Kiepke
City Engineer

CC City Manager
City Council
City Attorney

May 14, 2001

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street
Los Angeles, California 90013

Subject: Comments on first draft of municipal NPDES permit dated April 13, 2001

Dear Mr. Dickerson:

The City of Lakewood opposes many of the terms proposed in the draft permit issued by your office on April 13, 2001. These concerns have been presented to you and your staff through the Coalition for Practical Regulation (CPR), both at the April 24th workshop and in writing, and by the Executive Advisory Committee and the Los Angeles County Department of Public Works.

The City of Lakewood agrees with the issues raised by CPR, the EAC and LACDPW. Lakewood wants to commend your staff for taking the time to consider our concerns and believes that with hard work on both sides, a reasonable permit can be adopted. Although the draft permit is a substantial improvement over the current adopted permit, the issues raised by the above mentioned groups on Lakewood's behalf must be addressed before Lakewood will support the new permit. Lakewood is fully committed to achieving the underlying goals of both the Federal Clean Water Act and State Law with regard to cleaning up stormwater runoff. Lakewood cannot support a permit that not only goes beyond the "maximum extent practicable" or MEP standard set forth in the Federal Clean Water Act, but also eliminates the "safe harbor" language that protects cities from third-party lawsuits.

In conclusion, Lakewood does not support the current draft permit. Based on what we feel are fundamental flaws, we urge regional board staff to seriously consider all comments received and make appropriate modifications. Lakewood hopes permittees will not be forced into choosing between accepting unreasonable requirements or challenging them either administratively and/or legally. Our hope would be that a compromise could be reached with the hard work of all interested parties and the job of cleaning up stormwater can move forward.

Should regional board staff have any questions, please feel free to call Scott Pomrehn, Senior Management Analyst, at (562) 866-9771, extension 2500.

Sincerely,

Robert G. Wagner
Mayor

R0002266

Lakewood
5050 Clark Avenue, Lakewood, CA 90712 • (562) 866-9771 • Fax (562) 866-0505 • www.lakewoodcity.org • Email: service1@lakewoodcity.org

CITY OF LA MIRADA

Dedicated to Service

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May 14, 2001

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2001 MAY 16 P 3:12

Xavier Swamikannu
Chief, LA/Long Beach Storm Water Unit
Regional Water Quality Control Board, Los Angeles Region
320 W. 4th Street
Suite 200
Los Angeles, CA 90013

Dear Mr. Swamikannu:

DRAFT NPDES PERMIT

This letter is to inform you of some of the concerns that the City of La Mirada has regarding the draft NPDES Permit. To begin with, there is the issue of shifting the responsibility for industrial and construction site storm water inspections and enforcement programs from the State to the cities. This shifting of responsibilities creates a financial burden for the cities. It is our understanding that the State does not intend to provide funding for these activities. Where are the cities supposed to find the money to support this shifted responsibility? Should we raise taxes or delete other programs? Moreover, there is a great concern that the cities lack the legal authority to enter onto private property in order to enforce a State storm water permit. We would appreciate it if you could clarify this area of the law.

Another area of concern for us pertains to the exposure to third party litigation. In the current permit, cities are protected from litigation as long as they are implementing programs to the best of their ability. We feel that the language in this Permit unnecessarily exposes cities to third party litigation.

A further problem with the permit is the reintroduction of Standard Urban Storm Water Mitigation Plan (SUSMP) requirements that were already reviewed by the State Board and removed from the SUSMP. The City feels that this issue has already been discussed and resolved. We do not understand why the Regional Board has decided to add categories involving non-discretionary permits, retail

R0002267

gasoline stations and environmentally sensitive areas when the State Board has already ruled on this issue.

Finally, we would like to encourage the Regional Board to review the amendment proposed by the Coalition For Practical Regulation that details the Coalition's suggestions for a regional approach to storm water problems. It is our belief that many of these issues can be resolved in an efficient and cost-effective manner that will significantly improve storm water quality without causing a financial burden on the cities.

Sincerely,

CITY OF LA MIRADA

Steve Forster, Public Works Director
Public Works

CITY OF LOS ANGELES
CALIFORNIA

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433 SOUTH SPRING ST., SUITE 400
LOS ANGELES, CA 90013
(213) 473-7999
FAX (213) 473-7977

May 16, 2001

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013-1105

Dear Mr. Dickerson:

CITY OF LOS ANGELES REVIEW COMMENTS ON THE FIRST DRAFT OF THE 2001 LOS ANGELES COUNTY MUNICIPAL STORM WATER NPDES PERMIT

Thank you for the opportunity to comment on the first draft of the 2001 Los Angeles County Municipal Storm Water National Pollutant Discharge Elimination System (NPDES) Permit issued by the Regional Water Quality Control Board (Regional Board) on April 13, 2001. The City of Los Angeles (City) appreciates the Regional Board working with all stakeholders to develop an effective municipal stormwater program and to resolve issues prior to releasing the final Permit.

At this time, the City is transmitting comments that address technical issues only. We are concurrently preparing additional comments that address issues that are broader in scope and need to be reviewed with respect to City policy. Any official position of the City of Los Angeles with respect to legislation, rules, regulations or policies proposed to or pending before a local, state, or federal governmental body or agency must first be adopted in the form of a Resolution by the City Council with the concurrence of the Mayor. We anticipate that this resolution process will be completed within the next two to four weeks and the remaining comments will then be forwarded to the Regional Board.

The City appreciates that the Regional Board will give due consideration to incorporating the City's comments into the final draft Permit.

R0002269

If you have any questions, please contact me at (213) 473-7999 or Gary Lee Moore, of my staff, at (213) 847-6346.

Sincerely,

James F. Langley for

Judith A. Wilson, Director
Bureau of Sanitation

JAW/GLM/MFS/SHN/AAS:ema
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Enclosure

cc: James F. Langley, Assistant Director, Bureau of Sanitation
Gary Lee Moore, Stormwater Program Manager

CITY OF LOS ANGELES: BUREAU OF SANITATION, STORMWATER MANAGEMENT PROGRAM
Comments on the First Draft of the 2001 NPDES Municipal Stormwater Permit

Location	Passage	Comments/Recommendations
Page 4,Findings Item 6	"These environmentally sensitive area include . . . Significant Natural Areas, and impaired water bodies listed under Clean Water Act Section 303(d)."	Recommend modifying as follows: "These environmentally sensitive area include . . . Significant Natural Areas~~, and impaired water bodies listed under Clean Water Act Section 303(d)~~." Impaired water bodies are not necessarily synonymous with environmentally sensitive areas. The City believes that there are separate regulatory provisions to address and deal with impaired water bodies such as the TMDL process, which takes into consideration point and non-point source pollution for these waters.
Page 4, Findings Item 7	"The increased volume, increased velocity, and..."	Recommend adding to the end of this sentence: "**in water bodies susceptible to these effects**".
Page 4, Findings Item 7	"Significant declines in the biological integrity and physical habitat of streams and other receiving waters have been found to occur with as little as 10 percent conversion from natural to impervious surfaces."	Recommend rewording this text as follows because 10% may not be the standard: "Studies have demonstrated that increasing impervious cover can lead to declines in habitat quality and associated biodiversity."
Page 5, Findings Item 11	"Studies indicate that facilities...fueling (automotive...)..."	Delete typographical error in parenthesis (...service facilities**0**)
Page 8, Findings Item 25	"...These criteria apply to discharges...."	Recommend the sentence be changed: "These apply as ambient criteria for inland surface waters". The current language inaccurately describes the legal requirements. The CTR criteria apply as ambient criteria for surface waters, the criteria do not apply directly to discharges as stated here. Also, the State Implementation Policy (SIP) specifically states in footnote 1 on page 1 that "This Policy does not apply to regulation of storm water discharges."
Page 9, Findings Item 37	"California Water Code (CWC) Section 13263(a) requires that...."	Water Code Section 13263(a), in addition to the requirements listed, requires the Regional Board when setting waste discharge requirements to take into consideration "the provisions of Section 13241 including economic considerations." The Los Angeles Superior Court in the permit appeals for the Los Angeles-Glendale, Tillman, and Burbank Water Reclamation Plants confirmed this requirement in the final Statement of Decision issued on April 4, 2001. This decision is binding on the Regional Board. "...other waste discharges; ~~and~~ the need to prevent nuisance~~.~~ ,**and the provisions of Section A 132 and 1.**"
Page 10, Findings Item 38	"California Water Code (CWC) Section 13370 et seq. Requires...".	Recommend changing "comply" to "**be consistent**...". California operates an in-lieu permitting program, waste discharge requirements must merely "be consistent" with CWA requirements.
Page 10, Findings Item 39	The Regional Board is the...."	Recommend replacement of word "or" with "**for**" in the first sentence.
Page 10, Findings Item 43	"To meet this objective, this Order requires implementation of BMPs intended to reduce pollutants in storm water and urban runoff such that ultimately their discharge will neither cause violations of water quality objectives nor create conditions of nuisance in receiving waters."	Recommend modifying as follows: "To meet this objective, this Order requires implementation of BMPs intended to reduce pollutants in storm water and urban runoff **to the Maximum Extent Practicable (MEP)** such that ultimately their discharge will neither cause violations of water quality objectives nor create conditions of nuisance in receiving waters."

CITY OF LOS ANGELES: BUREAU OF SANITATION, STORMWATER MANAGEMENT PROGRAM
Comments on the First Draft of the 2001 NPDES Municipal Stormwater Permit

Location	Passage	Comments/Recommendations
Page 11, Findings	Add a new finding (presumably between Items #45-47).	Recommend reference to non-chapter 3 CEQA requirements for the adoption of waste discharge requirements. Chapter 1 of CEQA requires the Regional Board explore alternatives and mitigation measures that might cause less impact on the environment than the action/Order proposed. Recommend modyifying as follows: "The action to adopt a NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), in accordance with Section 13389 of the California Water Code."
Page 12, Part 1	"Each Permittee shall effectively prohibit non-storm water discharges into the MS4 and watercourses, except where such discharges are: 1. covered by a separate individual or general NPDES permit for . . ."	Recommend modifying as follows: " ...covered by a separate individual or general NPDES permit, **or granted an exemption by the Regional Board, the Executive Officer, or the State Water Resources Control Board,** for . . . " This modification would maintain the intent of the current Permit and include sources previously granted an exemption from the Regional Board or State Water Resources Control Board.
Page 12, Part 1.2	".... and meet all the conditions specified by the Regional Board Executive Officer (and which must be included in the revised SQMP)..."	We recommend reinstating Part 2, Section II.C.4 (p. 33-34) of Order 96-054, which describes the procedures to obtain additional categories of exemptions.
Page 12, Part 1.2.a	"a) Categories of natural flow: . . ."	Recommend modifying as follows: "a) Categories of ~~natural~~ flow: (1) Natural springs and ~~rising~~ **natural** ground water; . . . Uncontaminated **natural** ground water . . ."
Page 12, Part 1.2.c	Add new reference items.	9) Washing of fire/emergency vehicles; and 10) Potable water sources with appropriate BMPs applied.
Page 12, Part 1.2.c.1 & 2	Discharge Prohibitions: "Reclaimed and potable landscape irrigation runoff;" "Water line flushing of potable water distribution systems;"	Recommend modifying as follows: "Reclaimed and ~~potable~~ landscape irrigation runoff;" "Water line flushing ~~of potable water distribution systems~~;" Line flushing within the system is necessary to protect the health and safety of the public. In some cases, when flushing occurs within the distribution system, chlorination is increased and then the water is dechlorinated. However, during the flush, the water may not be to potable water standards.
Page 13, Part 1.2.c.6	"Dewatering of lakes and decorative fountains;"	Recommend modifying as follows: "Dewatering of lakes, **reservoirs, potable water tanks**, and decorative fountains **with appropriate BMPs applied**;"
Page 13, Part 1.2 Last paragraph	"The Regional Board Executive Officer may add or remove categories of non-stormwater discharges above. Furthermore, in the event that any of the above categories of non-	Recommended modifying as follows: " . . . in the event that any of the above categories of non-stormwater discharges are determined to be a **significant** source of pollutants and **cause an adverse significant impact** . . . the discharge will no

Location	Passage	Comments/Recommendations
	stormwater discharges are determined . . . in consideration of anti-degradation policies."	longer be exempt . . ."
Page 13, Part 2	"Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited."	An intro sentence needs to be added that says before paragraph 1, "Except in accordance with this Order:" This is an extremely important change to protect from citizen enforcement over an alleged violation of the Receiving Water Limitations.
Page 13, Part 2.1 and 2.2	"1. Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited." "2. Discharges from the MS4 of storm water, or non-stormwater, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance."	The Order includes the "cause or contribute to" language taken from 40 CFR §122.44(d), which is arguably not applicable to stormwater discharges as stormwater is regulated under §122.44(k), which allows BMPs where effluent limitations are not feasible. The language should at least be changed to read: "1. Discharges from the MS4 that **are demonstrated to** cause ~~or contribute to~~ the violation of **applicable** water quality standards or water quality objectives are prohibited." "2. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible shall not cause ~~or contribute to~~ a condition of nuisance."
Page 13, Part 3	"The Permittee shall comply with the permit through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the Storm Water Quality Management Plan (SQMP) and its components and other requirements of this permit including any modifications. If exceedances of water quality objectives.... by complying with the following procedures."	To protect from enforcement jeopardy, the language must read: "The Permittee shall **be deemed to be in compliance** ~~comply~~ with the requirements of this permit through timely implementation of control measures and other actions to **reduce to the Maximum Extent Practicable** pollutants.... the Permittee shall ~~assure~~ **attempt to come into** compliance with discharge prohibitions and receiving water limitations by complying with the following procedure:" The current wording is not protective against potential enforcement actions and is not consistent with the SWRCB Policy set forth in Order 99-05.
Page 13, Part 3.a	" a) Upon a determination by either the Permittee or the Regional Board that discharges are causing or contributing to an exceedance...The Regional Board may require modifications to the Report."	Remove the "or contributing to" language.
Page 17, Part 3.F.2	"The Principal Permittee shall modify the SQMP to comply with waste load allocations developed and approved pursuant to the process for the designation and implementation of Total Maximum Daily Loads (TMDLs) for impaired water bodies."	Include discussion of the process for that modification and the timeline for compliance, which must include a public review.
Page 18, Part 3.G.1.b and g	Prohibit the discharge of "untreated" runoff.	Modify by adding the word "untreated" for each paragraph as follows: "b) Prohibit the discharge of **untreated** wash waters to the MS4 from the cleaning of gas stations...or other automotive facilities." "c) Prohibit the discharge of **untreated** runoff to the MS4 from mobile auto washing, steam cleaning..." "e) Prohibit the discharge of **untreated** runoff to the MS4 from storage areas of materials containing grease, oil..." "g) Prohibit the discharge of **untreated** runoff from the washing of toxic materials from paved or unpaved areas to the MS4..."

Location	Passage	Comments/Recommendations
		"h) Prohibit washing impervious surfaces in industrial/commercial areas that result in a discharge of **untreated** runoff to..." In the existing permit, paragraphs b & g prohibit the discharge of "untreated" runoff.
Page 18, Part 3.G.1.e	"Prohibit the discharge of runoff to the MS4 from storage areas of materials containing..."	Recommend modify as follows: "Prohibit the discharge of runoff to the MS4 from storage areas of materials containing grease, . . . and uncovered receptacles containing hazardous materials **unless such containers are new and unopened**."
Page 18, Part 3.G.1.j	"Prohibit spills, dumping, or disposal of materials into the MS4, other than storm water, such as:"	Recommend modifying as follows: "Prohibit ~~spills,~~ dumping~~,~~ or disposal of materials into the MS4, . . ." Spills are not deliberate, intentional acts whereas dumping and disposal are.
Page 18, Part 3.G.1	Add a new reference item after j).	"Control spills to the maximum extent practicable."
Page 18, Part 3.G.1.j.4	"Fuel and chemical wastes, animal wastes, garbage, batteries, and other materials . . ."	Recommend modifying as follows: "Fuel and chemical wastes, animal wastes, garbage, **and** batteries~~, and other materials~~ that have potential adverse . . . " "other materials" is overly broad, too open-ended, and redundant with the phrase "such as" that prefaces this subsection.
Page 19, Part 3.G.1.k-p	Paragraphs (k) through (p) are not related to (a) through (j) in that they do not reflect a category of prohibitions or controls.	Recommend adding another appropriate topic heading for items (k) through (p) and renumbering as appropriate.
Page 19, Part 3.G.1.p	"Adopt and implement an agency-specific storm water and urban runoff ordinance or amend an existing one, if necessary, to be able to enforce all requirements of the permit, effective immediately upon the adoption of this Order."	The City is unable to adopt a new or amend a current ordinance immediately upon the adoption of this Order. The City recommends modifying as follows: "Adopt and implement an agency-specific storm water and urban runoff ordinance or amend an existing one, if necessary, to be able to enforce all requirements of the permit, effective ~~immediately upon~~ **9 months after** the adoption of this Order."
Page 19, Part 3.H	"...Permittees to address their programs specifically for that particular situation and change them accordingly to address the problem.)"	Recommend modifying as follows: "...for that particular situation and change them accordingly to address the problem **if continued implementation of the SQMP is not expected to address the situation**)."
Page 20, Part 3.J	"The Principal Permittee shall submit a Storm Water Monitoring Report on August 15, 2002 and annually on August 15 thereafter..."	Although not specifically specified, it appears from this passage that the reporting period for monitoring requirements is based on the fiscal year (July 1 through June 30 of each year). The Storm Water Monitoring Report for this period is then due on August 15, only about six weeks later. This time period is too short to perform thorough assessments and reporting of the vast array of data that will be collected during the year. This report should be due six months after the conclusion of the year's sampling.
Page 24. Part 4.A.2. a and 1	Corporate Outreach	The phrase "corporate heads" is too limiting, especially for large corporations whose officers are located out of the areas. Therefore, change "corporate heads" to "**corporate or management company**."

Location	Passage	Comments/Recommendations
Page 24, Part 4.A.2.b	"Permittees shall develop and implement a Business Assistance Program . . . "	Change to "Permittees shall implement a Business Assistance Program..." Permittees may be able to establish cooperative efforts with existing business assistance programs to accomplish this requirement without undue burden of developing a brand new program. It may also be more cost effective for them to partner with other organizations.
Page 24, Part 4.A.2.b.1	"On-site technical assistance or consultation via telephone to identify and implement pollution prevention methods and best management practices"	Recommend the insertion of the word "stormwater" in front of "pollution prevention".
Page 25, Part 4.A.2.b.4	"Permittees shall conduct follow-up independent of the Business Assistance Program, based on the priorities of the Industrial/Commercial Inspection Program"	Move "Permittees shall conduct follow-up independent of the Business Assistance Program, based on the priorities of the Industrial/Commercial Inspection Program" to P. 28 Part B 5. C). The placement of this statement implies that some type of follow-up is required by the Business Assistance Program. After "The Business Assistance Program shall be a confidential and non-enforcement program", add the following: "The Business Assistance Program shall operate independently of the Industrial/Commercial Inspection Program".
Page 27, Part 4.B.3.d	"Other Commercial facilities (contributing or potentially contributing to the impairments of receiving waters)"	We recommend the "other commercial" sites to be defined as follows: Those facilities having activities corresponding to SIC codes 33XX, 34XX, 35XX, 4612, 4613, 4619, 4731, 4783, 4789, 4925, 4932, 5031, 5039, 5051, 5082, 5083, 5084, 5085, 5172, 5211, 5989, 7221, 7212, 7213, 7217, 7218, 7219, 7261, 7622, 7623, 7692, 7693, and 9629.
Page 28, Part 4.B.5.b	"Automotive Service Facilities"	We recommend defining "Automotive Service Facilities" as SIC codes 75XX, and 5014.
Page 28, Part 4.B.7.a	"Each Permittee shall provide oral notification to the Regional Board of non-compliance with existing storm water regulations (within 3 days of discovery) or create an adverse impact or nuisance as it relates to the quality of the receiving waters of the State within its jurisdiction, within 24 hours of the discovery. Such oral notification shall be followed up by a written report to be submitted to the Regional Board within 5 days of the incidence of non-compliance."	Our enforcement staff deals with nuisance discharges almost on a daily basis. These flows are stopped and appropriate enforcement actions are taken. Reporting all incidents would not be practical. We recommend reporting only serious discharges of sewage or hazardous material to the RWQCB as detailed in the draft permit language. All other discharges should be reported in writing by the 10th day of each month. Replace passage with, " For discharges to the MS4 of sewage and hazardous materials that are a threat to public health and safety, and the quality of receiving waters, each permittee shall provide verbal notification to the Regional Board of non-compliance within 24 hours of discovery followed by a written report within 5 working days. All other discharges will be reported in writing to the Regional Board by the 10th day of each month.
Page 28, Part 4.B.7.b	"Permittees shall develop and submit criteria by which to evaluate events of non-compliance to determine whether they create an adverse impact or nuisance. These criteria shall be submitted in the SQMP and Annual Report for Regional Board review and subject to Regional Board Executive Officer's approval."	Recommend modifying as follows: "~~Permittees~~ **The Principal Permittee in conjunction with the co-Permittees** shall develop and submit ~~criteria~~ **procedures** ~~by which~~ to evaluate . . ."
Page 29, Part 4.C.1	Programs for Development Planning	Recommend modifying as follows: "...require all planning priority development and redevelopment projects**, to the maximum extent practicable,** to,"

Location	Passage	Comments/Recommendations
Page 29, Part 4.C.1	Programs for Development Planning	Define planning priority projects. Definition must be consistent with the Development Planning Model Program.
Page 29, Part 4.C.1.b	"Maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground;"	Recommend modifying as follows: "Maximize the percentage of permeable surfaces to allow percolation of storm water into the ground, **except in the Harbor area and in the San Fernando Valley (SFV), where prior approval by the SFV Watermaster, also known as the Upper Los Angeles River Area (ULARA) Watermaster, is required**;" The Upper Los Angeles River Area (ULARA) Watermaster is concerned with percolation of storm water into the ground in the San Fernando Valley area. The Port of Los Angeles has also expressed concerns of the feasibility in the Harbor area due to the high groundwater table.
Page 29, Part 4.C.1.d	"Minimize pollution emanating from parking lots through the use of appropriate treatment control BMPs and good house keeping practices;"	Recommend deleting this subsection. It is redundant with the SUSMP requirement.
Page 30, Part 4.C.3.a.4 and 5	"Divert roof runoff to vegetated areas before discharge"	This violates section 91.7013.9 of the building code, which requires all roof water be delivered through a non-erosive via gravity to a street or watercourse if the slope of the underlying natural ground exceeds 3%. Under Finding #7 (page 4 of the draft permit) the major concern with urban developments in hillside areas is the potential for increase volume and velocity of storm water runoff that will greatly accelerates downstream erosion and impairs stream habitat. This will be true in rural areas where there are no concrete curbs, gutters, or storm drains. Under section 91.7013.9 there will not be any downstream erosion and impairs stream habitat because all the roof drainage will be carried to the City's storm drain system via non-erosive devices. Therefore, it is recommended that item (4), "Divert roof runoff to vegetated areas before discharge" be deleted.
Page 30, Part 4.C.3.b	SUSMP	Since this permit is supposed to consider watershed solutions and that in some cases it may make more sense to develop regional solutions that could address existing as well as new development. The following change is suggested: After (7) add in the following paragraph: "Or the Permittee shall demonstrate how a watershed solution using regional controls has been developed that would lead to better water quality results than individual new and redevelopment sites meeting the SUSMP standards".
Page 30, Part 4.C.3.b	SUSMP Project Categories	Recommend changing title of item (4) to "Automotive Repair Shops" to be consistent with the definition title on Part 5 of page 46, or vice versa.
Page 31, Part 4.C.4	Numerical Design Criteria	Include "Structural BMPs" in 1st paragraph. The revised paragraph shall read as follows: "The Permittees shall require that post-construction **structural or** treatment control BMPs incorporate..."
Page 31, Part 4.C.4.b.2	"....for Los Angeles County"	Recommended change: "...for Los Angeles County, or"
Page 32, Part 4.C.6	Definition of Acre	Define acre as 43,560.

Location	Passage	Comments/Recommendations
Page 32, Part 4.C.6.a	USEPA Phase II requirements	Change sentence to read as, "One acre **or greater**..."
Page 34, Part 4.C.10	Mitigation Funding	Please explain what this entire section means. Are subsections a through c identified as potential funding sources? Define items a through c. In item (a), define conditions of impracticability. (Same as existing permit?) Granting of waivers, including waivers of impracticability, shall be the responsibility of the Regional Board. Item (b) needs clarification. "Legislative funds become available"...to who?
Page 35, Part 4.C.12	General Plan Update	Under the State of California General Plan Guidelines, each City is given 5 years to update the General Plan. This item gives each Permittee 540 days from permit adoption date. In order to effect a complete and appropriately detailed update to the General Plan, it is suggested that the time allowed should reflect the State General Plan Guidelines of 5 years. Therefore, change the deadline of 540 days to 5 years from permit adoption date.
Page 35, Part 4.C.14.	Developer Technical Guidance and Information	The City of Los Angeles has developed three technical guidance manuals, which are entitled, "REFERENCE GUIDE FOR STORMWATER BEST MANAGEMENT PRACTICES", "DEVELOPMENT BEST MANAGEMENT PRACTICES HANDBOOK, PART A – CONSTRUCTION ACTIVITIES", AND "DEVELOPMENT BEST MANAGEMENT PRACTICES HANDBOOK, PART B – PLANNING ACTIVITIES". The City's technical manuals already provide such information as identified on Page 35 Part 4C14b1-5 for development projects with the exception of the Peak Flow Control numerical criteria (referred to on Page 29 Part 4C2). The Peak Flow Control numerical criteria will be developed by the Permittees upon the adoption of the Permit as described in Page 29 Part 4C2. If the Board determines that the City's technical manuals are not sufficient to meet the requirements enumerated in Part 4C14, then for the purposes of countywide consistency, the Principal Permittee should develop the technical guidance manual. Recommend modifying as follows: "b) Principal Permittees shall develop...."
Pg. 39, Part 4.E.1	Public Agency Activities	Please revise the listing of Public Agency requirements to be consistent with the succeeding Sections and Topics.
Page 40, Part 4.E.3.a	"Each Permittee shall...from construction activity at all construction sites."	Change sentence to read: Each Permittee shall...from construction ~~activity~~ **activities** at all **public** construction sites.
Page 40, 41		There are two subsections under Part 4.E numbered "3", one on page 40 and one on page 41.
Page 41, Part 4.E.3.b.4 and 5	Public Construction Activities Management	Items 4 and 5 address City staff ensuring effectiveness of BMPs. It has always been the City's contention that staff is not responsible for ensuring BMPs are effective. Staff may be responsible for ensuring BMPs are in place and operational, but should not be liable for "effectiveness."
Page 41, Part 4.E.3.b and c	"Each Permittee shall obtain coverage...under separate permit until March 10, 2003."	Delete b) and c). Replace with "Each Permittee shall comply with Part 4.D of this Order."
Page 41, Part 4.E.3.b	Vehicle Maintenace/Material Storage... "Each Permittee shall implement BMPs to minimize pollutant discharges in storm water..."	Recommend modifying as follows: "Each Permittee shall implement BMPs to minimize pollutant discharges **to the maximum extent practicable** in storm water . . ."

CITY OF LOS ANGELES: BUREAU OF SANITATION, STORMWATER MANAGEMENT PROGRAM
Comments on the First Draft of the 2001 NPDES Municipal Stormwater Permit

Location	Passage	Comments/Recommendations
Page 42, Part 4.E.3.c	"Each Permittee shall require that all vehicle/equipment wash areas..."	Recommend modifying as follows: "...for new facilities or during redevelopment of existing ~~sites~~ **wash areas**."
Page 42, Part 4.E.3.d	"Each Permittee shall, for each municipal yard...obtain separate coverage under the State of California General Industrial Activities Storm Water Discharge Permit"	We would like to maintain the current Permit provisions (Part 2.IV.C.8 of Order 96-054), which allow municipal yards covered under Phase I of the Federal Storm Water Regulations, to seek coverage under the municipal permit.
Page 42, Part 4.E.4.g	"Each Permittee shall regularly inspect storage areas."	Revise to read: "Each Permittee shall ~~regularly~~ annually inspect storage areas."
Page 42, Part 4.E.5.b	"Classify priority catch-basins to be those that are 40 percent full"	Please clarify how the 40 percent full figure came about---is there any science behind it. This figure is very subjective to individual judgement, especially in the field.
Page 43. Part 4.E.5.a	"Inspect and clean catch basins between..."	Change to "Inspect **and if necessary** clean catch basins...."
Page 43. Part 4.E.5. Second b	"A review of current storm drain maintenance...appropriate storm water BMPs are being utilized to water quality;"	Change to ".... appropriate storm water BMPs are being utilized to **protect** water quality;"
Page 44, Part 6.c	"Each Permittee shall require that sawcutting wastes be recovered and disposed of properly and that no case shall waste be allowed to enter the storm drain."	Change paragraph to read:" Each Permittee shall require that sawcutting wastes be recovered and disposed of properly."
Page 44, Part 4.E.7	"Each Permittee shall continue to repair essential public services and infrastructure in a manner to minimize environmental damage in emergency situations such as: earthquakes, . . ."	Recommend modifying as follows: "Each Permittee shall continue to repair essential public services and infrastructure in a manner to minimize environmental damage in emergency situations such as**, but not limited to**: earthquakes, . . ."
Page 44, Part 4.F	"Permittees shall eliminate all illicit connections and illicit discharges to the storm drain, and shall document and report all such cases. To accomplish this, the Permittees shall revise their Program for Elimination of illicit Connection and Illicit Discharge...including performance measures and schedules."	Does this mean revising the Model Program?
Page 45, Part 4.F.1.a	"Implementation: Upon Executive Officer approval of the revised IC/ID Program...and available for review and approval by the Regional Board when requested."	Does this mean "Upon Executive Officer approval of the revised Model IC/ID Program" ?
Page 45, Part 4.F.1.b	General Elements – "...the Lead Permittee shall have the capability to locate all permitted discharges..."	The term "Lead Permittee" is not defined in the permit. Are we to assume this is the "Principal Permittee?"
Page 46, Part 4.F.3.a	"Respond, within 72 hours of discovery or a report of a suspected illicit discharge, with activities ..."	It is our recommendation that the response time be changed to three (3) business days instead of 72 hours.

Location	Passage	Comments/Recommendations
Page 48	"Environmentally Sensitive Areas"	"...Natural Area by the California Department of Fish and Game... or Endangered Species (RARE) beneficial use~~; or an area identified by the Permittees as environmentally sensitive for water quality purposes, based on the Regional Board Basin Plan and Clean Water Act Section 303(d) Impaired Water-bodies List for Los Angeles County~~."
Page 51	Definitions	Add new term, "Pollution Prevention" and definition, which emphasizes source reduction methods for reduction and elimination of pollutants entering stormwater. The restricted definition will more clearly define what is being required of the regulated community and what is being enforced by regulators. If undefined, the term will default to include multi-media source reduction, in process recycling, conservation of energy and natural resources.
Page 57, Item F Page 59, Item L	Proper Maintenance and Operation Bypass	These requirements seem to have been copied from an NPDES permit for a wastewater treatment plant. They are not applicable to a stormwater permit. "Facilities and systems of treatment" have not even been proven to be effective. How can it be that the non-operation or bypassing of such facilities can be deemed harmful or non-compliant? Please ensure that these sections are deleted.
Page 73, Monitoring and Reporting Program, IIC1	"The Principal Permittee shall develop and implement a tributary/source identification monitoring program."	The RWQCB should have more mass emission sites up each of the 5 major watersheds instead of just measuring concentration in various tributaries. Data from each of these proposed mass emission stations represents the contribution from the next upstream mass emission station and all the ancillary storm drain contributions. Watershed-based source control should be targeted in the proposed mass emission reaches that contribute the most pollutant of concern. If the RWQCB still wants to have these tributary stations, then flow should be added to the requirements so that the different tributaries could be compared to each other based on pollutant loads.
Page 75, Monitoring and Reporting Program, IIE2	" Reference stations shall be selected in stream reaches that are not listed as impaired on the 303(d) list and that are not representative of urban stream conditions, based on surrounding land uses and a lack of upstream point source discharges."	These reference stations will be difficult to find and are probably not comparable to the more urban downstream reaches.

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June 4, 2001

2001 JUN -4 A 11:40

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013-1105

Dear Mr. Dickerson:

REQUEST FOR MODIFICATION OF COMMENTS ON FIRST DRAFT NPDES PERMIT

We are requesting modification of two technical comments on the first draft NPDES Stormwater Permit, submitted to your office on May 16, 2001. Please replace the previously submitted comments, specifically related to Page 13, Part 2, Paragraph 1 and Page 20, Part 3, Section J with the following:

Location	Passage	Comments/Recommendations
Page 13, Part 2	"Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited."	It is recommended that the following be added, prior to the first paragraph (1): "Except in accordance with this Order:"

R0002280

Page 20, Part 3.J	"The Principal Permittee shall submit a Storm Water Monitoring Report on August 15, 2002 and annually on August 15 thereafter..."	Although not specifically stated, it appears from this passage that the reporting period for monitoring requirements is based on the fiscal year (July 1 through June 30 of each year). The Storm Water Monitoring Report for this period is then due on August 15, only about six weeks later. This time period is too short to perform thorough assessments and reporting of the vast array of data that will be collected during the year. This report should be due three months after the conclusion of the year's sampling. Recommend modifying as follows: "The Principal Permittee shall submit a Storm Water Monitoring Report on **October 1**, 2002 and annually on **October 1** thereafter..."

Should you have any questions or comments, please contact either Mr. Gary Lee Moore or Mr. Morad Sedrak, of my staff, at (213) 847-6346 and (213) 847-6353, respectively.

Sincerely,

James F. Langley for

Judith A. Wilson, Director
Bureau of Sanitation

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cc: James F. Langley, Assistant Director, BOS
Gary Lee Moore, Stormwater Program Manager, BOS

CITY OF LOS ANGELES
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June 29, 2001

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013-1105

Dear Mr. Dickerson:

CITY OF LOS ANGELES ADDITIONAL REVIEW COMMENTS ON THE FIRST DRAFT OF THE 2001 LOS ANGELES COUNTY MUNICIPAL STORM WATER NPDES PERMIT

We are transmitting the attached additional comments on the first draft of the 2001 Los Angeles County Municipal Storm Water National Pollutant Discharge Elimination System Permit. These comments deal with issues that are governed by official policies of the City of Los Angeles and are impacted by the draft Permit.

As we noted when we submitted comments on technical issues on May 16, 2001, any official position of the City of Los Angeles with respect to legislation, rules, regulations or policies proposed to or pending before a local, state, or federal governmental body or agency must first be adopted in the form of a resolution by the City Council with the concurrence of the Mayor. Attached please find the City's position on the draft Permit with supporting documentation.

Once again, the City appreciates that the Regional Board will give due consideration to incorporating the City's comments into the final Permit.

R0002282

If you have any questions, please contact me at (213) 473-7999 or Gary Lee Moore, of my staff, at (213) 847-6346.

Sincerely,

James F. Langley for

Judith A. Wilson, Director
Bureau of Sanitation

JAW/GLM/MFS/SHN/AAS:lm
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Attachments

cc: Xavier Swamikannu, Los Angeles Regional Water Quality Control Board
James F. Langley, Assistant Director, Bureau of Sanitation
Gary Lee Moore, Stormwater Program Manager

FORM GEN. 160 Rev. 6-80

CITY OF LOS ANGELES

INTER-DEPARTMENTAL CORRESPONDENCE

DATE: June 18, 2001

TO: Councilmember Mark Ridley-Thomas, Chair
Environmental Quality and Waste Management Committee

FROM: Ronald F. Deaton
Chief Legislative Analyst

William T. Fujioka, Director
Office of Administrative and Research Services

SUBJECT: POLICY ISSUES RELATED TO THE DRAFT 2001 NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) MUNICIPAL STORMWATER PERMIT

BACKGROUND: The Los Angeles Regional Water Quality Control Board (Regional Board) recently issued a draft 2001 NPDES Municipal Stormwater Permit for review and comment. The NPDES permit is reissued every five years and the existing permit expires on July 31, 2001. This permit identifies the waste discharge requirements for municipal storm water and urban runoff discharges within the County of Los Angeles and the incorporated cities (except Long Beach and Santa Clarita). The County of Los Angeles is the principal permittee and the City of Los Angeles and 82 other jurisdictions are co-permittees.

A Council Motion regarding the 2001 NPDES Municipal Stormwater Permit was introduced on May 18, 2001 (CF#01-1020). This motion directed the CLA and OARS to prepare a report for the Environmental Quality and Waste Management Committee on various policy implications of the draft 2001 NPDES permit.

The deadline for the receipt of comments was May 16, 2001. City staff prepared and submitted technical comments to the Regional Board on that date (see attached). There were, however, several substantive policy issues associated with the proposed permit. In light of the new charter, which states that any official position of the City of Los Angeles with respect to pending agency regulations must have first been adopted in the form of a Resolution by the City Council with the concurrence of the Mayor, this report has been prepared.

The Regional Board has issued a schedule that states that there will be two more draft permits; a second draft of the permit will be issued on June 29, 2001 and a final draft will be issued on September 6, 2001. The proposed adoption date by the Regional Board is scheduled for October 25, 2001.

ANALYSIS: The proposed permit contains the following major new requirements for cities:

1. **Public Agency Activities**

Proposed Permit – Stormwater runoff from urban streets is a contributing factor in the contamination of coastal waters and beaches. Pollutants, litter and debris on city streets enter the storm drain system and are channeled directly to the ocean. Street sweeping has been identified as a best management practice to reduce storm water pollution. The proposed permit contains language that would require all jurisdictions to conduct bi-weekly street sweeping. The Regional Board's fact sheet states that the change in frequency for street sweeping has been included to be consistent with the Ventura County Municipal Storm Water Discharge Permit.

Current Practice - The existing permit requires a municipality to implement a street sweeping program that sweeps the streets at least monthly, and where feasible, more frequently in areas generating significant refuse. The Bureau of Street Services sweeps approximately 40% of the City's 13,100 curb miles of paved dedicated streets weekly and the remainder once a month. In commercial areas where persistent litter is a problem, the streets are swept weekly or daily. The annual current cost for the street sweeping activities is approximately $7.5 million of which $4.9 is paid from the Stormwater Pollution Abatement Fund (SPAF). The current discretion given to municipalities allows the City of Los Angeles to provide street sweeping services more frequently in areas that generate more debris and less sweeping in areas that are less populated.

Impact on City - Staff estimates that bi-weekly street sweeping will increase the City's cost by an additional $4.6 million annually, $3.6 million in staff costs and $985,334 in expense costs. Additionally, a one-time capital cost for the purchase of additional street sweeping equipment is estimated at around $7 million. The cost to the ratepayer would be an additional charge of $4 a year for the annual costs alone, and the average residential Stormwater Pollution Abatement Charge would need to increase from $23 to $27 a year. This would increase another $7 or more if the equipment was purchased with SPAF funds. Moreover, the South Coast Air Quality Management District's fleet rules require the City to replace its street sweepers with ones that use alternative fuels when new equipment is purchased. The cost of new and upgraded facilities for natural gas sweepers has not been estimated at this time, however, it is expected to be substantial.

The proposed permit states that the increased street sweeping requirement apply until the implementation of a trash total maximum daily load (TMDL) program, which is currently under development for the Los Angeles River and Ballona Creek. Compliance with the trash TMDL will require the City to develop a plan to reduce trash in the waterways by the implementation of new structural devices to capture litter before it reaches the waterways. Although difficult to estimate, capital and operation/maintenance cost estimates are in the neighborhood of $900 million for full capture devices. The proposed permit would require the City to spend millions of dollars to implement bi-weekly street sweeping, which will be necessary only until the trash TMDL is finalized.

Recommended City Position – Delete the requirement for bi-weekly street sweeping.

2. Programs for industrial/commercial inspections

Proposed Permit - The proposed permit includes language that would require the City to move from educational visits to site inspections and require the City to inspect all industrial/commercial sites under the Regional Board's jurisdiction, in addition to the City's jurisdiction. Additionally, the proposed permit would add categories of industrial and commercial businesses within the City, almost doubling the list from 13,000 to 23,000 businesses. The required inspections would involve a thorough review of the physical structure and layout of the business, as well as a review of their common practices. It is estimated that, depending on the type of business, the new inspections would average two hours, not including expected follow-up visits, which may be necessary for a majority of the businesses.

Current Practice - The existing NPDES permit requires the City to conduct educational site visits, which are typically brief in duration. Staff activities are limited to distributing brochures and other informational handouts.

Impact on City - Staff supports moving from site visits to full inspections of industrial/commercial sites. This will allow the City to thoroughly review industrial/commercial stormwater impacts and begin enforcement actions on violators. Additionally, staff is supportive of increasing the number of industrial/commercial sites that are under the jurisdiction of the permittees. It is estimated that an additional two new inspectors would be necessary to fulfill the new NPDES requirements to inspect industrial/commercial sites under the City's jurisdiction, which would cost $175,081 per year. Additional attorney costs for anticipated legal actions, which are difficult to estimate, may also be necessary. The SPAF anticipated some additional costs associated with the proposed NPDES permit and included $530,000 in the 2001-02 budget (See Table 1).

The proposed permit, however, also assigns the responsibility for industrial/commercial inspections currently under the Regional Board's jurisdiction to the City. The Regional Board receives permit fees from between $250 and $500 from General Industrial Activities Stormwater Permits for their industrial/commercial inspections. Staff strongly opposes the requirements of the draft permit that passes these responsibilities to the City. These responsibilities clearly belong to and should remain with the Regional Board. Staff estimates that an additional four new inspectors, beyond the previously mentioned two inspectors, would be necessary to carry out this requirement, at a cost of $350,000 per year.

Recommended City Position – Support the Regional Board's responsibility for inspections of industrial/commercial sites that are under their General Industrial Activities Stormwater Permit.

3. Standard Urban Storm Water Mitigation Plans (SUSMPs)

Proposed Permit – Include administrative projects in the SUSMP project categories.

Current Practice - on January 25, 2000, the City Council adopted a policy position that endorsed, in concept, the SUSMP requirement for developments as proposed by the Regional

Board. The Regional Board's proposal included discretionary and ministerial (administratively approved) projects. Although the SUSMP requirements ultimately adopted by the State Water Resources Control Board (State Board) for the current NPDES permit apply only to discretionary projects, the Regional Board has the authority to add ministerial projects when the NPDES permit is re-issued. As a result, the draft NPDES permit expands this section to include ministerial projects.

Impact on City - The inclusion of ministerial projects in the draft NPDES permit for SUSMP project categories is estimated to require four additional staff at a cost of $432,779. The Stormwater Pollution Abatement Fund (SPAF) anticipated some additional costs associated with the proposed NPDES permit and included $530,000 in the SPAF 2001-02 budget (see Table 1).

Recommended City Position – Support the requirements for Standard Urban Storm Water Mitigation Plans (SUSMP).

4. **Implement Requirements for Peak Flow Control.**

Proposed Permit – The proposed permit requires all development that drains to soft-bottom channels, including the entire upper Los Angeles River region (the San Fernando Valley), to show that a post-development peak runoff discharge rate does not exceed the pre-development runoff discharge rate.

Current Practice – The current peak flow control requirements are implemented as part of the existing SUSMP requirements imposed through the CEQA review process. This condition is applicable to the SUSMP project categories where developments will result in increased potential for downstream erosion. It is applied to only developments that have site runoff discharge ***directly*** to soft-bottom channels.

Impact on City - Typical peak flow control measures include detention, retention, or infiltration systems. These measures, however, are limited for new developments in the San Fernando Valley, due to the Watermaster's restriction against any infiltration systems. Staff prepared a sample peak flow calculation, assuming the need for detention/retention, which resulted in a system the size of an average swimming pool for a one-acre development. If this example is accurate, the need for additional open spaces for detention, retention and infiltration systems will severely constrain development in the San Fernando Valley.

Recommended City Position – Since this requirement is not defined in detail and may have significant impact, staff recommends the Peak Flow Control requirement be deleted until consensus language is developed.

5. **Small Construction Site Requirements.**

Proposed Permit - The proposed permit states that for construction sites of less than one acre, the proposed permit would require the implementation of structural and non-structural BMPs, as well as site inspections.

Current Practice – Under the current permit, for sites less than two acres of disturbed soil, construction projects are required to implement minimum BMPs, which consist of good housekeeping practices. During routine inspections, City inspectors observe practices for compliance with minimum requirements. There are no inspections specifically conducted to look for storm water compliance.

Impact on City - In essence, this proposed requirement would make *every* project subject to storm water conditions, which would be over 30,000 projects per year in the City of Los Angeles. "Less than one acre" does not have a lower limit and goes significantly beyond the intent of the upcoming federal stormwater regulations. Many projects less than one acre do not cause an adverse impact on water quality. Those that do not cause an adverse impact are not being regulated at the state or federal level and will not be regulated in the immediate future. If a site that is less than one acre does cause an adverse impact on water quality, then current local, state and/or federal ordinances, laws and regulations give the authority for agencies to take enforcement action.

Staff estimates that an additional eight staff would be necessary to conduct this activity at a cost of approximately $809,456. This would increase the stormwater pollution abatement charge by about a dollar a year for residents.

Recommended City Position – Delete the additional requirements on the City to require structural and non-structural BMPs and site inspections on construction sites less than one acre.

6. **Larger Construction Site Requirements.**

Proposed Permit - For construction sites greater than one acre, the proposed permit would require the review and inspection of BMP implementation plans during construction and a Storm Water Pollution Prevention Plan (SWPPP) on site.

Current Practice - Currently, the City is required to inspect construction sites of two acres and above for compliance with a SWPPP. Should violations be discovered on sites between two and five acres, the City conducts follow-up activities. If the construction project site is five acres or over, the City notifies the Regional Board for follow-up activities. The Regional Board is responsible for issuing State General Construction Permits and conducting follow-up activities for sites five acres and above. Beginning in 2003, however, federal regulations will require the Regional Board issue General Construction Permits for sites one acre and above. The issuance of these permits will allow the Regional Board to collect fees for site inspection activities. As the proposed permit is currently written, however, cities will be required to inspect these sites, while the Regional Board collects the fees. It is more appropriate for the Regional Board to begin this activity in 2003 and fund their work through their permit fees.

Impact on the City – It is estimated that the cost to hire an additional two staff to review and inspect BMP implementation plans and SWPPPs would cost approximately $188,339. This would cost the ratepayers an increase of several cents on their Stormwater Pollution Abatement Charge.

Recommended City Position – Until March 2003, current permit requirements should be maintained, whereby permittees are responsible only for SWPPPs for sites 2-5 acres and after March 2003, require that the Regional Board take responsibility for inspections of construction sites greater than one acre. If the Regional Board is willing to transfer the funding from permit fees to the City for the responsibility of inspection of construction sites greater than one acre, the City may want to reconsider this position.

7. **Responsibilities of the Principal Permitee**

Proposed Permit - Assigns Los Angeles County, as the Principal Permittee, the responsibility of coordinating permit activities and negotiate NPDES requirements with the Regional Board. The proposed permit identifies the Executive Advisory Committee (EAC) representatives and the County as the agencies who will conduct formal discussions with the Regional Board on behalf of the permitees.

Current Practice – The existing permit does not give a formal role to the EAC.

Impact on the City – The proposed language will not allow the City an independent voice when permit coordinating activities take place. As the largest jurisdiction in the region, it is reasonable to provide a separate, permanent voice to the City of Los Angeles on this body.

Recommended City Position – In addition to the Principal Permittee and the EAC, add the City of Los Angeles as the agencies to conduct formal discussions with the Regional Board on behalf of the permittees.

RECOMMENDATION:

That the Council:

1. Forward the attached policy comment matrix to the Regional Board, which details the City's recommended changes for the draft 2001 NPDES Municipal Stormwater Permit, specifically, the Council's positions to:

2. Request deletion of the requirement for bi-weekly street sweeping;

3. Support the Regional Board's responsibility for inspections of industrial/commercial sites that are under the General Industrial Activities Stormwater Permit;

4. Support the requirements for Standard Urban Storm Water Mitigation Plans (SUSMP);

5. Request deletion of the requirement for peak flow control until consensus language is developed;

6. Request deletion of the additional requirements on City to require structural and non-structural BMPs and inspect construction sites less than one acre;

7. Request that until March 2003, current permit requirements be maintained, whereby the City is responsible only for SWPPPs for sites 2-5 acres and after March 2003, require that the Regional Board take responsibility for inspections of construction sites greater than one acre;

8. Add the City of Los Angeles to the Principal Permittee and the Executive Advisory Committee (EAC) as the agencies to conduct formal discussions with the Regional Board on behalf of the permitees.

FISCAL IMPACT STATEMENT:

The total cost of the proposed permit, as written, would cost the City over $13.4 million (see Table 3). The staff recommendations for the proposed 2001 NPDES Municipal Stormwater Permit will cost a total of $607,860 (see Table 2). This total cost includes additional staff costs of $432,779 for the expanded SUSMP implementation requirements and $175,081 for the addition of two inspectors to conduct expanded industrial/commercial site inspections. Any increase in attorney costs have not been calculated at this time, however, it is not expected to be significant the first year of the permit and may be revisited in future years if costs escalate substantially.

The 2001-02 Stormwater Pollution Abatement Fund included $530,000 for expected new NPDES permit requirements. The estimated staff costs of $607,000 will leave a shortfall of approximately $70,000 in the SPAF for these activities. All of the staff will not be necessary the first year of the NPDES permit implementation. In future years, however, the SPAF was budgeted to absorb an increase of $200,000, which will leave the SPAF short by $400,000 annually for permit implementation activities.

CITY OF LOS ANGELES: BUREAU OF SANITATION, STORMWATER MANAGEMENT PROGRAM
Comments on the First Draft of the 2001 NPDES Municipal Stormwater Permit

Location	Passage	Comments/Recommendations
Page 4,Findings Item 6	"These environmentally sensitive area include . . . Significant Natural Areas, and impaired water bodies listed under Clean Water Act Section 303(d)."	Recommend modifying as follows: "These environmentally sensitive area include . . . Significant Natural Areas, and impaired water bodies ~~listed under Clean Water Act Section 303(d)~~." Impaired water bodies are not necessarily synonymous with environmentally sensitive areas. The City believes that there are separate regulatory provisions to address and deal with impaired water bodies such as the TMDL process, which takes into consideration point and non-point source pollution for these waters
Page 4, Findings Item 7	"The increased volume, increased velocity, and..."	Recommend adding to the end of this sentence: "**in water bodies susceptible to these effects**".
Page 4, Findings Item 7	"Significant declines in the biological integrity and physical habitat of streams and other receiving waters have been found to occur with as little as 10 percent conversion from natural to impervious surfaces."	Recommend rewording this text as follows because 10% may not be the standard: "Studies have demonstrated that increasing impervious cover can lead to declines in habitat quality and associated biodiversity."
Page 5, Findings Item 11	"Studies indicate that facilities...fueling (automotive...)..."	Delete typographical error in parenthesis (...service facilities**0**)
Page 8, Findings Item 25	"...These criteria apply to discharges...."	Recommend the sentence be changed: "These apply as ambient criteria for inland surface waters". The current language inaccurately describes the legal requirements. The CTR criteria apply as ambient criteria for surface waters, the criteria do not apply directly to discharges as stated here. Also, the State Implementation Policy (SIP) specifically states in footnote 1 on page 1 that "This Policy does not apply to regulation of storm water discharges."
Page 9, Findings Item 37	"California Water Code (CWC) Section 13263(a) requires that...."	Water Code Section 13263(a), in addition to the requirements listed, requires the Regional Board when setting waste discharge requirements to take into consideration "the provisions of Section 13241 including economic considerations." The Los Angeles Superior Court in the permit appeals for the Los Angeles-Glendale, Tillman, and Burbank Water Reclamation Plants confirmed this requirement in the final Statement of Decision issued on April 4, 2001. This decision is binding on the Regional Board. "...other waste discharges; and the need to prevent nuisance. ,and **the provisions of Section A 132 and 1.**"
Page 10, Findings Item 38	"California Water Code (CWC) Section 13370 et seq. Requires...".	Recommend changing "comply" to "**be consistent**...". California operates an in-lieu permitting program, waste discharge requirements must merely "be consistent" with CWA requirements.
Page 10, Findings Item 39	The Regional Board is the...."	Recommend replacement of word "or" with "**for**" in the first sentence.
Page 10, Findings Item 43	"To meet this objective, this Order requires implementation of BMPs intended to reduce pollutants in storm water and urban runoff such that ultimately their discharge will neither cause violations of water quality objectives nor create conditions of nuisance in receiving waters."	Recommend modifying as follows: "To meet this objective, this Order requires implementation of BMPs intended to reduce pollutants in storm water and urban runoff **to the Maximum Extent Practicable (MEP)** such that ultimately their discharge will neither cause violations of water quality objectives nor create conditions of nuisance in receiving waters."

R0002291

CITY OF LOS ANGELES: BUREAU OF SANITATION, STORMWATER MANAGEMENT PROGRAM
Comments on the First Draft of the 2001 NPDES Municipal Stormwater Permit

Location	Passage	Comments/Recommendations
Page 11, Findings	Add a new finding (presumably between Items #45-47).	Recommend reference to non-chapter 3 CEQA requirements for the adoption of waste discharge requirements. Chapter 1 of CEQA requires the Regional Board explore alternatives and mitigation measures that might cause less impact on the environment than the action/Order proposed. Recommend modyifying as follows: "The action to adopt a NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), in accordance with Section 13389 of the California Water Code."
Page 12, Part 1	"Each Permittee shall effectively prohibit non-storm water discharges into the MS4 and watercourses, except where such discharges are: 1. covered by a separate individual or general NPDES permit for . . ."	Recommend modifying as follows: " ...covered by a separate individual or general NPDES permit, **or granted an exemption by the Regional Board, the Executive Officer, or the State Water Resources Control Board,** for . . . " This modification would maintain the intent of the current Permit and include sources previously granted an exemption from the Regional Board or State Water Resources Control Board.
Page 12, Part 1.2	".... and meet all the conditions specified by the Regional Board Executive Officer (and which must be included in the revised SQMP)..."	We recommend reinstating Part 2, Section II.C.4 (p. 33-34) of Order 96-054, which describes the procedures to obtain additional categories of exemptions.
Page 12, Part 1.2.a	"a) Categories of natural flow: . . ."	Recommend modifying as follows: "a) Categories of natural flow: (1) Natural springs and rising **natural** ground water; . . . Uncontaminated **natural** ground water . . ."
Page 12, Part 1.2.c	Add new reference items.	9) Washing of fire/emergency vehicles; and 10) Potable water sources with appropriate BMP's applied.
Page 12, Part 1.2.c.1 & 2	Discharge Prohibitions: "Reclaimed and potable landscape irrigation runoff;" "Water line flushing of potable water distribution systems;"	Recommend modifying as follows: "Reclaimed **and potable** landscape irrigation runoff;" "Water line flushing of potable water distribution systems;" Line flushing within the system is necessary to protect the health and safety of the public. In some cases when flushing occurs within the distribution system, chlorination is increased and then the water is dechlorinated. However, during the flush, the water may not be to potable water standards.
Page 13, Part 1.2.c.6	"Dewatering of lakes and decorative fountains;"	Recommend modifying as follows: "Dewatering of lakes, **reservoirs, potable water tanks,** and decorative fountains **with appropriate BMPs applied;**"
Page 13, Part 1.2 Last paragraph	"The Regional Board Executive Officer may add or remove categories of non-stormwater discharges above. Furthermore, in the event that any of the above categories of non-	Recommended modifying as follows: " . . . in the event that any of the above categories of non-stormwater discharges are determined to be a **significant** source of pollutants and **cause an adverse significant impact** . . . the discharge will no

R0002292

Location	Passage	Comments/Recommendations
	stormwater discharges are determined . . . in consideration of anti-degradation policies."	longer be exempt . . ."
Page 13, Part 2	"Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited."	An intro sentence needs to be added that says before paragraph 1, "Except in accordance with this Order " This is an extremely important change to protect from citizen enforcement over an alleged violation of the Receiving Water Limitations.
Page 13, Part 2.1 and 2.2	"1. Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited." "2. Discharges from the MS4 of storm water, or non-stormwater, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance."	The Order includes the "cause or contribute to" language taken from 40 CFR §122.44(d), which is arguably not applicable to stormwater discharges as stormwater is regulated under §122.44(k), which allows BMPs where effluent limitations are not feasible. The language should at least be changed to read: "1. Discharges from the MS4 that **are demonstrated to** cause or contribute to the violation of **applicable** water quality standards or water quality objectives are prohibited." "2. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance."
Page 13, Part 3	"The Permittee shall comply with the permit through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the Storm Water Quality Management Plan (SQMP) and its components and other requirements of this permit including any modifications. If exceedances of water quality objectives.... by complying with the following procedures."	To protect from enforcement jeopardy, the language must read: "The Permittee shall **be deemed to be in compliance** comply with the requirements of this permit through timely implementation of control measures and other actions to **reduce to the Maximum Extent Practicable** pollutants.... the Permittee shall **assure attempt to come into** compliance with discharge prohibitions and receiving water limitations by complying with the following procedure:" The current wording is not protective against potential enforcement actions and is not consistent with the SWRCB Policy set forth in Order 99-05.
Page 13, Part 3.a	" a) Upon a determination by either the Permittee or the Regional Board that discharges are causing or contributing to an exceedance...The Regional Board may require modifications to the Report."	Remove the "or contributing to" language.
Page 17, Part 3.F.2	"The Principal Permittee shall modify the SQMP to comply with waste load allocations developed and approved pursuant to the process for the designation and implementation of Total Maximum Daily Loads (TMDLs) for impaired water bodies."	Include discussion of the process for that modification and the timeline for compliance, which must include a public review.
Page 18, Part 3.G.1.b and g	Prohibit the discharge of "untreated" runoff.	Modify by adding the word "untreated" for each paragraph as follows: "b) Prohibit the discharge of **untreated** wash waters to the MS4 from the cleaning of gas stations or other automotive facilities." "c) Prohibit the discharge of **untreated** runoff to the MS4 from mobile auto washing, steam cleaning "e) Prohibit the discharge of **untreated** runoff to the MS4 from storage areas of materials containing grease, oil..." "g) Prohibit the discharge of **untreated** runoff from the washing of toxic materials from paved or unpaved areas to the MS4..."

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Location	Passage	Comments/Recommendations
		"h) Prohibit washing impervious surfaces in industrial/commercial areas that result in a discharge of **untreated** runoff to..."
Page 18, Part 3.G.1.e	"Prohibit the discharge of runoff to the MS4 from storage areas of materials containing..."	In the existing permit, paragraphs b & g prohibit the discharge of "untreated" runoff Recommend modify as follows: "Prohibit the discharge of runoff to the MS4 from storage areas of materials containing grease, . . . and uncovered receptacles containing hazardous materials **unless such containers are new and unopened**."
Page 18, Part 3.G.1.j	"Prohibit spills, dumping, or disposal of materials into the MS4, other than storm water, such as:"	Recommend modifying as follows: "Prohibit ~~spills~~, dumping, or disposal of materials into the MS4, . . ." Spills are not deliberate, intentional acts whereas dumping and disposal are.
Page 18, Part 3.G.1	Add a new reference item after j).	"Control spills to the maximum extent practicable."
Page 18, Part 3.G.1.j.4	"Fuel and chemical wastes, animal wastes, garbage, batteries, and other materials . . ."	Recommend modifying as follows: "Fuel and chemical wastes, animal wastes, garbage, and batteries, and other materials that have potential adverse . . . " "other materials" is overly broad, too open-ended, and redundant with the phrase "such as" that prefaces this subsection.
Page 19, Part 3.G.1.k-p	Paragraphs (k) through (p) are not related to (a) through (j) in that they do not reflect a category of prohibitions or controls.	Recommend adding another appropriate topic heading for items (k) through (p) and renumbering as appropriate.
Page 19, Part 3.G.1.p	"Adopt and implement an agency-specific storm water and urban runoff ordinance or amend an existing one, if necessary, to be able to enforce all requirements of the permit, effective immediately upon the adoption of this Order."	The City is unable to adopt a new or amend a current ordinance immediately upon the adoption of this Order. The City recommends modifying as follows: "Adopt and implement an agency-specific storm water and urban runoff ordinance or amend an existing one, if necessary, to be able to enforce all requirements of the permit, effective ~~immediately upon~~ **9 months after** the adoption of this Order."
Page 19, Part 3.H	"...Permittees to address their programs specifically for that particular situation and change them accordingly to address the problem.)"	Recommend modifying as follows: "...for that particular situation and change them accordingly to address the problem **if continued implementation of the SQMP is not expected to address the situation)**."
Page 20, Part 3.J	"The Principal Permittee shall submit a Storm Water Monitoring Report on August 15, 2002 and annually on August 15 thereafter..."	Although not specifically specified, it appears from this passage that the reporting period for monitoring requirements is based on the fiscal year (July 1 through June 30 of each year). The Storm Water Monitoring Report for this period is then due on August 15, only about six weeks later. This time period is too short to perform thorough assessments and reporting of the vast array of data that will be collected during the year. This report should be due six months after the conclusion of the year's sampling
Page 24. Part 4.A.2. a and 1	Corporate Outreach	The phrase "corporate heads" is too limiting, especially for large corporations whose officers are located out of the areas. Therefore, change "corporate heads" to "**corporate or management company**."

Location	Passage	Comments/Recommendations
Page 24, Part 4.A.2.b	"Permittees shall develop and implement a Business Assistance Program . . ."	Change to "Permittees shall implement a Business Assistance Program . ." Permittees may be able to establish cooperative efforts with existing business assistance programs to accomplish this requirement without undue burden of developing a brand new program. It may also be more cost effective for them to partner with other organizations.
Page 24, Part 4.A.2.b.1	"On-site technical assistance or consultation via telephone to identify and implement pollution prevention methods and best management practices"	Recommend the insertion of the word "stormwater" in front of "pollution prevention".
Page 25, Part 4.A.2.b.4	"Permittees shall conduct follow-up independent of the Business Assistance Program, based on the priorities of the Industrial/Commercial Inspection Program"	Move "Permittees shall conduct follow-up independent of the Business Assistance Program, based on the priorities of the Industrial/Commercial Inspection Program" to P. 28 Part B 5. C). The placement of this statement implies that some type of follow-up is required by the Business Assistance Program. After "The Business Assistance Program shall be a confidential and non-enforcement program", add the following: "The Business Assistance Program shall operate independently of the Industrial/Commercial Inspection Program".
Page 27, Part 4.B.3.d	"Other Commercial facilities (contributing or potentially contributing to the impairments of receiving waters)"	We recommend the "other commercial" sites to be defined as follows: Those facilities having activities corresponding to SIC codes 33XX, 34XX, 35XX, 4612, 4613, 4619, 4731, 4783, 4789, 4925, 4932, 5031, 5039, 5051, 5082, 5083, 5084, 5085, 5172, 5211, 5989, 7221, 7212, 7213, 7217, 7218, 7219, 7261, 7622, 7623, 7692, 7693, and 9629.
Page 28, Part 4.B.5.b	"Automotive Service Facilities"	We recommend defining "Automotive Service Facilities" as SIC codes 75XX, and 5014.
Page 28, Part 4.B.7.a	"Each Permittee shall provide oral notification to the Regional Board of non-compliance with existing storm water regulations (within 3 days of discovery) or create an adverse impact or nuisance as it relates to the quality of the receiving waters of the State within its jurisdiction, within 24 hours of the discovery. Such oral notification shall be followed up by a written report to be submitted to the Regional Board within 5 days of the incidence of non-compliance."	Our enforcement staff deals with nuisance discharges almost on a daily basis. These flows are stopped and appropriate enforcement actions are taken. Reporting all incidents would not be practical. We recommend reporting only serious discharges of sewage or hazardous material to the RWQCB as detailed in the draft permit language. All other discharges should be reported in writing by the 10th day of each month. Replace passage with, " For discharges to the MS4 of sewage and hazardous materials that are a threat t public health and safety, and the quality of receiving waters, each permittee shall provide verbal notification to the Regional Board of non-compliance within 24 hours of discovery followed by a written report within 5 working days. All other discharges will be reported in writing to the Regional Board by the 10th day of each month.
Page 28, Part 4.B.7.b	"Permittees shall develop and submit criteria by which to evaluate events of non-compliance to determine whether they create an adverse impact or nuisance. These criteria shall be submitted in the SQMP and Annual Report for Regional Board review and subject to Regional Board Executive Officer's approval."	Recommend modifying as follows: "**Permittees The Principal Permittee in conjunction with the co-Permittees** shall develop and submit criteria **procedures by** which to evaluate . . ."
Page 29, Part 4.C.1	Programs for Development Planning	Recommend modifying as follows: "...require all planning priority development and redevelopment projects, **to the maximum extent practicable,** to."

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Location	Passage	Comments/Recommendations
Page 29, Part 4.C.1	Programs for Development Planning	Define planning priority projects. Definition must be consistent with the Development Planning Model Program.
Page 29, Part 4.C.1.b	"Maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground;"	Recommend modifying as follows: "Maximize the percentage of permeable surfaces to allow percolation of storm water into the ground, **except in the Harbor area and in the San Fernando Valley (SFV), where prior approval by the SFV Watermaster, also known as the Upper Los Angeles River Area (ULARA) Watermaster, is required.**" The Upper Los Angeles River Area (ULARA) Watermaster is concerned with percolation of storm water into the ground in the San Fernando Valley area. The Port of Los Angeles has also expressed concerns over the feasibility in the Harbor area due to the high groundwater table.
Page 29, Part 4.C.1.d	"Minimize pollution emanating from parking lots through the use of appropriate treatment control BMPs and good house keeping practices;"	Recommend deleting this subsection. It is redundant with the SUSMP requirement.
Page 30, Part 4.C.3.a.4 and 5	"Divert roof runoff to vegetated areas before discharge"	This violates section 91.7013.9 of the building code, which requires all roof water be delivered through a non-erosive via gravity to a street or watercourse if the slope of the underlying natural ground exceeds 3% Under Finding #7 (page 4 of the draft permit) the major concern with urban developments in hillside areas is the potential for increase volume and velocity of storm water runoff that will greatly accelerates downstream erosion and impairs stream habitat. This will be true in rural areas where there are no concrete curbs, gutters, or storm drains. Under section 91.7013.9 there will not be any downstream erosion and impairs stream habitat because all the roof drainage will be carried to the City's storm drain system via non-erosive devices. Therefore, it is recommended that item (4), "Divert roof runoff to vegetated areas before discharge" be deleted.
Page 30, Part 4.C.3.b	SUSMP	Since this permit is supposed to consider watershed solutions and that in some cases it may make more sense to develop regional solutions that could address existing as well as new development. The following change is suggested: After (7) add in the following paragraph: "Or the Permittee shall demonstrate how a watershed solution using regional controls has been developed that would lead to better water quality results than individual new and redevelopment sites meeting the SUSMP standards".
Page 30, Part 4.C.3.b	SUSMP Project Categories	Recommend changing title of item (4) to "Automotive Repair Shops" to be consistent with the definition title on Part 5 of page 46, or vice versa.
Page 31, Part 4.C.4	Numerical Design Criteria	Include "Structural BMPs" in 1st paragraph. The revised paragraph shall read as follows: "The Permittees shall require that post-construction **structural or** treatment control BMPs incorporate..."
Page 31, Part 4.C.4.b.2	"....for Los Angeles County"	Recommended change: "...for Los Angeles County, or"
Page 32, Part 4.C.6	Definition of Acre	Define acre as 43,560.

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Location	Passage	Comments/Recommendations
Page 32, Part 4.C.6.a	USEPA Phase II requirements	Change sentence to read as, "One acre or greater."
Page 34, Part 4.C.10	Mitigation Funding	Please explain what this entire section means. Are subsections a through c identified as potential funding sources? Define items a through c. In item (a), define conditions of impracticability. (Same as existing permit?) Granting of waivers, including waivers of impracticability, shall be the responsibility of the Regional Board Item (b) needs clarification. "'Legislative funds become available"...to who?
Page 35, Part 4.C.12	General Plan Update	Under the State of California General Plan Guidelines, each City is given 5 years to update the General Plan. This item gives each Permittee 540 days from permit adoption date. In order to effect a complete and appropriately detailed update to the General Plan, it is suggested that the time allowed should reflect the State General Plan Guidelines of 5 years. Therefore, change the deadline of 540 days to 5 years from permit adoption date.
Page 35, Part 4.C.14.	Developer Technical Guidance and Information	The City of Los Angeles has developed three technical guidance manuals, which are entitled, "REFERENCE GUIDE FOR STORMWATER BEST MANAGEMENT PRACTICES", "DEVELOPMENT BEST MANAGEMENT PRACTICES HANDBOOK, PART A – CONSTRUCTION ACTIVITIES", AND "DEVELOPMENT BEST MANAGEMENT PRACTICES HANDBOOK, PART B – PLANNING ACTIVITIES". The City's technical manuals already provide such information as identified on Page 35 Part 4C14b1-5 for development projects with the exception of the Peak Flow Control numerical criteria (referred to on Page 29 Part 4C2). The Peak Flow Control numerical criteria will be developed by the Permittees upon the adoption of the Permit as described in Page 29 Part 4C2. If the Board determines that the City's technical manuals are not sufficient to meet the requirements enumerated in Part 4C14, then for the purposes of countywide consistency, the Principal Permittee should develop the technical guidance manual. Recommend modifying as follows: "b) Principal Permittees shall develop..."
Pg. 39, Part 4.E.1	Public Agency Activities	Please revise the listing of Public Agency requirements to be consistent with the succeeding Sections and Topics.
Page 40, Part 4.E.3.a	"Each Permittee shall...from construction activity at all construction sites."	Change sentence to read: Each Permittee shall...from construction activity **activities** at all **public** construction sites.
Page 40, 41		There are two subsections under Part 4.E numbered "3", one on page 40 and one on page 41.
Page 41, Part 4.E.3.b.4 and 5	Public Construction Activities Management	Items 4 and 5 address City staff ensuring effectiveness of BMPs. It has always been the City's contention that staff is not responsible for ensuring BMPs are effective. Staff may be responsible for ensuring BMPs are in place and operational, but should not be liable for "effectiveness."
Page 41, Part 4.E.3.b and c	"Each Permittee shall obtain coverage...under separate permit until March 10, 2003."	Delete b) and c). Replace with "Each Permittee shall comply with Part 4.D of this Order."
Page 41, Part 4.E.3.b	Vehicle Maintenace/Material Storage... "Each Permittee shall implement BMPs to minimize pollutant discharges in storm water..."	Recommend modifying as follows: "Each Permittee shall implement BMPs to minimize pollutant discharges **to the maximum extent practicable** in storm water . . ."

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Location	Passage	Comments/Recommendations
Page 42, Part 4.E.3.c	"Each Permittee shall require that all vehicle/equipment wash areas..."	Recommend modifying as follows: "...for new facilities or during redevelopment of existing sites **wash areas** "
Page 42, Part 4.E.3.d	"Each Permittee shall, for each municipal yard...obtain separate coverage under the State of California General Industrial Activities Storm Water Discharge Permit"	We would like to maintain the current Permit provisions (Part 2 IV C 8 of Order 96-054), which allow municipal yards covered under Phase I of the Federal Storm Water Regulations, to seek coverage under the municipal permit.
Page 42, Part 4.E.4.g	"Each Permittee shall regularly inspect storage areas."	Revise to read. "Each Permittee shall regularly annually inspect storage areas."
Page 42, Part 4.E.5.b	"Classify priority catch-basins to be those that are 40 percent full"	Please clarify how the 40 percent full figure came about---is there any science behind it. This figure is very subjective to individual judgement, especially in the field.
Page 43. Part 4.E.5.a	"Inspect and clean catch basins between..."	Change to "Inspect **and if necessary** clean catch basins...."
Page 43. Part 4.E.5. Second b	"A review of current storm drain maintenance...appropriate storm water BMPs are being utilized to water quality;"	Change to "... appropriate storm water BMPs are being utilized to **protect** water quality;"
Page 44, Part 6.c	"Each Permittee shall require that sawcutting wastes be recovered and disposed of properly and that no case shall waste be allowed to enter the storm drain."	Change paragraph to read:" Each Permittee shall require that sawcutting wastes be recovered and disposed of properly."
Page 44, Part 4.E.7	"Each Permittee shall continue to repair essential public services and infrastructure in a manner to minimize environmental damage in emergency situations such as: earthquakes, . . ."	Recommend modifying as follows: "Each Permittee shall continue to repair essential public services and infrastructure in a manner to minimize environmental damage in emergency situations such as, **but not limited to**: earthquakes, . . ."
Page 44, Part 4.F	"Permittees shall eliminate all illicit connections and illicit discharges to the storm drain, and shall document and report all such cases. To accomplish this, the Permittees shall revise their Program for Elimination of Illicit Connection and Illicit Discharge...including performance measures and schedules."	Does this mean revising the Model Program?
Page 45, Part 4.F.1.a	"Implementation: Upon Executive Officer approval of the revised IC/ID Program...and available for review and approval by the Regional Board when requested."	Does this mean "Upon Executive Officer approval of the revised Model IC/ID Program" ?
Page 45, Part 4.F.1.b	General Elements – "...the Lead Permittee shall have the capability to locate all permitted discharges..."	The term "Lead Permittee" is not defined in the permit. Are we to assume this is the "Principal Permittee"?
Page 46, Part 4.F.3.a	"Respond, within 72 hours of discovery or a report of a suspected illicit discharge, with activities ..."	It is our recommendation that the response time be changed to three (3) business days instead of 72 hours.

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Location	Passage	Comments/Recommendations
Page 48	"Environmentally Sensitive Areas"	"...Natural Area by the California Department of Fish and Game... or Endangered Species (RARE) beneficial use; or an area identified by the Permittees as environmentally sensitive for water quality purposes, based on the Regional Board Basin Plan and Clean Water Act Section 303(d) Impaired Water-bodies List for Los Angeles County."
Page 51	Definitions	Add new term, "Pollution Prevention" and definition, which emphasizes source reduction methods for reduction and elimination of pollutants entering stormwater. The restricted definition will more clearly define what is being required of the regulated community and what is being enforced by regulators. If undefined, the term will default to include multi-media source reduction, in process recycling, conservation of energy and natural resources.
Page 57, Item F Page 59, Item L	Proper Maintenance and Operation Bypass	These requirements seem to have been copied from an NPDES permit for a wastewater treatment plant. They are not applicable to a stormwater permit. "Facilities and systems of treatment" have not even been proven to be effective. How can it be that the non-operation or bypassing of such facilities can be deemed harmful or non-compliant? Please ensure that these sections are deleted
Page 73, Monitoring and Reporting Program, IIC1	"The Principal Permittee shall develop and implement a tributary/source identification monitoring program."	The RWQCB should have more mass emission sites up each of the 5 major watersheds instead of just measuring concentration in various tributaries. Data from each of these proposed mass emission stations represents the contribution from the next upstream mass emission station and all the ancillary storm drain contributions. Watershed-based source control should be targeted in the proposed mass emission reaches that contribute the most pollutant of concern. If the RWQCB still wants to have these tributary stations, then flow should be added to the requirements so that the different tributaries could be compared to each other based on pollutant loads.
Page 75, Monitoring and Reporting Program, IIE2	" Reference stations shall be selected in stream reaches that are not listed as impaired on the 303(d) list and that are not representative of urban stream conditions, based on surrounding land uses and a lack of upstream point source discharges."	These reference stations will be difficult to find and are probably not comparable to the more urban downstream reaches.

TABLE 1

SPECIAL PURPOSE FUND SCHEDULES

SCHEDULE 7

STORMWATER POLLUTION ABATEMENT FUND

The Water Quality Act of 1987, adding Section 402(P) to the Federal Water Pollution Control Act, provides that the Environmental Protection Agency shall establish regulations setting forth requirements for stormwater discharges from large municipal storm drain systems. The City enacted a Stormwater Pollution Abatement Charge (Article 4.2 of Chapter 6 of the Los Angeles Municipal Code) on all properties in the City in order to treat and abate stormwater. The charge is based on stormwater runoff and pollutant loading associated with property size and land use.

Actual 1999-00	Estimated 2000-01		Budget 2001-02
		REVENUE	
$ 6,302,128	$ 12,035,806	Cash Balance, July 1	$ 12,225,806
		Less:	
		Prior Year's Unexpended Appropriations	9,011,275
$ 6,302,128	$ 12,035,806	Balance Available, July 1	$ 3,214,531
27,919,609	28,000,000	Stormwater Pollution Abatement Charge	28,000,000
3,481,859	–	General Fund	1,000,000
180,270	250,000	Interest	250,000
294,634	1,690,000	Grant Reimbursement	2,333,623
7,577	55,000	Reimbursement from Other Funds	–
183,750	1,550,000	Other	755,000
$ 38,269,827	$ 43,580,806	Total Revenue	$ 35,553,154
EXPENDITURES		APPROPRIATIONS	
143,744	157,000	Environmental Affairs	160,517
406,241	473,000	General Services	472,750
51,594	75,000	Planning	79,872
		Public Works:	
101,962	116,000	Board Office	68,515
–	–	Director of Public Works	119,534
59,818	74,000	Accounting	–
189,040	189,000	Contract Administration	239,151
4,153,559	4,849,000	Engineering	5,368,187
7,119,710	7,915,000	Sanitation	8,115,002
4,639,354	4,880,000	Street Services	4,879,818
70,000	--	Recreation and Parks	–
3,014,682	4,270,000	CIEP Physical Plant	4,637,000
–	321,000	CIEP Municipal Facilities	100,000
–	–	Unappropriated Balance - Civilian Contract Negotiations	339,075
		Special Purpose Fund Appropriations:	
6,192,168	6,374,000	Related Costs	6,374,201
--	--	General Services	361,000
--	--	Reserve for Future Capital Projects	1,900,000
--	162,000	Unallocated NPDES Implementation	50,000
–	--	New Stormwater Permit Requirements	530,000
–	510,000	Emergency Construction Contingency	–
77,949	390,000	On Call Contractors (Emergency Funds)	1,759,532
$ 26,234,021	$ 31,355,000	Total Appropriations	$ 35,553,154

TABLE 2

DRAFT STORM WATER PERMIT: ADDITIONAL REQUIREMENTS AND ESTIMATED COSTS

New Requirement	Dept./Bur.	Position	Class. #	No. of Positions	Base Salary/Position	Related Costs/Position	Total Cost
PROGRAMS FOR INDUSTRIAL/COMMERCIAL INSPECTIONS							
Inspect industrial/commercial sites, City jurisdiction, for compliance with ordinances, permits and BMP implementation. (Part 4 B)	Bur. San., SMD	Industrial Waste Inspector	4292	2	$57,566	$29,975	$175,08[illegible]
Legal action pursuant to inspections of industrial/commercial sites, general, for compliance with ordinances, permits and BMP implementation. (Part 4 B)	City Attorney						
PROGRAMS FOR DEVELOPMENT PLANNING and CONSTRUCTION							
Implement requirement for Standard Urban Storm Water Mitigation Plans (SUSMP) for ministenal projects for the SUSMP project categories. (Part 4 C)	Dept. Bldg. & Safety	Associate Engineer	7240	4	$65,876	$42,319	$432,779
Total Annual Cost:							**$607,860**

GENERAL NOTE: This cost estimate does not include costs related to implementing TMDLs.

TABLE 3
DRAFT STORM W/ 'R PERMIT: ADDITIONAL REQUIREMENTS AN' 'STIMATED COSTS

New Requirement	Dept./Bur.	Position	Class. #	No. of Positions	Base Salary/Position	Related Costs/Position	Total Cost
PROGRAMS FOR INDUSTRIAL/COMMERCIAL INSPECTIONS							
Inspect industrial/commercial sites, City jurisdiction, for compliance with ordinances, permits and BMP implementation. (Part 4.B)	Bur. San., SMD	Industrial Waste Inspector	4292	2	$57,566	$29,975	$175,081
Inspect industrial/commercial sites, State jurisdiction, for compliance with ordinances, permits and BMP implementation. (Part 4.B)	Bur. San., SMD	Industrial Waste Inspector	4292	4	$57,566	$29,975	$350,162
Legal action pursuant to inspections of industrial/commercial sites, general, for compliance with ordinances, permits and BMP implementation. (Part 4.B)	City Attorney						
PROGRAMS FOR DEVELOPMENT PLANNING and CONSTRUCTION							
Implement requirement for Standard Urban Storm Water Mitigation Plans (SUSMP) for ministenal projects for the SUSMP project categories. (Part 4.C)	Dept. Bldg. & Safety	Associate Engineer	7240	4	$65,876	$42,319	$432,779
For construction sites less than 1 acre, implement requirements for structural and non-structural BMPs and inspect sites during wet weather. (Part 4.D)	Dept. Bldg. & Safety	Associate Engineer	7240	6	$65,876	$42,319	$649,168
		Building Inspector	4211	2	$48,797	$31,347	$160,288
For construction sites greater than 1 acre, review and inspect BMP implementation plans and Local Storm Water Pollution Prevention Plan (Local SWPPP). (Part 4.D)	Dept. Bldg. & Safety	Associate Engineer	7240	1	$65,876	$42,319	$108,195
		Building Inspector	4211	1	$48,797	$31,347	$80,144
PUBLIC AGENCY ACTIVITIES							
Sweep streets that generate low volumes of trash not less than two times per month. (Part 4.E)	Bur. St. Services	Motor Sweeper Operator	3585	23	$48,414	$69,372	$2,709,088
		HD Truck Operator	3584	7	$41,380	$59,293	$704,714
		Truck Operator	3583	2	$40,639	$58,232	$197,741
General Services Inter-Departmental Expense: Estimated annual costs for General Services for fuel, maintenance (labor and materials) related to additional sweepers, trucks, and loaders.*							$985,334
Total Annual Cost:							**$6,377,614**

Capital costs for purchase of equipment for Bureau of Street Services to perform additional street sweeping (24 Compressed Natural Gas (CNG) powered motor sweepers, 3 Tractors, 1 Pushback Trailer, 3 Lt. Over-the-cab-Loaders, and 6-HD Over-the-cab Loaders).	$7,065,000
Total Capital Cost:	**$7,065,000**

Total Costs, Annual and Capital:	**$13,442,614**

* The cost of facilities for the CNG powered equipment has not been estimated at this time. Additional overnight parking for the equipment may be required at the Northridge Facility.

GENERAL NOTE: This cost estimate does not include costs related to implementing TMDLs.

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Policy Issues

Location	Passage	Comments/Recommendations
General Comment	The City strongly opposes the requirements of the draft Permit that pass responsibilities of the State to the Permittees for the inspection of industrial/commercial sites and construction sites. We are pleased to hear that the Executive Officer has taken the same position as the City against the proposed transfer of responsibilities. These responsibilities clearly belong to and should remain with the State and the Regional Water Quality Control Board. Specifically, for: Industrial/Commercial Sites: Inspections would include Phase I facilities that operate under NPDES permits issued by the Regional Board. Shifting responsibilities for inspections will put the Permittees in the position of acting as agents of the State, create significant financial burdens for the Permittees, and expose the facilities to being regulated at both the State and local levels. This will create situations where inconsistencies in the interpretation and application of regulations can double the potential liability of a given facility. Construction Sites: a) Less than 1 acre - Regulations for sites less than 1 acre are unnecessary. "Less than 1 acre" does not have a lower limit and is beyond the intent of the Federal Phase II program. Many projects less than 1 acre do not cause an adverse impact on water quality; those that do not cause an adverse impact are not being regulated at the State or Federal level and will not be regulated in the immediate future. If a site that is less than 1 acre does cause an adverse impact on water quality, then current local, State and/or Federal ordinances/laws/regulations give the authority for agencies to take enforcement action. b) Between 1 and 5 acres - Federal regulations (Phase II) for sites 1 acre and greater will be in effect beginning March 2003. Therefore, increases in regulations for sites 1 - 5 acres should be deferred until that time, when the State will modify its General Construction Permit to include these sites and take on the responsibilities to inspect them. Until March 2003, current Permit requirements should be maintained, whereby Permittees are responsible only for Local SWPPPs for sites 2 - 5 acres. c) Five or more acres - Regulating these sites belongs with the State under the Statewide General Construction program.	
Page 10, Findings Item 39	"These industrial and construction sites and discharges are also regulated under local laws and regulations."	The responsibilities for State General Industrial and General Construction Permits should remain with the State (please reference General Comment above). Recommend modifying as follows: "These industrial and construction sites and discharges are also can also be regulated under local laws and regulations."
Page 10, Findings Item 41	"A ministerial project may be made discretionary by adopting local ordinance provisions that create decision-making discretion."	The California CEQA defines which projects require discretionary actions. A ministerial project cannot be made discretionary by adopting local ordinance. Any modifications and/or additions to CEQA must be done at the state level. Recommend deleting this sentence.
Page 14, Part 3.A.1	Second paragraph, second sentence: " However, the Principal Permittee..."	Recommend changing the language to "However, the Principal Permittee, the City of Los Angeles, and five representatives of the Watershed Management Committees designated by the Executive Advisory Committee (EAC) will conduct formal discussions with the Regional Board on behalf of the Permittees."

Comments on the First Draft of the 200 . NPDES Municipal Stormwater Permit

Policy Issues

Location	Passage	Comments/Recommendations
Page 19, Part 3.G.1.m and n	"m) Control the contribution, or potential contribution..." "n) Carry out all inspection, surveillance..."	These paragraphs overlap the responsibilities of the State wide General Storm Water Permits associated with Industrial Activities and Construction Activities. Recommend modifying as follows: "m) ...discharges of storm water runoff associated with industrial activities (including construction activities) not already covered by the State General Industrial Activities Storm Water Permit or the State General Construction Activities Storm Water Permit to its MS4... " "n) ...and require regular reports from industrial facilities, not already covered by the State General Industrial Activities Storm Water Permit, discharging..."
Page 23, Part 4.A.1.d	"Each Permittee shall provide all School Districts within its jurisdiction with materials, including videos, live presentations, brochures, and other media necessary to educate a minimum of 50 percent of all school children (K-12) every 2 years on storm water pollution."	Revise to read: "~~Each~~ The Principal Permittee in cooperation and coordination with the other Permittees shall provide all School Districts within ~~its~~ their jurisdiction with materials, including ~~videos~~, live presentations with visual media, brochures, and other media necessary to educate a minimum of 50 percent of all school children (Grades K-12) every 2 years on storm water pollution."
Page 25 Part 4.B	6th Bullet "Enforcement of Pollution Prevention and enforcement control measures at Industrial/Commercial sites."	Change to "~~Enforcement~~ The implementation of proper stormwater Pollution Prevention source reduction and control measures at Industrial/Commercial sites".
Page 26, Part 4.B.3.a	NEW: ""All industrial groups regulated under Phase I..."	NEW: In accordance with the General Comment on Page 1, this item should be deleted.
Page 26, Part 4.B.3.c	"Restaurants. The County Health Department Code shall be amended to facilitate compliance with this Order. At a minimum, the Code shall be modified to require inspections for ..."	The passage appears to imply assigning County Health inspectors the task of inspecting restaurants for BMPs. It is our recommendation that a more direct sentence be added. For example, "Restaurant. The Principal Permittee shall inspect restaurants and other food establishments to ensure compliance with this Order, and the County Health Department Code shall be amended to facilitate the implementation of this requirement."

Comments on the First Draft of the 2001 ..PDES Municipal Stormwater Permit

Policy Issues

Location	Passage	Comments/Recommendations
Page 26-28, Part 4.B.2 & 5	"Source Identification (Industrial/Commercial Sites)"	In accordance with the General Comment on page 1, the Permittees are responsible for the updating of their data bases and the Regional Board is responsible for maintaining its data base. This item should be deleted. Facilities that are already covered under both the General Industrial and Construction permits should not also be covered under the Municipal permit. Inspection and BMP requirements for these permits should remain the responsibility primarily of the RWQCB.
Page 27, Part 4.B.4.a	"Each Permittee shall implement, or require the implementation of, the designated minimum BMPs, as approved in Resolution No. 98-08, at each industrial/commercial site within its jurisdiction."	Please reference General Comment, located at the top of Page 1 Recommend modifying as follows: "Each Permittee shall implement, or require the implementation of, the designated minimum BMPs, as approved in Resolution No. 98-08, at each industrial/commercial site, other than those facilities that have a State General Industrial Activities Storm Water Permit, within its jurisdiction."
Page 27, Part 4.B.4.b	"Each Permittee shall implement, or require implementation of, additional controls for Industrial/Commercial sites tributary to Clean Water Act section 303(d) water bodies (where a site discharges pollutants for which the water body is impaired) as necessary to comply with this Order. Each Permittee shall implement, or require implementation of, additional controls for Industrial/Commercial sites within or directly adjacent to or discharging directly to coastal lagoons or other receiving waters within environmentally sensitive areas as necessary to comply with this Order."	Please reference General Comment, located at the top of Page 1. Recommend modifying first half of Part 4.B.4.b as follows: "Each Permittee shall implement . . . for Industrial/Commercial sites, other than those facilities that have a State General Industrial Activities Storm Water Permit, tributary to Clean Water Act . . . " Recommend separating and modifying second half of Part 4.B.4.b into Part 4.B.4.c as follows: "c) Each Permittee shall implement, or require implementation of, additional controls for Industrial/Commercial sites, other than those facilities that have a State General Industrial Activities Storm Water Permit, within or directly adjacent to or discharging directly to coastal lagoons or other receiving waters within environmentally sensitive areas as necessary to comply with this Order."
Page 27, Part 4.B.5.a	"Each Permittee shall conduct Industrial site inspections..."	In accordance with the General Comment on page 1, we recommend that Item 5a be modified by the addition of the following: "other than those facilities that have a State General Industrial Activities Storm Water Permit."

Comments on the First Draft of the 2001 [illegible] JES Municipal Stormwater Permit

Policy Issues

Location	Passage	Comments/Recommendations
Page 27, Part 4.B.5.b	"Each Permittee shall establish inspection frequencies for facilities...	In accordance with the General Comment on page1 and the revised Part 4.B.3.a we recommend that the 4th row of the table be deleted. The following inspection schedule is recommended: 1. Automotive Facilities – twice during the permit cycle. 2. Industrial/Commercial – once during the permit for all; second visit to those with exposure. 3. Restaurants – will be done by Principal Permittee.
Page 28, Part 4.B.5.b	Table	Add asterisk to "other commercial" in the table.
Page 28, Part 4.B.5.d	"To the extent that Regional Board staff has conducted an inspection of an Industrial/Commercial site during a particular year, the requirement for the responsible Permittee to inspect this site during the same year will be satisfied."	In accordance with the General Comment on page 1, this item should be deleted.
Page 29, Part 4.C.2	Peak Flow Control	This item requires that all projects, regardless of size or types, must show that the post-development peak discharge rate must not exceed the pre-development rate. This will cause undue hardship for developments, particularly in the Upper Los Angeles River Area where there is limited open space for detention/retention. Typical peak flow control measures include detention, retention, or infiltration systems. In addition, the Upper Los Angeles River Area (ULARA) Watermaster is concerned with potential ground water contamination from stormwater infiltration in the San Fernando Valley and will not allow any infiltration systems. The result can be a limit on or stopping new developments in the Upper LA River Area (See Exhibit 1). In addition, the Principal Permittee needs to be involved to ensure countywide consistency. We are also unclear as to what peak flows are intended to be controlled. For estimating purposes, we calculated the amount of runoff generated by 0.75 inch of rainfall on a 1-acre apartment building development. It was assumed that the site was 100% pervious prior to development and 90% impervious after development. Calculations show that the amount of runoff would increase by approximately 16,700 gallons, which would require a capture system with a capacity equivalent to an average-sized (15 ft. x 23 ft. x 6 ft.) residential swimming pool. If this assumption is correct, then the capture system for bigger sites would be several times larger than one swimming pool. Therefore, the need for additional open space for capture systems will put severe constraints on new developments and place an onerous burden on developers that may result in reducing the number of development projects.

Comments on the First Draft of the 2001 NPDES Municipal Stormwater Permit

Policy Issues

Location	Passage	Comments/Recommendations
		Since this requirement is not defined in detail and may have significant impact, we recommend the Peak Flow Control requirement be deleted until consensus language is developed.
Page 30, Part 4.C.2.e	"Soft-bottom segments of other receiving waters within Los Angeles County"	Replace phrase to read as, "unlined reaches of streams, creeks or rivers within Los Angeles County." This is consistent with Xavier Swamikannu of LARWQCB in his description of natural fresh water streams. (Need to attach map that shows which reaches are soft-bottom segments)
Page 32, Part 4.C.5	"Applicability of Numerical Design Criteria"	Change item (a) to read as follows: "Single-family hillside home developments that result in the creation of 10,000 square feet or more of impervious surface area." Change item (c) to read as follows: "Industrial/Commercial developments that result in the creation of 100,000 square feet or more of impervious surface area." Change item (d) to "Automotive Repair Shops" The criteria specified for retail gasoline outlets in item (e) should be required and not suggested. However, remove the 2 criteria where values are projected. The revised sentence should read as follows: "Retail gasoline outlets with six or more fueling dispensers, or with 24 or more dispensing meters, or 5,000 square feet or more of impervious surface area." For restaurants in item (f) change to "5,000 square feet or more of impervious surface area."
Page 32-33, Part 4.C.7.a.1-8	"Site Specific Mitigation"	These added categories have gone beyond the scope of Phase II. In addition, many of these categories are being dealt with in other regulations. The federal regulation for stormwater is to control pollutants via application of BMPs to the MEP if the discharge is a significant pollutant source that creates an adverse impact to the environment, an individual NPDES permit is required and it is no longer regulated by the Municipal permit. The City recommends that these categories be removed and allow the other regulations already set such as the Federal Phase I and Phase II programs to regulate these sites
Page 33, Part 4.C.8	"Redevelopment Projects" "Significant redevelopment means the creation or addition or replacement of 5,000 square eet of impervious surface area on an already	Delete the term "replacement" because replacement should not trigger SUSMP requirements. It is not consistent with the text in the SUSMP Board Order and will significantly increase redevelopment costs, and impede redevelopment. Economic Impacts should be evaluated and taken into account

Location	Passage	Comments/Recommendations
	developed site."	
Pages 36-39, Part 4.D	"Programs for Construction Sites"	Modify the text in this section in accordance with the General Comment on page 1. The General Construction Activities Storm Water Permit (GCASP) and the General Industrial Activities Storm Water Permit (GIASP) should be referenced in this Municipal permit, not restated or modified by this municipal permit. These activities are already regulated under the respective permits and should not be additionally regulated under the Municipal NPDES Permit.
Page 36, Part 4.D	"D. Programs for Construction Sites"	Add Exempt Projects in the categories of construction: Permittees may exempt certain types of Development Construction Projects from the program that pose a minimum risk of storm water pollution. These projects are exempt from any storm water construction control measures including the minimum BMP requirements. A specific listing of exempt projects is included in this section. Additional exemptions may be determined by the Permittee and shall be provided to the Regional Board with a justification for their designation (for purposes of notification). A list of specific types of Development Construction Projects that are deemed to be exempt include: • Routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility; • Emergency construction activities required to immediately protect public health and safety; • Interior remodeling with no outside exposure of construction materials or construction waste to storm water; • Mechanical permit work; • Electrical permit work; • Sign permit work. Other types of Development Construction projects may be designated as exempt if all three of the following criteria are met: • No significant soil disturbing activity (unless adequate controls are provided); • No outside storage or exposure to storm water of construction materials or construction wastes (unless adequate controls are provided); and • The activity poses a minimal risk of storm water pollution. •
Page 36, Part 4.D.a, b, c	"D. Programs for Construction Sites"	Modify the text in this section in accordance with the General Comment on page 1. Additionally, it should be clearly stated that the three size categories of the construction

R0002308

Location	Passage	Comments/Recommendations
		sites refer to areas of disturbed soil. For example, 5 or more acres means a construction site with 5 or more acres of disturbed soil. Otherwise the specified designations will encompass ALL projects, including projects where only interior work is involved with no outside exposure of materials, or others such as mechanical/electrical permit work. These types of projects do not have any impact to storm water pollution and should be exempted from the requirements of this permit. Hence, a category for exempted projects should be included for these activities that are determined to have no potential significant effect on storm water quality to include emergency activities required for public safety and routine maintenance to maintain original grade line or hydraulic capacity. Include a category for exempt projects and change the categories to read as follows: Construction sites with 5 or more acres of disturbed soil Construction sites with 1 to 5 acres of disturbed soil Construction sites with less than 1 acre of disturbed soil Exempt Projects
Page 36, Part 4.D.1	"For construction sites less than 1 acre...."	Modify the text in this section in accordance with the General Comment on page 1. Change title to read, "For construction sites with less than 1 acre of disturbed soil..." Most of the projects under this category of construction sites with one acre or less of disturbed soil have minimum, if any, impact to storm water pollution. With limited resources, we should focus on construction sites with one acre or greater of disturbed soil for BMP implementation that have greater impact on storm water pollution. The section Part 4D1c-bulleted items are not consistent with the Model Program. Therefore, section 4D1c should be remove in its entirety and replaced with a minimum set of requirements in accordance with the Model Program.
Page 36, Part 4.D.1.b	"Train employees in targeted positions . . . (180 days from adoption of this Order), and . ."	Sufficient time should be allowed for the accomplishment of the training requirements following the revised Construction Development Program in the SQMP. Recommend revising Part 4.D.1.b to read as follows: "Train employees in targeted positions . . . (one (1) year from adoption of the Order), and . . ."
Page 37, Part 4.D.2	"For construction sites one acre and greater..."	Modify the text in this section in accordance with the General Comment on page 1. Recommend changing the 1st paragraph to read as follows: "For construction sites with one acre or more of disturbed soil and greater, each Permittee shall require that in addition to the requirements of D.1 above, and require the preparation, submittal, and

R0002309

Comments on the First Draft of the 2001 NPDES Municipal Stormwater Permit

Policy Issues

Location	Passage	Comments/Recommendations
		implementation of a Local Storm Water Pollution Prevention Plan (Local SWPPP)
Page 37, Part 4.D.2.a	"Will result in soil disturbance of one acre or more in size;"	Change the phrase to read, "Will result in one acre or more of disturbed soil..."
Page 37, Part 4.D.2.e	"No construction-related materials, wastes..."	Recommend modifying as follows: "~~No c~~Construction-related materials, wastes, spills, ~~or~~ and residues shall be ~~discharged from the project site to streets, drainage facilities or adjacent properties by wind or runoff~~ kept onsite to the maximum extent practicable;"
Page 37, Part 4.D.2.d-g	"In addition, each Permittee shall ensure the following minimum requirements are effectively implemented at all construction sites regardless of size: d, e, f, g"	Recommend moving Parts 4.D.2.d-g to follow immediately after Part 4.D.1 because Part 4.D.4, the category for construction sites of five acres and greater, refers to the requirements of Part 4.D.1, not Part 4.D.2. Recommend modifying as follows: "d) Sediments generated on the project site shall be retained ~~using adequate structural drainage controls~~ onsite to the maximum extent practicable;"
Page 37, Part 4.D.2.f	"Non-storm water runoff from equipment and vehicle washing and any other activity shall be . . ."	Recommend modifying as follows: "Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the ~~project site~~ and treated before discharge and/or contained and hauled off site to an approved disposal facility; and"
Page 37, Part 4.D.2.g	"Erosion from slopes and channels will be prevented by implementing BMPs including, but not limited to: . . ."	Recommend modifying as follows: . . . BMPs including, but not limited to such as: limiting of grading... and covering erosion susceptible slopes."
Page 38, Part 4.D.2 (after g)	"The landowner shall sign a statement to the effect:"	Recommend modifying as follows: "The landowner or agent of the landowner shall sign a statement to the effect"
Page 38-39, Part 4.D.3	For sites one acre and greater...	Recommend modifying sentence to read as follows: "For construction sites with one acre of disturbed soil and greater, each Permittee shall inspect..." Modify the text in this section in accordance with the General Comment on page 1.
Page 39, Part 4.D.4	"For sites 5 acres and greater, . . ."	Recommend modifying as follows: "For construction sites with 5 acres and greater of disturbed soil, each Permittee shall require that the conditions in D.1 above and:" Modify the text in this section in accordance with the General Comment on page 1.

Comments on the First Draft of the 2001 NPDES Municipal Stormwater Permit

Policy Issues

Location	Passage	Comments/Recommendations
Page 39, Part 4.D.4 a	"On March 10, 2003, for sites one acre and greater, each Permittee..."	Change the sentence to read, "On March 10, 2003, for sites one acre and greater of disturbed soil, each Permittee..." Modify the text in this sectidn in accordance with the General Comment on page 1.
Page 40, Part 4.E.3.b	"Each Permittee shall comply with requirements 1,2, and 3 in the Construction...at all public construction sites:"	Paragraph should read:" Each Permittee shall comply with requirements of D.1, D.2, and D.3 (Page 36-39) in the Construction...at all public construction sites:" Delete 4.E.3.b.2 through 4.E.3.b.6 because they are already covered under D.2 and D.3.
Page 44, Part 4.E.6.a.2	"At a monthly average not less than 2 times per month in areas generating moderate volumes of trash on traffic collector streets and residential areas."	The Regional Board has not provided any data that supports a blanket requirement for bi-weekly street sweeping. Also, no analysis has been done at the state level on merging the efforts of the Permit and the proposed Trash TDML to ensure a comprehensive, cost-efficient approach that will result in real water quality benefits. Recommend modifying as follows: "At a monthly average not less than 2 times once per month in areas generating low or moderate volumes of trash on traffic collector streets and residential areas."
Page 44, Part 6.b	"Permittee –owned parking lots shall be kept clear of debris and oil buildup and cleaned no less than 2 times per month and /or inspected no less than 2 times per month to determine if cleaning is necessary."	Change Paragraph to read: " Permittee-owned parking lots shall be inspected no less than 2 times per month to determine if cleaning is necessary. If cleaning is necessary, it shall be performed within one business day of inspection."
Page 73, Monitoring and Reporting Program, IIC3	"Permittees shall participate in tributary monitoring when the majority of a monitoring station sub-watershed is located in their jurisdiction."	Level of participation, financial or otherwise, is not defined. This scheme creates a negative incentive for Permittees who have the majority area of a monitoring station sub-watershed.
Page 76, Monitoring and Reporting Program, IIF	"The Principal Permittee and the City of Los Angeles shall participate in the SCCWRP's development and calibration of water quality models . . ."	The City has voluntarily participated in the development of the coliform bacteria TMDL by providing over $500,000 in monies and in-kind testing services. No mention is made of other cities that have runoff entering the Los Angeles River and Santa Monica Bay. Also, no limits are put on the extent of participation. According to the language as written, the City could be required to participate for the entire 5-year span of the Permit, if SCCWRP is unsuccessful at calibrating the model.

COMMUNICATION

TO: LOS ANGELES CITY COUNCIL File No. 01-1020

FROM: COUNCIL MEMBER MARK RIDLEY-THOMAS, CHAIR
ENVIRONMENTAL QUALITY AND WASTE MANAGEMENT COMMITTEE

	Yes	No
Public Comments	___	XX

COMMUNICATION FROM CHAIR, ENVIRONMENTAL QUALITY AND WASTE MANAGEMENT COMMITTEE relative to the draft 2001 National Pollution Discharge Elimination System (NPDES) Municipal Stormwater Permit.

Recommendation for Council action, as initiated by Motion (Ridley-Thomas - Galanter), SUBJECT TO THE APPROVAL OF THE MAYOR:

DIRECT the Chief Legislative Analyst (CLA) to forward the policy comment matrix (attached on the Council file in the joint CLA and Office of Administrative and Research Services (OARS) report dated June 18, 2001) to the Los Angeles Regional Water Quality Control Board (Regional Board), which details the City's recommended changes for the draft 2001 NPDES Municipal Stormwater Permit, specifically, the Council's position to:

a. Request deletion of the requirement for bi-weekly street sweeping.

b. Support the Los Angeles Regional Water Quality Control Board's (Regional Board) responsibility for inspections of industrial/commercial sites that are under the General Industrial Activities Stormwater Permit.

c. Support the requirements for Standard Urban Storm Water Mitigation Plans (SUSMP) for discretionary and ministerial projects.

d. Request a clarification of new Peak Flow Control requirements for all development that drains to soft-bottom channels.

e. Request deletion of the additional requirements on the City to require structural and non-structural Best Management Practices (BMP) and inspection of construction sites that are less than one acre.

f. Request that until March 2003, maintain current permit requirements, whereby the City is responsible only for Storm Water Pollution Prevention Plans (SWPPP) for sites 2-5 acres and after March 2003, require that the Regional Board take responsibility for inspections of construction sites greater than one acre.

g. Add the City of Los Angeles to the Principal Permittee and the Executive Advisory Committee (EAC) as the agencies to conduct formal discussions with the Regional Board on behalf of the permitees.

h. Request an exemption to the storm drain discharge prohibition requirements to allow the washing down of residual blood from trauma scenes.

Fiscal Impact Statement: The Chief Legislative Analyst (CLA) and the Office of Administrative and Research Services (OARS) reports that the total cost of the proposed permit, as written, would cost the City over $13.4 million (Table 3 of the joint CLA and OARS report dated June 18, 2001, contained on the Council file). The staff recommendations for the proposed 2001 NPDES Municipal Stormwater Permit will cost a total of $607,860 (see Table 2). This total cost includes additional staff costs of $432,779 for the expanded SUSMP implementation requirements and $175,081 for the addition of two inspectors to conduct expanded industrial/commercial site inspections. Any increase in attorney costs have not been calculated at this time, however, it is not expected to be significant the first year of the permit and may be revisited in future years if costs escalate substantially.

The 2001-02 Stormwater Pollution Abatement Fund (SPAF) included $530,000 for expected new NPDES permit requirements. The estimated staff costs of $607,000 will leave a shortfall of approximately $70,000 in the SPAF for these activities. All of the staff will not be necessary the first year of the NPDES permit implementation. In future years, however, the SPAF was budgeted to absorb an increase of $200,000, which will leave the SPAF short by $400,000 annually for permit implementation activities.

SUMMARY

On May 15, 2001, Council referred Motion (Ridley-Thomas - Galanter), relative to the draft 2001 NPDES Municipal Stormwater Permit, to the Environmental Quality and Waste Management Committee for consideration. Said Motion directed the CLA and OARS to prepare a report for the Environmental Quality and Waste Management Committee on various policy implications of the draft 2001 NPDES permit.

The Los Angeles Regional Water Quality Control Board (Regional Board) recently issued a draft 2001 NPDES Municipal Stormwater Permit for review and comment. The NPDES permit is reissued every five years and the existing permit expires on July 31, 2001. This permit identifies the waste discharge requirements for municipal storm water and urban runoff discharges within the County of Los Angeles and the incorporated cities (except Long Beach and Santa Clarita). The County of Los Angeles is the principal permittee and the City of Los Angeles and 82 other jurisdictions are co-permittees.

The proposed permit contains the following major new requirements for cities: Public Agency Activities, Programs for industrial/commercial inspections; Standard Urban Storm Water Mitigation Plans (SUSMPs), Implement Requirements for Peak Flow Control, Small Construction Site Requirements, Larger Construction Site Requirements, and Responsibilities of the Principal Permittee.

In their joint transmittal dated June, 13, 2001, the CLA and CARS reports that of the seven new requirements, the City will be most impacted by the Public Agency Activities requirement which contains language that would require all jurisdictions to conduct bi-weekly street sweeping. The existing permit requires a municipality to implement a street sweeping program that sweeps the streets at least monthly, and where feasible, more frequently in areas generating significant refuse. The Bureau of Street Services sweeps approximately 40% of the City's 13,100 curb miles of paved dedicated streets weekly and the remainder once a month. In commercial areas where persistent litter is a problem, the streets are swept weekly or daily. The annual current cost for the street sweeping activities is approximately $7.5 million of which $4.9 million is paid from the Stormwater Pollution Abatement Fund (SPAF). The current discretion given to municipalities allows the City of Los Angeles to provide street sweeping services more frequently in areas that generate more debris and less sweeping in areas that are less populated.

The CLA and CARS further report that bi-weekly street sweeping will increase the City's cost by an additional $4.6 million annually, $3.6 million in staff costs and $985,334 in expense costs. Additionally, a one-time capital cost for the purchase of additional street sweeping equipment is estimated at around $7 million. The cost to the ratepayer would be an additional charge of $4 a year for the annual costs alone, and the average residential Stormwater Pollution Abatement Charge would need to increase from $23 to $27 a year. This would increase another $7 or more if the equipment was purchased with SPAF funds. Moreover, the South Coast Air Quality Management District's fleet rules require the City to replace its street sweepers with ones that use alternative fuels when new equipment is purchased. The cost of new and upgraded facilities for natural gas sweepers has not been estimated at this time, however, it is expected to be substantial.

The proposed permit states that the increased street sweeping requirement apply until the implementation of a trash total maximum daily load (TMDL) program, which is currently under development for the Los Angeles River and Ballona Creek. Compliance with the trash TMDL will require the City to develop and implement a plan to reduce trash in the waterways. Although difficult to estimate, capital and operation/maintenance cost estimates are in the neighborhood of $900 million for full capture devices. The proposed new permit would require the City to spend millions of dollars to implement bi-weekly street sweeping, which will be necessary only until the trash TMDL is finalized.

The Regional Board has issued a schedule that states that there will be two more draft permits; a second draft of the permit will be issued on June 26, 2001 and a final draft will be issued on September 6, 2001. The proposed adoption date by the Regional Board is scheduled for October 25, 2001.

At its regular meeting held June 20, 2001, the Environmental Quality and Waste Management Committee Chair discussed this matter with City staff. The CLA reported that the Fire Department was seeking an exemption to the storm drain discharge prohibition requirements to allow the continued practice of washing down residual blood from trauma scenes. The CLA reports that data from the Los Angeles County Department of Health Services indicates that the small amounts of fluid from this practice will have no negative health effects. The Chair asked staff to explain why their recommendation was to delete the requirement regarding Peak Flow Control when their report indicates that they were uncertain about the intent. The Chair suggested that, procedurally, staff should first seek clarification regarding the requirement prior to taking a position on it.

The Environmental Quality and Waste Management Committee Chair concluded his consideration of this matter and recommended that Council approve the recommendations of the CLA and OARS as amended. The Chair recommended that Council request a clarification of the new Peak Flow Control requirements for all development that drains to soft-bottom channels, rather than approving staff's recommendation to delete them. The Chair further recommended that Council request an exemption to the Storm Drain Discharge Prohibition requirements to allow the washing down of residual blood from trauma scenes, as requested by the Fire Department. This matter is now submitted to Council for consideration.

Respectfully Submitted,

Council Member Mark Ridley-Thomas, Chair
Environmental Quality and Waste Management Committee

AA
6/20/01
#011020

ADOPTED
MOTION ADOPTED TO APPROVE COMMUNICATION RECOMMENDATION
JUN 27 2001
LOS ANGELES CITY COUNCIL

FORTHWITH TO THE MAYOR

Mayor With File

R0002315

Mayor's Time Stamp

RECEIVED
'01 JUN 2[illegible]

FORTHWITH

City Clerk's Time Stamp

[illegible] 2001 JUN 29 P 2:50
CITY CLERK
BY [illegible]

SUBJECT TO MAYOR'S APPROVAL

COUNCIL FILE NO. 01-1020 COUNCIL DISTRICT NO. _____

COUNCIL APPROVAL DATE June 27, 2001

RE: DRAFT 2001 NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) MUNICIPAL STORMWATER PERMIT

RECEIVED
CITY CLERK'S OFFICE
2001 JUN 29 PM 4:29
CITY CLERK
BY [illegible]

JUL 09 2001

LAST DAY FOR MAYOR TO ACT _____
(10 Day Charter requirement as per Charter Section 341)

DO NOT WRITE BELOW THIS LINE - FOR MAYOR OFFICE USE ONLY

APPROVED ✓

*DISAPPROVED _____

*Transmit objections in writing pursuant to Charter Section 341

JUN 29 2001

DATE OF MAYOR APPROVAL OR DISAPPROVAL _____

MAYOR

R0002316

COUNCIL VOTE

27-Jun-01 12:57:03 PM, #21

ITEM NO. (39)
Voting on Item(s): 39
Roll Call

BERNSON	Absent
CHICK	Yes
FEUER	Yes
GARCETTI	Yes
HERNANDEZ	Yes
HOLDEN	Yes
MISCIKOWSKI	Yes
PACHECO	Yes
PADILLA	Yes
RIDLEY-THOMAS	Yes
SVORINICH	Absent
WACHS	Absent
WALTERS	Absent
*GALANTER	Yes
	Absent

Present: 10, Yes: 10 No: 0

MAY 1 5 2001

MOTION

Any official position of the City of Los Angeles with respect to legislation, rules, regulations or policies proposed to or pending before a local, state, or federal governmental body or agency must have first been adopted in the form of a Resolution by the City Council with the concurrence of the Mayor; and

The Los Angeles Regional Water Quality Control Board recently issued a draft National Pollution Discharge Elimination System (NPDES) Municipal Stormwater Permit for review and comment; and

The County of Los Angeles is the principal permitee and the City of Los Angeles and 83 other jurisdictions are co permitees of this permit; and

This permit identifies the waste discharge requirements for municipal storm water and urban runoff discharges within the County of Los Angeles and the incorporated cities (except Long Beach and Santa Clarita); and

It is critical that the City monitor the various regulatory actions and provide input to ensure that federal, state, and regional programs integrate with one another, are reasonable, include appropriate source control by state and federal agencies, and are consistent with the City's water quality improvement goals and policies; and

The City supports the implementation of programs that reduce water pollution and protect the beneficial uses of the region's water bodies; and

The City must ensure that water pollution control strategies and mandates can be realistically and cost efficiently implemented and funded, result in real water quality benefits, and successfully integrate with other environmental mandates and considerations.

NOW, THEREFORE, I MOVE that by adoption of this Resolution, the Office of Administrative and Research Services (OARS) and the Office of the Chief Legislative Analyst (CLA) are directed to prepare a report for the Environmental Quality and Waste Management Committee on the following issues regarding the draft 2001 NPDES Municipal Stormwater Permit:

1. The City of Los Angeles' role in formal discussions with the Regional Board, along with the Principal Permitee and the Watershed Management Committee representatives on the Executive Advisory Committee (EAC), regarding stormwater quality management plan implementation, monitoring and reporting;
2. The cost and appropriateness of an increased street sweeping program and its connection to the upcoming Trash Total Maximum Daily Load (TMDL) program;
3. New obligations assigned to the cities for additional inspection and enforcement activities on industrial/commercial and construction sites and appropriate permit fees funding;
4. A proposed new inspection program timeline and its consistency with the upcoming Los Angeles Standard Urban Stormwater Mitigation Plan (SUSMP) requirements; and
5. The accurate incorporation of federal and state rules.

PRESENTED BY: _____
MARK RIDLEY-THOMAS
COUNCILMEMBER, CD- 8

SECONDED BY: _____
RUTH GALANTER
COUNCILMEMBER, CD-6

R0002318

Public Works Department 3621 Bell Avenue Manhattan Beach, CA 90266-4795
Telephone (310) 802-5300 FAX (310) 546-1752

May 14, 2001

Mr. Dennis Dickerson
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Dear Mr. Dickerson:

ADDITIONAL COMMENTS ON DRAFT NPDES PERMIT

As a member or the Ballona Creek Watershed Committee, the City of Manhattan Beach concurs with the questions and comments submitted earlier by the watershed. In addition to the comments compiled and submitted by the Ballona Creek Watershed cities, the City of Manhattan Beach has the following comments and concerns:

A general comment is that the draft permit adds numerous detailed responsibilities, which cannot be absorbed into the current heavy workload of City staff. The number of inspections, reports; revisions to codes, General plan, and CEQA documents with follow up reporting to the Board is staggering. The administrative burden created by this draft permit without a funding mechanism will likely result permit compliance failure and in ultimate NPDES program failure. The Co-permittees need an opportunity to talk with Board staff to address the concerns created with the new permit.

In addition, we have the following comments.

1. Under the Findings Section. It clearly spells out the pollutants of concern and that "Permittees can implement control measures to reduce entry of these pollutants into the storm water...". However, no mention is made of "source reduction", i.e., reducing the compounds at the source which is primarily from the products of a modern society. In other environmental regulatory efforts such as solid waste and air quality programs source reduction is a fundamental and primary thrust of the regulations. We continue to voice our strong concern that the NPDES regulatory effort fails to attack the source of the pollutants in any meaningful way. There are many options for legislation and rule making which could, at least, require the manufacturers and vendors of the products which produce the violating compounds, to pay for some of the clean up and control measures referred to in the draft permit, if not reduce or eliminate the offending products. We continue to believe that placing the entire responsibility for stormwater clean up with the owners of the stormwater conveyance systems is futile. Unless and until funds are available for full stormwater treatment facility construction and operation, the current program of behavior modification, good housekeeping, and structural BMP's will have minimal affect on the problem at best.

2. Administration of the programs and requirements of the proposed permit are potentially very significant in cost. The current City budget does not anticipate many of the costs associated with programs required by the draft permit. State laws such as Proposition 13 (1979) and Proposition 218 severely limit the City's ability to raise funds for property related services. It is recommended that the Regional Water Quality Control Board and the State Water Resources Control Board, through their sphere of influence, request State legislation which will provide funding to permittees, or at least, enable permittees to assess business owners and other property owners for their fair share of the pollutant loading to the receiving waters. This could be done with an assessment based on a combination of land use and business code. This is a key missing piece of the solution to stormwater pollution.

3. Finding 42. This finding states that "...a ministerial project may be made discretionary by adopting local ordinance provisions that create decision-making discretion." While this may be theoretically possible, it is not a political reality.

4. Section C. 10. Why has the Mitigation Funding provision been added back to the SUSMP section of the permit? It was removed from the original SUSMP provisions.

5. Part 4. Section 2. Programs for Business. Smaller agencies simply will not be able to provide this "open ended" service. This is an area that should be addressed at the State level. A State business assistance program would be better to assure a consistent message is received by participating businesses.

We appreciate the opportunity to comment on the draft permit. Please accept these additional comments for your consideration in processing the new permit.

Sincerely,

Neil Miller, Director of Public Works

Cc: Geoff Dolan, City Manager
Robert Wadden, City Attorney
Richard Thompson, Director of Community Development

City of Maywood
4319 East Slauson Avenue • Maywood, California 90270
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May 16, 2001

Mr. Dennis Dickerson
Executive Director
Regional Water Quality Control
Board – Los Angeles
320 W. Fourth Street, Suite 200
Los Angeles, CA 90013-1105

Subject: Review Comments on Draft Los Angeles County Storm Water and Urban Runoff Permit

Dear Mr. Dickerson:

Thank you for the opportunity to comment on the April 13, 2001, Draft Municipal Storm Water Permit. This permit will have a significant impact on the daily lives of the residents and businesses of Los Angeles County. A large percentage of the economy of Los Angeles County is tied to tourism at the beaches along the coast and at the inland lakes and streams. It is in everyone's best interest to protect these resources.

The Regional Board must recognize the limited resources available at the municipal level to support these programs. The Clean Water Act (CWA) establishes a Maximum Extent Practical (MEP) standard for Storm Water Permits. This permit, in several areas, attempts to apply numeric standards to Municipal Programs. The application of numeric standards will make compliance with the permit impossible for the municipalities and subject them to numerous citizen lawsuits.

While we recognize the importance of the CWA and the intent of this draft permit, we must also address the cities' ability to comply with the requirements without exposure to unnecessary liability. The following comments reflect the cities' desire to comply with the CWA and the Regional Water Quality Control Board's (Board) permit. Where suggestions are made, they are intended to provide the Board with alternative wording that we believe will comply with the MEP intent of the CWA. The Board will receive many comments from lawyers and others familiar with the statutory requirements of the CWA. My comments will focus on the affect of the draft permit on the cities of Los Angeles County.

1. Part 2. Receiving Water Limitation sections 1 and 2. Section 1 is so broad that the cities and the County will face liability for "cause(ing) or contribute(ing) to the violation of water quality standards or water quality objectives". Section 2 will pose the threat of liability for "cause(ing) or contribute(ing) to a condition of nuisance. These two provisions must be revised to allow the cities and the County to operate the Municipal Separate Storm Sewer System (MS4) without fear of litigation from NRDC or other environmental groups for minimal impacts on water quality. Each and every resident of Los Angeles County depends on the MS4 to protect our homes and businesses from the real threat of flooding. The system has been built up over the years to efficiently carry storm runoff to the ocean. To convert this system to a full treatment system will take years. The Board cannot leave the cities and County open to litigation if you expect the improvements to be accomplished.

2. Part 3G(n). Legal Authority for inspections, surveillance and monitoring of Industrial, Commercial and Construction sites. This paragraph is overly broad. Cities and the County have the authority to investigate violations of law. Normally this occurs when the Police Department or the District Attorney is notified of a violation. These agencies are trained to conduct investigation and have the legal support to obtain the needed warrants to capture private records. These techniques are generally reserved for cases of some significance. Unfortunately, police agencies and prosecutors have not been convinced that discharges to the MS4 are important enough when they compare it to their workload involving thieves and murderers. Thus, it is not sufficient to ask cities and the County to certify to their legal authority, because the authority is granted by the State Judicial system. The greater question that should be asked is "has the crime been elevated to the degree needed to cause enforcement by local authorities." In extreme cases it is likely that the effort will be made, but for most incidents it is unlikely that any action will be taken to investigate or enforce minor illegal discharges.

   This section will be used to convict cities and the County of violating the Storm Water permit due to lack of detailed investigations and prosecutions. This will not be difficult to prove. We do not believe that the Board should be creating regulations that will subject the cities and the County to broad liability.

3. Part 3G(p). Adopt and implement an agency-specific storm water and urban runoff ordinance. The requirement of this paragraph that the ordinance be "effective immediately upon the adoption of this Order." This requirement is not practical. Cities and the County have a procedure to adopt ordinances. These procedures are derived from State Law that governs City and County authority. We must conduct public hearings before an Ordinance imposing restrictions on property rights can be adopted to allow the public to provide input to the process. Then unless there is a significant public health and safety concern involved, the ordinance will take effect thirty (30) days after the second reading of the ordinance. Thus, the requirement that the cities and the County adopt a new ordinance and have it effective upon the

approval of this order is impossible. I would suggest that a 180 day schedule be specified like the Board imposed for the SUSMP provisions.

4. Part 4A(2)(b). Business Assistance Program. While the principal involved with the Business Assistance Program is good, as currently written the program is flawed. The first problem is in the definition of a small business. Any business that has 99 employees is not a small business. To pay these employees even at minimum wage, the business must have significant revenue. I believe that the number of employees must be reduced to "less than 25 employees" or the business must be tied to actual revenue, say less than $1,000,000 in gross revenue. By setting the size of a small business at one of these levels, the cities and the County will not be assisting businesses that can afford to obtain assistance on its own. The cities and the County have already offered to assist businesses that may not have a clear understanding as a result of the Educational Site Visit program. In most cases the offers were not well received. The businesses often treated the contact as an attempt to penalize the businesses rather than to help deal with the Storm Water Issue. The second issue with the program is the provision that states that the program "shall be a confidential and non-enforcement program." In most cities the ability to have two separate departments, one to assist businesses and another to enforce the regulations, will be impossible. Thus, the city employees charged with helping the businesses in a non-enforcement manner will likely be the same people that will visit and investigate violations of the business. I would suggest that the first visit be designed to assist the business to understand the program. Any future visits will involve enforcement that will then become progressively more severe. Without the ability to implement the program in this way the cities and the County will lack credibility when enforcement is required.

5. Part 4B. Programs for Industrial/Commercial Inspections. This part of the permit is the most objectionable part of the draft permit. This attempt by the Board to transfer its obligation to inspect and enforce against Phase I Industries and State Construction Permits without transferring the source of and the authority to collect revenue is unacceptable. It is clear to all cities and the County that the State has not adequately funded the inspection part of the NPDES program. If the State were to adequately fund the program they would have to include employees to perform the plan review, inspectors to train and to verify compliance in the field and prosecutors to enforce against violators. These are the same provisions that the Board is expecting the cities and the County to implement, yet the Board does not implement the same programs.

   As a City agent I do visit sites to verify compliance with State and Local Building Codes and other regulations to ensure that the Health and Safety of the public. But, for the Board to require that the cities and the County take over its responsibilities and liabilities because the Board will not adequately fund the program is

unacceptable. Until complete and adequate funding is provided, the cities and the County must insist that this provision be removed.

6. Part 4B(4). BMP Implementation. This section is vague and contradictory. The first paragraph starts by saying that the City "shall require the implementation of the designated minimum BMP's, as approved in Resolution 98-08, at each industrial/commercial site within its jurisdiction." While this will be a formidable task by itself, the paragraph then ends by requiring the Permittee's "shall also implement or require any additional site specific BMP's ... which are more stringent than those required under the Statewide General Industrial Permit." This requirement I find confusing when I review the Permit. The General Industrial Permit does not cover all Industrial/Commercial businesses in my town. So as I read this requirement, I am required to impose harsher standards on non-regulated industry than the State would have the authority to impose on the Phase 1 industries identified in the CWA. I question if the Board has the Legal Authority to accomplish this requirement, much less force the permittee's to impose these standards. The other question that this requirement raises relates to the conditions that would trigger these harsh requirements. It is not clear if I am to impose this harsh standard on all of my business, or just those few that I deem to be gross violators. I believe that without clear requirements the City would stand little or no chance of prevailing against a court challenge.

   I would recommend that the Board revise this requirement to limit the city obligations to the requirements of Resolution 98-08.

   The second paragraph requires the Permittees to "implement, or require implementation of, additional controls for Industrial/Commercial sites tributary to CWA section 303d impaired water bodies ... as necessary to comply with this order." The paragraph also requires the cities to impose additional standards on Industrial/Commercial sites within or directly adjacent to or discharging directly to coastal lagoons or environmentally sensitive areas. Both of these requirements are vague as to intent and are impossible to enforce on businesses that may have been operating in the same location for twenty or more years. These businesses are going to ask, and rightly so, what proof the Permittees have to justify the imposition of new operating restrictions.

   I believe that the section, as written, is unenforceable and will be overturned in Court action. Since the City is damned if it imposes the requirement and damned if it fails to impose the requirement, each Permittee looses this battle. This section must be written with some justification for its inclusion in the permit.

7. Part 4B(5)d. Regional Board Inspection Coordination. This section states that if the Regional Board has performed an inspection of an Industrial/Commercial site the Permittees do not need to inspect that site. The section leaves unsaid how the coordination will happen between the Permittees and the Board. If the Board is to conduct an unannounced inspection of an Industrial/Commercial site they must follow up within a set time with a notice to the Permittee that the inspection has taken place. I also believe that the Permittee should be notified of the Board findings so that problem businesses can be monitored.

8. Part 4C(3)b. Board Revisions to the SUSMP Projects. I must request clarification on the change made to the Hillside Residential property. As written, item b(1) states that single-family hillside residential developments of "10,000" square feet or more. I have heard Permittees describe this as 10,000 square feet of disturbed area or 10,000 square feet of lot area. It is unclear how the Board intends this provision to be enforced. Clarification is required.

9. Part 4C(8). Redevelopment Projects. The wording used in this section does not agree with the definition of Redevelopment as contained in the definitions in Part 5. This section must be revised to match the Definition since the definition was established by State Board Action on the SUSMP Petition.

10. Part 4C(12). General Plan Update. As noted at the Board Workshop on April 24th the requirement for every City to modify its general plan to reflect Storm Water Quality issues will take longer than 540 days (18 months) allowed in the permit. I believe that the Board must participate in a workshop with Planning Directors from all Permittees to establish the elements of the general plan that must be revised. Through this process all Permittees will perform the revisions correctly the first time rather than have to correct a flawed document. State Law limits the number of times that the General Plan can be modified in any one-year. The Permittees need to identify all elements that will be affected before contracts are issued for these amendments. Once the workshop is held, the Board should then allow not less than three years for Permittees to budget for and complete the General Plan Update.

11. Part 4E(1). Dry Weather Diversions. The Board has provided detailed requirements for all Public Agency activities except dry weather diversions. It is not clear if the Board is requiring all Permittees to implement a dry weather diversion program or if the Board is only mentioning this as a possible Public Agency activity. In either case it appears that the Permittees should be provided with direction from the Board on its intent on dry weather diversion. If there are no specific requirements this subgroup should not be listed at all.

12. Permit Wide Requirement. Throughout the Permit the Board includes requirements that the Permittees maintain computer records of a wide variety of activities. Without standards for the design of these data bases the County as Principal Permittee will get information that is in any number of formats. Not all Permittees have the same computer system support and few Permittees have GIS capabilities. The Board should mandate that the Principal Permittee develop an application that contains all of the data that the Board wants collected. The Principal Permittee should then be required to supply the application to the Permittees. Through this means the Permittees will provide information that is uniform and transferable.

The comments included above do not represent all of our concerns about the draft permit. But, due to the limited time available to conduct this review the important areas have been highlighted. At this point I understand that the Permit will not be presented to the Board until September or October, depending on the Boards schedule. I understand that the Board cannot negotiate with each Permittee individually, however I hope that the Board will address these issues by incorporating the requested changes. Permittees support the Clean Water Act and the Boards desire to clean up the waters of Los Angeles County. However the resources available to implement new regulations are not unlimited. The Board will get cooperation if they propose a practical permit based on MEP Technology. Any permit based on numeric limits will not be supported and will only lead to Board fines and legal actions challenging the proposed permit.

If you would like to further discuss this issue or have any questions, please contact me at (562) 908-6214.

Sincerely,

CITY OF MAYWOOD

William C. Pagett, P.E.
City Engineer

Copy: City Manager
City Council
City Attorney

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06-130

City of MONROVIA 1887

415 South Ivy Avenue Monrovia, California 91016-2888

Mr. Dennis A. Dickerson
Regional Water Quality Control Board – LA
320 W. 4th Street, Suite 400
Los Angeles, CA 90013

City of MONROVIA

1887

All-America City

Department of Public Works

May 15, 2001

Xavier Swamikannu
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Re: Comments – First Draft LA County Municipal Storm Water NPDES Permit

Dear Mr. Swamikanu:

Thank you for the opportunity to comment on the First Draft of the LA County Municipal Storm Water NPDES Permit. The solicitation of input from all permitees and other interested parties is critical in attaining a permit that will be acceptable, and continue to insure protection of the beneficial uses of all receiving waters in the Los Angeles Basin. It should be noted that the revised permit is a substantial improvement from the current permit, as it provides better clarification in certain areas. As with any "draft permit, there is always room for improvement, and in response to your request, the following are comments on the draft permit ("permit").

Federal, State and Regional Regulations (Pg. 8, No. 31)

There appears to be a discrepancy concerning the interpretation of the State Board's decision concerning approved requirements for new development and significant redevelopment projects in the SUSMP. Based on the State Water Resources Board's recent decision, ministerial projects, projects in environmentally sensitive areas (ESAs), and retail gasoline outlets were removed as categories subject to SUSMP requirements. However, the last sentence in this section places these categories back into the NPDES permit. This sentence should be deleted.

Receiving Water Limitations (Pg. 13, Item 1 & 2)

The City is concerned with this language and instead prefers the existing permit language. As an alternative, remove the following provisions as mentioned by the Principal Permittee:

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- Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited.
- Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance.

The City objects to the proposed permit language because it does not allow implementing the permit and its programs as a means of achieving compliance with water quality standards and objectives. The language immediately places all permittees into non-compliance, and has the potential to expose all permittees to third party litigation. This language also seems to undermine the whole purpose of the permit, which is to accept some exceedances of water quality standards/objectives (as contained in the Los Angeles Basin Plan) provided that permit conditions are met. It is simply impossible for any municipality to prevent all discharges that cause or contribute to the violation of water quality standards or objectives.

Legal Authority (Pgs. 19, 1(m & n)

Under these subsections it states, permittees are required to control the contributions, or potential contributions of pollutants in discharges of storm water runoff associated with industrial facilities.... and control the quality of storm water runoff from industrial sites.

The definition of "industrial sites" needs to be clarified to exclude those industrial sites currently under the responsibility of the State. Alternative language could read ...."runoff associated with industrial facilities (excluding industrial sites under the jurisdiction of the State).

Secondly, permittees are being requested to possess legal authority to enter, sample, inspect, review.... industrial facilities discharging polluted or potentially polluted runoff into the MS4. There is a serious concern with this requirement. Many municipalities proceed with caution when the possibility of entering private property under its own jurisdiction is an issue. As there are legal requirements for such actions (obtaining a warrant), it becomes more problematic to inspect and enforce at an industrial facility that is under a permit issued by the State. Cities and Counties do not posses this legal authority.

If the expectation is for municipalities to undertake this responsibility, we would appreciate some technical assistance to in developing such authority. However, we prefer that the inspection of State industrial facilities be removed.

Outreach and Education (Pgs. 22-23)

School District Education

The permittees are being asked to provide educational materials, in various media forms, to all School Districts within its jurisdiction in order to educate a minimum of 50% of all school children (K-12) every two years. While the City concurs that constant outreach and education is important in order to continue to raise storm water pollution prevention awareness, a 50% minimum requirement to educate all school children can prove to be difficult and costly.

Different grade levels require different materials suitable to reach the target audience, this results in having to create separate materials for each group or several clusters of groups. This could result in unknown personnel resources expended and substantial costs to comply with this requirement. Under the current permit, the Principal Permittee has assumed responsibility for this task. Utilizing flood control funds, it has visited every subject school in every city and unincorporated areas of Los Angeles County. If the Principal Permittee agrees to continue performing this task as a means of satisfying this new requirement, the City has no objection to this requirement. However, if the Principal Permittee decides not to assume this responsibility, this requirement requires modification, including the elimination of the numeric requirement.

Business Assistance Program

Permittees are being requested to develop and implement a confidential program to assist small businesses that meet certain criteria, with understanding and complying with storm water regulations. Such assistance includes: (1) On site technical assistance; (2) availability, distribution and discussions of applicable BMPs; and (3) access to information concerning environmental consulting services.

While this program contains merit, the proposed new task is problematic because it expands the commercial facilities category from facilities that are known potential pollutant contributors (i.e., gas stations, automotive facilities, etc), to include any business that have less than 100 employees, lack funding for private consulting, lack expertise necessary to understand and comply with storm water regulations, and have requested assistance or was referred through the industrial/commercial inspection program.

This expansion could include business, such as consulting agencies, tailor shops,

barbershops, and hundreds of others that can be questionable as pollutant generators. This new requirement would be extremely costly to cities, and is suspect to the justification on why it is necessary to perform outreach to these types of businesses.

It is recommended that this requirement be removed, or that adequate funding be provided to the permittees to implement this program.

Programs for Industrial/Commercial Inspections (Pgs. 25-28)

The "permit" proposes to require permittees to conduct inspections and if necessary, to take enforcement action against all Industrial/Commercial facilities including:

- industrial facilities subject to General Industrial Activity Storm Water Permit (GIASWP) requirements
- constructions sites subject to General Industrial Activity Storm Water Permit (GCASWP) requirements

The Regional Board staff's current opinion is that municipalities are "ultimately responsible for the quality of storm water discharges to the MS4", including those discharged from GIASWP subject-facilities and GCASWP-subject construction projects.

However, many municipalities disagree with this position. The proposed requirement would impose additional cost burdens on municipalities. This is unfair given that: (1) the State Water Resources Control Board (SWRCB) and, by extension, the Regional Board, have already assumed responsibility for this task; and (2) the State collects fees from subject industrial facilities and construction sites.

Addressing the position that municipalities are responsible for discharges to the MS4 from GIASWP-subject industrial facilities and GCASWP-subject construction projects, it appears that an oversight of the fact that the state has elected to regulate discharges from industrial facilities and certain construction projects (i.e., those that disturb 5 acres or more or soil disturbance) just as it has elected to regulate discharges to the MS4 from municipalities.

Additionally, the "permit" calls for inspections to insure compliance, implementation of pollution prevention methods including requiring its use by industrial/commercial facilities, source identification databases, BMP implementation including requirements of business to also implemented applicable BMPs, reporting requirements, and other programs and procedures.

Not withstanding the disagreement on ultimate responsibility over GIASWP and GCASWP-subject facilities/projects, upgrading the current program to this proposed "inspection/enforcement" program will result in costly impacts to the County and municipalities. Many permittees currently have limited resources (i.e., staffing, funding) to assume such a comprehensive addition. Expanding the scope of inspections will have a significant impact on personnel resources to comply with this requirement. This may necessitate hiring of additional personnel that many municipalities may not be able to undertake at this time.

Secondly, as the definition of "commercial" business appears to have been expanded, this will result in expanding this program to businesses that may be considered questionable for necessitating such inspections and requirements. Unless funding is proposed for the permittees, this expansion should be removed or revisited to discuss cost effective alternatives.

Programs for Development Planning (Pgs. 29 – 35)

Elimination of Discretionary Approval from the SUSMP Evaluation Process

The new permit proposes to remove "discretionary approval" as an important criterion for determining if certain categories of projects and redevelopments would be subject to Standard Urban Storm Water Mitigation Plan (SUSMP) requirements. Currently, a project is subject to SUSMP requirements if it is one of the 8 types of development projects/redevelopment projects and if it is subject to discretionary approval (i.e., CEQA clearance, conditional use permit, or other action involving the subjective judgment of a municipal official).

During the SUSMP hearings, an attempt to remove discretionary approval was undertaken in March of 2000. That attempt was immediately challenged by a coalition of cities that resulted in the restoration of discretionary approval by the State Water Resources Control Board. Most cities still want to retain discretionary approval to enable them not to require costly and questionably effective infiltration/treatment controls unless there is a compelling reason to do so. The City is aware that the Regional Board's attempt to eliminate discretionary approval was motivated by the understandable need to "close a loophole" that enables cities to exempt subject projects from all SUSMP measures by simply not requiring them to undergo discretionary approval (e.g., a coincidental EIR or mitigated negative declaration).

There is, however, an alternative to these extremes. Although the City is opposed to

eliminating discretionary approval it may consider:

- Requiring the 8 categories of projects to be subject to all SUSMP measures except infiltration or treatment controls, which would remain discretionary. This means that (a) general mitigation measures (e.g., not increasing peak runoff from pre-development levels, protecting slopes and channels, etc.) and (b) use-specific mitigation measures (e.g., canopies for gas stations, and runoff control design requirements for wash areas, service bays, and loading docks, etc.) would be prescribed for all subject projects.

- Requiring infiltration/treatment controls (designed to meet the .75" or other numeric standards), only when the chemical constituents contained in runoff from the completed project would have impairing a beneficial use of a receiving water as determined by its listing as pollutant on the 303(d) list of impaired water bodies.

To require non-discretionary project to also become subject to the SUSMP requirement would create undue burdens on those projects that will have minimal impacts to storm water pollution, and possibly create problems in the area of development of affordable housing.

Addition of Previously Removed SUSMP Categories

The proposed "permit" also attempts to include those categories (Retail Gasoline Outlets, Restaurants, Projects in Environmentally Sensitive Areas) previously removed by the State Water Resources Board as a result of the challenge of coalition of cities. During the challenge process, many municipalities expended a considerable amount of staff resources and funding to raise their concerns with these categories within the SUSMP program. These concerns remain the same, and these categories should be removed from the "permit". Permitees continue to work to mitigate storm water in these categories without having to institute costly and unnecessary measures.

Addition of Mitigation Funding

The proposed permit also attempts to reinstate the establishment of mitigation funding mechanism within the SUSMP process. During the discussions of the SUSMP program, the municipalities expressed concern over the establishment of this type of funding mechanism. The administrative and cost burdens that would be created to incorporate and manage this kind of program has been presented and as a result, this

item was also removed by the State Board. This item should also be removed from the permit.

General Plan Amendment

The "permit" proposes to require municipalities to incorporate "watershed and storm water quality and quantity management considerations no later 540 days from the permit adoption date." The current permit requires this element to be incorporated into General Plans when they are updated.

The need to update municipal General Plans to include a storm water quality element has always been unclear. It appears the SUSMP program has negated the need for a General Plan storm water quality element because the SUSMP requires the prescription of controls for new developments and redevelopment projects that operate to minimize post-construction runoff pollution. As a result, why is a storm water quality element needed, especially if the need is being addressed and considering most municipalities may already be fully developed?

Unless the Regional Board staff can justify the purpose of adding a storm water quality element addition to General Plans, this requirement should be removed.

Program for Construction Sites (Pgs. 36 – 39)

Lowering the Limit for Local SWPPPs

The "permit" proposes to lower the limit for requiring local SWPPPs (Storm Water Pollution Prevention Plans). Currently, local SWPPPs are required from construction projects that are expected to cause a soil disturbance of 2 to under 5 acres, by grading, clearing, and or excavating. The proposed permit would lower this threshold to between 1 acre and under 5 acres.

Lowering the threshold here seems to be associated with the change in Phase II municipal NPDES regulations. In 2003, the threshold for construction sites requiring General Construction Activity Storm Water Permits (GCASWP) will be lowered from 5 acres to 1 acre. Apparently, Regional Board staff believes that this should have corresponding affect on the next level of construction requirements. The City disagrees with this rationale. The reason the existence of SWPPPs is to enable inspection/enforcement personnel to determine compliance with BMPs that are intended to: (1) reduce sediment and chemical constituent discharges to the MS4; and (2) certify

that no illicit discharges would be released to the MS4.

For larger construction sites, a SWPPP is necessary because of the time it would take for inspection personnel to do a walk-through. However, for smaller construction sites, this really is not a problem. Inspection personnel can easily identify if basic BMPs that really do not require SWPPPs are in place. Thus, to require permittees to require local SWPPPs for projects even less than 2 acres would be a burden on personnel resources and funds where there is no need. Given that the threshold for determining GCASWP construction sites will be lowered in 2003 from 5 acres to 1 acre, and that the current permit requirement of prescribing minimum BMPs to construction sites of 2 acres and under has been effective, there is no reason modify with the requirement at this time.

The "permit" should maintain the current soil disturbance requirement for local SWPPPs (2 and 5 acres) until 2003 when 1-plus acre projects will require GCASWP coverage.

Education/Training for Contractors

The "permit" requires the permittees "implement an education program to discuss storm water pollution prevention and controls at construction sites and distribute educational materials targeted to the construction community during meetings, workshops, pre-construction meetings, and inspections."

The current requirement is to provide over-the-counter developer/contractor information regarding development construction requirements. While the City concurs that continual education of the construction and development community is vital to ensuring the elimination of potential pollutants from construction sites, the additional requirement is unnecessary and would impose additional unnecessary costs on cities. Currently, communicating construction program requirements to contractors/developers is a simple task, it involves:

- providing, over-the-counter, written materials and verbal information regarding requirements associated with the three categories of construction projects
- providing a list and description of construction-related BMPs.

The draft permit proposes additional tasks that accomplish the same thing, but in more elaborate and costly terms. This requirement should be removed as it would not augment the City's ability to inform contractors/developers of their obligations under the municipal NPDES permit.

Public Agencies Activities (Pgs. 39 – 45)

Vehicle Maintenance /Material Storage Facilities/Corporate Yards Management

The "permit" purposes that each municipality for each corporate yard covered under Phase I of the Federal Storm Water Regulations, shall obtain a separate coverage in a State California General Industrial Activities Storm Water Discharge Permit (except for cities under 100,000 in population need not file until March 10, 2003). In addition, after March 10, 2003, permitees shall also attain the same coverage for public construction sites 1 acre or greater.

If permittees are being required to obtain separate coverage for the above listed projects, the State should waive all fees associated with issuance of a separate permit, as this will create additional administrative time and cost for cities to file for separate coverage.

Storm Drain Operation & Maintenance

The draft permit proposes to increase the frequency of clean-outs of priority catch basins (40% full) from once a year, just prior to the wet season (October 1 to April 30), to twice a year, from May 1 to September 30 (during the dry season).

It appears that the justification for this requirement is based on the fact that the Ventura permit (adopted in June of 2000) currently includes it. Increasing the frequency does not make sense. Whether a catch basin is full at any level during the dry season is not an issue, because trash and other material trapped in it are not going to enter into receiving water. The hydraulic mechanism required for transporting is not present (with the exception of a rare storm event). This is why, historically, catch basin clean-outs are done just before the wet season. While storm events during the dry season do occur from time-to-time, they are so rare as to warrant imposing such an additional expense on municipalities.

This requirement should be removed as it may have little impact reducing trash discharges to the receiving water. Additionally, the zero trash TMDL for Los Angeles River and Ballona Creek watershed-resident cities would make this requirement unnecessary, and also denies permittees the option of resorting to more cost-effective trash reducing BMPs.

Streets and Road Maintenance

The "permit" proposes to increase the frequency of street sweeping to at least 4 times per month "in areas generating high volumes of trash and "an average not less the twice per month in areas that generate moderate volumes of trash on traffic collector streets and residential areas."

The current permit calls for a minimum of sweeping once a month. Street sweeping is essentially a trash-reducing BMP. Given the cost associated with increased street sweeping, and that there are less expensive trash-mitigation BMPs available, this additional requirement should be eliminated.

Parking Lots

The "permit" proposes to increase the frequency of parking lot cleanings from once a month to twice a month. Under the current permit, only parking lots with 25-plus spaces are subject to monthly cleanings. The scope of this requirement is enlarged to include every municipal parking lot, regardless of size, and increases the cleaning and inspection frequency from once a month to twice a month.

The justification for making this requirement more stringent is not clear. Have there been scientific studies that have concluded parking lots have been substantial pollutant contributors to receiving waters?

This additional requirement should be removed, as it will result in additional costs to many municipalities, unless data can be provided to show that an increase in parking lot cleanings from once a month to twice month would improve receiving water quality.

Definitions (Pgs. 46 – 54)

The definition of "Environmentally Sensitive Area" appears to have been expanded. The definition should be modified to the version submitted by the Principal Permittee (County of Los Angeles).

The definition of SUSMP should be revised to read:

means the Los Angeles Countywide Standard Urban Stormwater Mitigation Plan. The SUSMP shall address conditions and requirements of ~~new~~ *planning priority* development *and redevelopment projects*

Other Changes to the Permit

Meet and Confer Process

The "permit" lacks reference to the meet and confer process present in the current permit (Administrative Review). This provision is intended to resolve compliance issues prior to a Regional Board enforcement action. There are occasions when compliance could be the result of misinterpretation or misunderstanding on the part of staff.

The meet and confer provision is intended to allow the resolution of disagreements as a result of misinterpretations or misunderstandings before issuing Notices of Violations, then ultimately an enforcement action. Since there is the possibility that the final approved permit will contain provisions that are open to interpretation, the meet and confer process must be retained. To utilize the State's Enforcement policy (Order 96-030) will possibly create adversarial relationships between the permittees and the Regional Board.

We request that the Meet and Confer process remain in the permit.

Program Implementation Time Frames

In the proposed "permit", permittees are being requested to implement/revise many additional programs in each of the program elements. The proposed 180 day time frame is not a sufficient amount of time to properly revise and implement each of the revised programs because of budgetary and personnel constraints for many of the permittees.

Many cities contain small numbers of staff that are responsible for the NPDES program in addition to other duties assigned to them. The revised requirements take time to create/modify, train applicable employees and implement. The proposed time limit would more than likely not be met. Additionally, most cities require a minimum of one year of advanced time to budget for new costs. Some cities need two years.

We respectfully request a revision of the 180-day implementation time frame.

Limited Use of the Maximum Extent Practicable (MEP) Language in the Permit

The "permit" references permittees to maximize or minimize various discharges potential pollutants within some of the program elements, without use of the Maximum Extent Practicable language included within the requirements. Without this reference, permittees are suspect to potential litigation. Please refer to comments submitted by the Principal Permittee as to the appropriate locations to include the MEP language.

In summary, the City of Monrovia sincerely appreciates the effort and time invested by the Regional Board staff in developing the first draft of the Los Angeles County Municipal NPDES Storm Water Permit. As the permit develops, the City looks forward to continuing to work with Regional Board staff to create permit that is cost effective and efficient to continue to insure protection of the beneficial uses of all receiving waters in the Los Angeles Basin.

Should you have any questions, please feel free to contact me at (626) 932-5544, or Louis Celaya at (626) 932-5577. Thank you for your time and consideration in this matter.

Sincerely,

Louis A. Celaya

For David Fike
Director of Public Works

cc: City Manager

John Harris, Richards, Watson & Gershon

Dennis Dickerson, Executive Director,
Los Angeles Regional Water Quality Control Board

City of MONROVIA 1887

FACSIMILE COVER SHEET

Date: 5-16-01 **Time:**

To: XAVIER SWAMIKANNU **Company** CA REGIONAL WATER QUALITY CONTROL BOARD LA REGION

COMMENT:

Re: 1ST DRAFT NPDES PERMIT

Fax No.: (213) 576-5777

From: LOUIS A. CELAYA

FAX No.: (626) 932-5559

Number of Pages including this page: 13

Message:

HARD COPY TO BE HAND DELIVERED.

Please advise of any discrepancies in Transmission.

Telephone: (626) 932-5562 OR (626)932-5575

Thank you.

R0002340

415 S. Ivy Ave. Monrovia, California 91016-2888 (626) 932-5550

City of Montebello

May 16. 2001

2001 MAY 18 P 2:05

Mr. Dennis Dickerson
Executive Officer
California Regional Water
Quality Control Board
Los Angeles Region
320 West 4th Street
Los Angeles, CA 90013

FAXED AND MAILED

Reference: Comments in Regard to Draft Municipal NPDES Permit

1. **Inspection/Enforcement of GIASWP Facilities and GCASWP Construction Sites (Part 4.A.2)**

- Proposed New Requirement

The draft permit proposes to require permittees to conduct inspections and, if necessary, to take enforcement action against: (1) industrial facilities subject to General Industrial Activity Storm Water Permit (GIASWP) requirements; and (2) construction sites subject to General Construction Activity Storm Water (GCASWP) requirements. Regional Board staff is of the opinion that municipalities are "ultimately responsible for the quality of storm water discharges to the MS4" -- including those discharged from GIASWP subject-facilities and GCASWP-subject construction projects.

- Issue

This proposed requirement would impose an additional cost burden on municipalities. This is unfair, given that (1) the State Water Resources Control Board (SWRCB) and, by extension, the Regional Board, have already assumed responsibility for this task; and (2) the state collects fees from subject industrial facilities and construction sites. As to the notion that municipalities are responsible for discharges to the MS4 from GIASWP-subject industrial facilities and GCASWP-subject construction projects, Regional Board staff overlooks the fact that the state has elected to regulate discharges from industrial facilities and certain construction projects (viz., those that disturb 5 acres or more or soil disturbance) just as it has elected to regulate discharges to the MS4 from municipalities. In other words, the state has preempted this presumed responsibility.

1600 West Beverly Boulevard • Montebello, California 90640-3932 • (323) 887-1200

- Recommendation

Discuss with Regional Board staff cost-effective alternatives. These include: (i) continuing the site visit program (only if funded by the principal permittee); (ii) requiring municipalities to compel industrial facilities to obtain a GIASWP (e.g., as a condition for a business license); (iii) reporting industrial facilities that do not have GIASWPs to Regional Board staff for enforcement action; (iv) reporting GIASWP industrial facilities that appear not to be in compliance with permit requirements (usually non-implementation of BMPs) and, if necessary, to conduct joint enforcement action.

2. Eliminating Discretionary Approval from the SUSMP Evaluation Process (Part 4.C.3)

- Proposed New Requirement

The draft permit proposes to remove "discretionary approval" as an important criterion for determining if certain categories of projects and redevelopments would be subject to Standard Urban Storm Water Mitigation Plan (SUSMP) requirements. Currently, a project is subject to SUSMP requirements if it is one of the 8 types of development projects/redevelopment projects, and if it is subject to discretionary approval (i.e., CEQA clearance, conditional use permit, or other action involving the subjective judgment of a municipal official).

- Issue

The Regional Board -- together with the environmental community – attempted to remove discretionary approval when it adopted the SUSMP in March of 2000. That attempt was immediately challenged by a group of cities, which resulted in the restoration of discretionary approval by the State Water Resources Control Board. Most cities still want to retain discretionary approval to enable them not to require costly and questionably effective infiltration/treatment controls, unless there is a compelling reason to do so. The City is aware that the Regional Board's attempt to eliminate discretionary approval was motivated by the understandable need to "close a loophole" that enables cities to exempt subject projects from all SUSMP measures, by simply not requiring them to undergo discretionary approval (e.g., a coincidental EIR or mitigated negative declaration).

- Recommendation

There is, however, an alternative to these extremes. Although the City is opposed to eliminating discretionary approval, it would not be opposed to:

i. Requiring the 8 categories of projects to be subject to all SUSMP measures except infiltration or treatment controls, which would remain discretionary. This means that (a) general mitigation measures (e.g., not increasing peak runoff from pre-development levels, protecting slopes and channels, etc.), and (b) use-specific mitigation measures (e.g., canopies for gas stations, and runoff control design requirements for wash areas, service bays, and loading docks, etc.), would be prescribed for all subject projects.

ii. Requiring infiltration/treatment controls (designed to meet the .75" or other numeric standards), only when the chemical constituents contained in runoff from the completed project would impair the beneficial use of a receiving water, as

determined by its listing as pollutant on the 303(d) list of impaired water bodies).

3. **Making 40,000 f^2 Industrial/Commercial Facilities SUSMP-Subject**

- Proposed New Requirement

The draft permit proposes to add -- no later than March 9, 2001 – 1-acre industrial/commercial development projects to the list of subject SUSMP projects. Further, it seeks to define 1 acre as 40,000 square feet instead of 43,560 square feet.

- Issue

Adding 1-acre industrial/commercial facilities to the SUSMP-applicable list appears inappropriate. This new requirement is based on the anticipation of the Phase II rule pertaining to the new developments. It is inappropriate, because the Phase II rule here applies projects that "result in the land disturbance of greater than or equal to 1 acre" – not 1 acre of impervious area. In fact, the Phase II rule here would seem to apply to all new development projects, including land-use determined SUSMP projects.

- Recommendation

Eliminate this requirement and reevaluate SUSMP requirements against the Phase II rule, as it relates to controlling pollutants from new developments.

3. **General Plan Update (Part 4.C.12)**

- Proposed New Requirement

The draft permit proposes to require municipalities to incorporate "watershed and storm water quality and quantity management considerations no later than 540 days from the permit adoption date." The current permit requires this element to be incorporated into General Plans when they are updated.

- Issue

The need to update municipal General Plans to include, essentially, a storm water quality element has always been unclear. Further, it seems that the SUSMPs have obviated the need for a General Plan storm water quality element. This is because the SUSMP requires the prescription of controls for new developments and redevelopment projects that operate to minimize post-construction runoff pollution. That being the case, why is a storm water quality element needed, especially for built-out municipalities?

- Recommendation

Unless the Regional Board staff can justify the purpose of adding a storm water quality element addition to General Plans, this requirement should be eliminated.

4. **Outreach and Education to School Districts (4.A.1.d)**

- Proposed New Requirement

The draft permit proposes that permittees provide unified[1] school districts within their jurisdictions materials, live presentations, brochures, and other media necessary to storm water-educate a minimum of 50% of all school children (K-12 to 12), every 2 years.

- Issue

The City does not object to this requirement as long as it does not have to pay for it. It represents a new cost to cities. The City takes the view that school districts are essentially state-managed governmental entities. The state, therefore, should provide the resources necessary to educate school children on runoff pollution prevention. Under the current permit, the principal permittee has assumed responsibility for this task. Using flood control funds (collected from residents and businesses) it has visited every subject school in every city and unincorporated areas of Los Angeles County. If the principal permittee agrees to continue performing this task as a means of satisfying this new requirement, the City would not object to it.

- Recommendation

Makes this requirement a principal permittee responsibility.

5. **Outreach and Education to Small Businesses (4.A.1.b)**

- Proposed New Requirement

Municipalities would be required to develop and implement a Business Assistance Program to educate subject businesses to provide: (i) on-site technical assistance/consultant by telephone; (ii) BMP-information and educational materials; (3) provide information about environmental consultants, hazardous waste treatment, hauling, disposal, and recycling services, and control practices; and (4) information regarding pollution prevention and control practices.

- Issue

This proposed new task is arbitrary because it enlarges the commercial facilities category's from gas, stations, automotive facilities, and restaurants, to include any business that (1) has less than 100 employees; (2) lacks funding for private consulting; (3) lacks expertise necessary to understand and comply with storm water regulations; and (4) has requested assistance, or was referred through the industrial/commercial inspection program. Effectively, this could include any business, such as consulting agencies, tailor shops, barber shops, and hundreds of others that can hardly be considered as pollution generators. This proposed requirement -- which would be very costly -- does not provide any justification as to why it is necessary to perform outreach to these types of businesses.

- Recommendation

Eliminate this requirement.

6. **Lowering the Threshold for Local SWPPPs (Part 4.D.2)**

[1] Why are just "unified" school districts included here and not other school districts?

- Proposed New Requirement 0

The draft permit proposes to lower the threshold for requiring local SWPPPs (Storm Water Pollution Prevention Plans). Currently, local SWPPPs are required from construction projects that are expected to cause a soil disturbance of 2 to under 5 acres, by grading, clearing, and or excavating. The proposed permit would lower this threshold to between 1 acre and under 5 acres.

- Issue

Lowering the threshold here seems to be associated with a change in Phase II municipal NPDES regulations. In 2003, the threshold for construction sites requiring GCASWPs will be lowered from 5 acres to 1 acre. Apparently, Regional Board staff believes that this should have a corresponding affect on the next level of construction requirements. The City disagrees with this rationale. The reason SWPPPs exist in the first place is to enable inspection/enforcement personnel to determine compliance with BMPs that are intended to: (1) reduce sediment and chemical constituent discharged to the MS4; and (2) certify that no illicit discharges would be released to the MS4. For larger construction sites, a SWPPP is necessary because of the time it would take for inspection personnel to do a walk-through. However, for smaller construction sites, this really is not a problem. Inspection personnel can easily identify if basic BMPs – which really do not require SWPPPs – are in place. Thus, to require permittees to require local SWPPPs for projects even under 2 acres, would be a waste of municipal time and money.

Beyond this, given that the threshold for determining GCASWP construction sites will be lowered in 2003 from 5 acres to 1 acre, and given that the current permit requirement of prescribing minimum BMPs to construction sites of 2 acres and under has been effective, there is no reason to tamper with that requirement now.

- Recommendation

Maintain the current soil disturbance requirement for local SWPPPs (2 and 5 acres) until 2003, when 1-plus acre projects will require GCASWP coverage.

7. **Training Contractors (Part 4.D.1.a)**

- Proposed New Requirement

Under the construction program, municipal permittees would be required to "implement an education program to discuss storm water pollution prevention and controls at construction sites, and distribute educational materials targeted at the construction community during meetings, workshops, pre-construction meetings, and inspections." The current requirement is to provide over-the-counter developer/contractor information regarding development construction requirements.

- Issue

The additional requirement is superfluous and, if approved, would impose additional unnecessary costs on cities. Actually, at present, communicating construction program requirements to contractors/developers is a simple task -- it involves: (1) providing, over-the-counter, written materials and verbal information regarding requirements associated with the

three categories of construction projects; and (2) providing a list and description of construction-related BMPs. The draft permit proposes additional tasks that accomplish the same thing, but in more elaborate and costly terms.

- Recommendation

Eliminate this requirement, because it would do nothing to improve the City's ability to inform contractors/developers of their obligations under the municipal NPDES permit.

8. **Public Agency (Part 4.E.6.a)**

- Proposed New Requirement

The draft permit proposes to increase the frequency of street sweeping to at least 4 times per month "in areas generating high volumes of trash and "an average not less the twice per month in areas that generate moderate volumes of trash on traffic collector streets and residential areas." The current permit calls for a minimum of sweeping once a month. Street sweeping is essentially a trash-reducing BMP.

- Recommendation

Given the cost associated with increased street sweeping, and that there are less expensive trash-mitigation BMPs available, this requirement should be eliminated.

9. **Public Agency (Part 4.E.5.b)**

- Proposed New Requirement

The draft permit proposes to increase the frequency of clean-outs of priority catch basins (40% full) from once a year, just prior to the wet season (October 1 to April 30), to twice a year, from May 1 to September 30 (during the dry season).

- Issue

The justification for making this requirement is based more on the fact that the Ventura permit (adopted in June of 2000) requires it. Actually, increasing the frequency here makes no sense. Whether a catch basin is full at any level during the dry season is issueless because trash and other material trapped in it are not going to get into a receiving water, because the hydraulic mechanism is not there (with the exception of a rare storm event every now and then). This is why, historically, catch basin clean-outs are done just before the wet season. While storm events during the wet season do occur from time-to-time, they are so rare as to warrant imposing such an additional expense on municipalities.

- Recommendation

Eliminate this requirement, because it would do very little to reduce trash discharges to the receiving water. Further, the zero trash TMDL for Los Angeles River and Ballona Creek watershed-resident cities, would make this requirement superfluous. Beyond this, it denies permittees the option of resorting to more cost-effective trash reducing BMPs.

10. **Public Agency (Part 4.E.6.c)**

- Proposed New Requirement

The draft permit proposes to increase the frequency of parking lot cleanings from once a month to twice a month.

- Issue

Under the current permit, only parking lots with 25-plus spaces are subject to monthly cleanings. Thus, the scope of this requirement is enlarged to include every municipal parking lot, regardless of size, and increases the cleaning and inspection frequency from once a month to twice a month. The justification for making this requirement more stringent is not clear.

- Recommendation

Eliminate the requirement and, therewith, its additional cost, unless data can be provided to show that an increase in parking lot cleanings from once a month to twice a month would improve receiving water quality.

II. OTHER CHANGES TO PROPOSED MUNICIPAL NPDES PERMIT

1. **Discharge Prohibitions (Part 1.2.c)**

- Issue

The proposed permit eliminates street wash water as an exempted non-storm water discharge. No explanation is provided as to why. CFR 40.122.26 places street wash water under the exempted non-storm water discharge category (as opposed to an illicit discharge). Proposed Phase II regulations also exempt street wash water – and other categories of non-storm water discharges -- unless the operator of the municipal separate storm sewer system ("MS4") deems it to be a " significant contributor of pollutants." To date, no such determination has been made.

- Recommendation

Street wash water should be listed as an exempted non-storm water discharge (along with sidewalk wash water) as long as it does not (i) contain surfactants or other chemical constituents; or (ii) transport sediment, particulates, or other material to the storm drain.

2. **Model Programs** (no reference in draft permit)

- Issue

The proposed draft permit makes no clear reference to the current model programs. Are they to be re-written or carried-over from this permit to the new one?

3. **Notice to Meet and Confer** (no permit reference)

- Issue

The proposed permit lacks the "notice to meet and confer" provision contained in the existing permit. This provision is intended to, among other things, resolve compliance issues prior to the Regional Board taking enforcement action. Most compliance issues -- as recently demonstrated by the Notices of Violations (NOVs) issued by the Regional Board to several municipal permittees -- are the result of misinterpretation or misunderstanding on the part of Regional Board staff, especially new staff. The meet and confer provision is intended to allow the resolution of disagreements arising out of misinterpretation or misunderstanding before issuing NOVs -- in itself an enforcement action. Since it is likely that the draft permit will contain provisions that are open to interpretation, it makes sense to retain the meet and confer provision.

4. **Receiving Waters Limitations (Part 2)**

- Issue

Notwithstanding that Ventura and Long Beach municipal permits contain the same receiving water limitations language presented in the proposed permit, the City is opposed to such language and prefers, instead, existing permit language. Or, in the alternative, remove the following provisions as mentioned by the principal permittee:

1. Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited.
2. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible, shall not cause or contribute to a condition of nuisance.

The City objects to the proposed existing permit language, because it does not allow implementing the permit and its programs as a means of achieving compliance with water quality standards and objectives. This seems to undermine the whole purpose of the permit, which is to tolerate some exceedances of water quality standards/objectives (contained in the Los Angeles Basin Plan) -- provided, of course permit-conditions are met. It is simply impossible for any municipality to prevent all discharges that cause or contribute to the violation of water quality standards or objectives.

5. **180 Day Implementation Program Period (various program provisions)**

- The Issue

The proposed permit contains a 180-day implementation date for each program category (development planning, development construction illicit connection/discharge, public agency, and public education). 180 days is not enough time to revise and implement each of the revised programs because of budgetary constraints. Most cities need at least one year of advanced time to budget for new costs. Some cities need two years.

In closing, the City appreciates the time and effort that the Regional Board staff devoted on programming the draft permit. We look forward to seeing that your office can consider the

City's input in developing a new permit that will truly improve water quality in the most cost effective approach possible.

If you have any questions, please call Kwok Tam of my staff at (323) 887-1469.

Sincerely,

Ted Spaseff
Director of Public Works

TS:KT:ab

CC: Richard Chen, City Engineer
Project File

CITY OF MONTEBE[illegible]

FACSIMILE TRANSMIT[illegible]

Telephone (323) 887-1460 FA[illegible] (323) 887-1464

Date: May 16, 2001 # OF PAGES [illegible]luding cover sheet) [illegible]

TO: NAME: Mr. Dennis Dickerson

FIRM: Calif. Regional Water Qua[illegible] Control Board

TEL. # (213 576-6600 F[illegible] (213) 576-6640

FROM: Ted Spaseff, Director of P[illegible] Works

SUBJECT: Draft Municipal NPES Permit

	Per your request		Per our conversation
X	For your information		For your review and comments
	TIME SENSITIVE		

Additional Comments:

CITY OF MONTEREY PARK
320 west newmark avenue ▪ monterey park, ca 91754-2896
▪ municipal services center

May 16, 2001

2001 MAY 17 P 2:42

Dennis Dickerson, Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street
Los Angeles, California 90013

Subject: **Comments Regarding: First Municipal NPDES Permit Draft**

Dear Mr. Dickerson:

Submitted herewith for your consideration are comments prepared by the City of Monterey Park ("City") in response to the draft Los Angeles County Municipal NPDES Permit (hereinafter "draft permit"), dated April 13, 2001.

It should be noted that the draft permit is a substantial improvement over the current permit. It is less problematic in several key areas; however, there is room for additional improvement. The written comments prepared by the City are intended to accomplish this by identifying areas of concern -- including: (1) program requirements that appear to be unnecessarily labor intensive and costly; (2) new provisions that would make permit compliance unjustifiably more stringent while increasing permittee exposure to administrative enforcement actions and third party litigation; and (3) permit language that seems unclear and contradictory in a few places.

It is also suggested that regional board staff consider a different approach for presenting, evaluating, and responding to comments in re: municipal NPDES issues. In the past, permittee comments that were contrary to regional board staff views were usually rejected without compelling reason. Often ignored were the permittees legitimate concerns for the cost and effectiveness of proposed requirements. This has resulted in the adoption of unpopular and very controversial permit requirements. Permittees were thus faced with the narrow options of either accepting unreasonable requirements or chalienging them administratively and legally.

In the interest of avoiding a similar fate with the next municipal NPDES Permit, the following is proposed:

1. Regional Board staff should make a conscientious effort to discuss and resolve concerns raised by permittees rather than just issuing a written rejection with a brief explanation as to why. Instead, a forum is recommended to promote dialog aimed towards achieving mutual agreement. Although workshops are fine for communicating requirements and identifying general issues, they are not effective in identifying specific areas of concern or resolving disagreement. Smaller work groups are needed because they can provide better attention to issues. A work group could be comprised of permittee representatives and regional staff for each program area (e.g., development planning, development construction, illicit discharge and connection detection and elimination, etc.). The work groups should concentrate on working-out essential compliance concerns. Once this is

done, developing language-related details would be relatively simple. Also, an objective third party should be involved to facilitate discussion and resolve disagreement.

2. Criteria for determining the reasonability of new permit requirements or existing ones should be developed. Such criteria should include objective readings of (a) 40 CFR 122.26 (storm water regulations under the Clean Water Act); (b) Phase II storm water rules, which are scheduled to take effect in 2003; and, (c) Porter-Cologne Act (State Water Code) to justify requirements not specified in the Clean Water Act, in terms of beneficial use protection, using scientific data rather than subject judgment.

3. A general workshop on Phase II storm water rules promulgated by the USEPA and scheduled for implementation in 2003, should be held to educate regional board staff, permittees, and other interested parties on these new municipal NPDES permit requirements. To that end, Regional Board staff is encouraged to join with permittees in inviting a representative from USEPA Region 9 to conduct the workshop.

4. Delay adoption of the new permit until Phase II rules have been fully identified, evaluated, and incorporated into the next permit.

In closing, the City appreciates the time and effort that regional board staff has invested in preparing the draft permit. We look forward to participating in developing a new permit that will, in the most cost effective manner possible, truly improve water quality.

Sincerely,

Ronald J Merry

RONALD J. MERRY
Director of Public Works/City Engineer

cc: Mr. David Nahai, Chairman
Los Angeles Regional Water Quality Control Board

Mr. Art Bagget, Chairman
State Water Resources Control Board

CHERI NEWMAN
Councilmember
MICHAEL MENDOZA
Council Member
ERNIE GARCIA
City Manager

City of NORWALK

TELEPHONE (562) 929-5771 • FACSIMILE (562) 929-5773 • WWW.CI.NORWALK.CA.US

2001 JUN 13 P 1:51

June 11, 2001

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street
Los Angeles, California 90013

Subject: Comments on first draft of municipal NPDES permit dated April 13, 2001

Dear Mr. Dickerson:

The City of Norwalk wishes to express our opposition to many of the terms proposed in the draft permit issued by your office on April 13, 2001. These concerns have been presented to you and your staff through the Coalition for Practical Regulation (CPR), of which the City of Norwalk is a member, at both the April 24th workshop and in writing. Additional concerns have been expressed by the Executive Advisory Committee, and the Los Angeles County Department of Public Works.

Although the draft permit is a substantial improvement over the current adopted permit, the issues raised by the above mentioned groups on Norwalk's behalf must be addressed before Norwalk will support the new permit. Norwalk is fully committed to achieving the underlying goals of both the Federal Clean Water Act and State Law with regard to cleaning up storm water runoff. Norwalk cannot support a permit that not only goes beyond the "maximum extent practicable" or MEP standard set forth in the Federal Clean Water Act, but also eliminates the "safe harbor" language that protects cities from third party lawsuits.

At this time, Norwalk cannot support the draft permit. Based on what we feel are fundamental flaws, we urge regional board staff to seriously consider all comments received and make appropriate modifications. Norwalk hopes permittees will not be forced into choosing between accepting unreasonable requirements or challenging them either administratively and/or legally.

The City of Norwalk agrees with the issues raised by CPR, the EAC, and LACDPW. Norwalk wants to commend your staff for taking the time to consider our concerns and believes that a reasonable permit can be adopted. Our hope would be that a compromise could be reached with the hard work of all interested parties and the job of cleaning up storm water can move forward.

Should regional board staff have any questions, please feel free to contact Jill Anderson, Management Services Coordinator, at (562) 929-5770. Thank you for considering our position.

Sincerely,

Gordon Stefenhagen
Mayor

cc: Mr. David Nahai, Chairman
Los Angeles Regional Water Quality Control Board

Mr. Art Bagget, Chairman
State Water Resources Control Board

May 16, 2001

2001 MAY 17 P 2:42

Mr. Dennis Dickerson
Executive Director
Regional Water Quality Control
Board – Los Angeles
320 W. Fourth Street, Suite 200
Los Angeles, CA 90013-1105

Review Comments on Draft Los Angeles County Storm Water and Urban Runoff Permit

Dear Mr. Dickerson:

Thank you for the opportunity to comment on the April 13, 2001, Draft Municipal Storm Water Permit. This permit will have a significant impact on the daily lives of the Residents and Businesses of Los Angeles County. A large percentage of the economy of Los Angeles County is tied to tourism at the beaches along the Coast and at the inland lakes and streams. It is in everyone's best interest to protect these resources.

The Regional Board must recognize the limited resources available at the Municipal level to support these programs. The Clean Water Act (CWA) establishes a Maximum Extent Practical (MEP) standard for Storm Water Permits. This permit, in several areas, attempts to apply numeric standards to Municipal Programs. The application of numeric standards will make compliance with the permit impossible for the municipalities and subject them to numerous citizen lawsuits.

While we recognize the importance of the CWA and the intent of this draft permit we must also address the Cities ability to comply with the requirements without exposure to unnecessary liability. The following comments reflect the Cities desire to comply with the CWA and the Regional Water Quality Control Board's (Board) permit. Where suggestions are made they are intended to provide the Board with alternative wording that we believe will comply with the MEP intent of the CWA. The Board will receive many comments from Lawyers and others familiar with the statutory requirements of the CWA. My comments will focus on the affect of the draft permit on the Cities of Los Angeles County.

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1. Part 2. Receiving Water Limitation sections 1 and 2. Section 1 is so broad that the cities and the County will face liability for "cause(ing) or contribute(ing) to the violation of water quality standards or water quality objectives". Section 2 will pose the threat of liability for "cause(ing) or contribute(ing) to a condition of nuisance. These two provisions must be revised to allow the cities and the County to operate the Municipal Separate Storm Sewer System (MS4) without fear of litigation from NRDC or other environmental groups for minimal impacts on water quality. Each and every resident of Los Angeles County depends on the MS4 to protect our homes and businesses from the real threat of flooding. The system has been built up over the years to efficiently carry storm runoff to the ocean. To convert this system to a full treatment system will take years. The Board cannot leave the cities and County open to litigation if you expect the improvements to be accomplished.

2. Part 3G(n) Legal Authority for inspections, surveillance and monitoring of Industrial, Commercial and Construction sites. This paragraph is overly broad. Cities and the County have the authority to investigate violations of law. Normally this occurs when the Police Department or the District Attorney is notified of a violation. These agencies are trained to conduct investigation and have the legal support to obtain the needed warrants to capture private records. These techniques are generally reserved for cases of some significance. Unfortunately, Police Agencies and Prosecutors have not been convinced that discharges to the MS4 are important enough when they compare it to their workload involving thieves and murderers. Thus, it is not sufficient to ask cities and the County to certify to their legal authority, because the authority is granted by the State Judicial system. The greater question that should be asked is "has the crime been elevated to the degree needed to cause enforcement by local authorities." In extreme cases it is likely that the effort will be made, but for most incidents it is unlikely that any action will be taken to investigate or enforce minor illegal discharges.

   This section will be used to convict cities and the County of violating the Storm Water permit due to lack of detailed investigations and prosecutions. This will not be difficult to prove. We do not believe that the Board should be creating regulations that will subject the Cities and the County to broad liability.

3. Part 3G(p) Adopt and implement an agency-specific storm water and urban runoff ordinance. The requirement of this paragraph that the ordinance be "effective immediately upon the adoption of this Order." This requirement is not practical. Cities and the County have a procedure to adopt ordinances. These procedures are derived from State Law that governs City and County authority. We must conduct public hearings before an Ordinance imposing restrictions on property rights can be adopted to allow the public to provide input to the process. Then unless there is a significant public health and

safety concern involved the ordinance will take effect thirty (30) days after the second reading of the ordinance. Thus, the requirement that the cities and the County adopt new ordinance and have then effective upon the approval of this order is impossible. I would suggest that a 180 day schedule be specified like the Board imposed for the SUSMP provisions.

4. Part 4A(2)(b) Business Assistance Program. While the principal involve with the Business Assistance Program is good, as currently written the program is flawed. The first problem is in the definition of a small business. Any business that has 99 employees is not a small business. To pay these employees even at minimum wage, the business must have significant revenue. I believe that the number of employees must be reduced to "less than 25 employees" or the business must be tied to actual revenue, say less than $1,000,000 in gross revenue. By setting the size of a small business at one of these levels the City and the County will not be assisting businesses that can afford to obtain assistance on its own. The Cities and the County have already offered to assist businesses that may not have a clear understanding as a result of the Educational Site Visit program. In most cases the offers were not well received. The businesses often treated the contact as an attempt to penalize the businesses rather than to help deal with the Storm Water Issue. The second issue with the program is the provision that states that the program "shall be a confidential and non-enforcement program." In most cities the ability to have two separate departments, one to assist businesses and another to enforce the regulations, will be impossible. Thus, the city employees charged with helping the businesses in a non-enforcement manner will likely be the same people that will visit and investigate violations of the business. I would suggest that the first visit be designed to assist the business understand the program. Any future visits will involve enforcement that will then become progressively more severe. Without the ability to implement the program in this way the cities and the County will lack credibility when enforcement is required.

5. Part 4B Programs for Industrial/Commercial Inspections. This part of the permit is the most objectionable part of the draft permit. This attempt by the Board to transfer its obligation to inspect and enforce against Phase I Industries and State Construction Permits without transferring the source of and the authority to collect revenue is unacceptable. It is clear to all cities and the County that the State has not adequately funded the inspection part of the NPDES program. If the State were to adequately fund the program they would have to include employees to perform the plan review, inspectors to train and to verify compliance in the field and prosecutors to enforce against violators. These are the same provisions that the Board is expecting the cities and the County to implement, yet the Board does not implement the same programs.

As a City agent I do visit sites to verify compliance with State and Local Building Codes and other regulations to ensure that the Health and Safety of the public. But, for the Board to require that the cities and the County take over its responsibilities and liabilities because the Board will not adequately fund the program is unacceptable. Until complete and adequate funding is provided the cities and the County must insist that this provision be removed.

6. Part 4B(4) BMP Implementation. This section is vague and contradictory. The first paragraph starts by saying that the City "shall require the implementation of the designated minimum BMP's, as approved in Resolution 98-08, at each industrial/commercial site within its jurisdiction." While this will be a formidable task by itself, the paragraph then ends by requiring the Permittee's "shall also implement or require any additional site specific BMP's ... which are more stringent than those required under the Statewide General Industrial Permit." This requirement I find confusing when I review the Permit. The General Industrial Permit does not cover not all Industrial/Commercial businesses in my town. So as I read this requirement I am required to impose harsher standards on non-regulated industry than the State would have the authority to impose on the Phase 1 industries identified in the CWA. I question if the Board has the Legal Authority to accomplish this requirement, much less force the permittee's to impose these standards. The other question that this requirement raises relates to the conditions that would trigger these harsh requirements. It is not clear if I am to impose this harsh standard on all of my business, or just those few that I deem to be gross violators. I believe that without clear requirements the City would stand little or no chance of prevailing against a court challenge.

   I would recommend that the Board revise this requirement to limit the city obligations to the requirements of Resolution 98-08.

   The second paragraph requires the Permittees to "implement, or require implementation of, additional controls for Industrial/Commercial sites tributary to CWA section 303d impaired water bodies ... as necessary to comply with this order." The paragraph also requires the cities to impose additional standards on Industrial/Commercial sites within or Directly adjacent to or discharging directly to Coastal Lagoons or Environmentally Sensitive Areas. Both of these requirements are vague as to intent and are impossible to enforce on businesses that may have been operating in the same location for twenty or more years. These business are going to ask, and rightly so, what proof the Permittees have to justify the imposition of new operating restrictions.

   I believe that the section, as written, is unenforceable and will be overturned in Court action. Since the City is damned if it imposes the requirement and damned if it fails to impose the requirement, each Permittee looses this battle.

This section must be written with some justification for its inclusion in the permit.

7. Part 4B(5)d Regional Board Inspection Coordination. This section states that if the Regional Board has performed an inspection of an Industrial/Commercial site the Permittees do not need to inspect that site. The section leaves unsaid how the coordination will happen between the Permittees and the Board. If the Board is to conduct an unannounced inspection of an Industrial/Commercial site they must follow up within a set time with a notice to the Permittee that the inspection has taken place. I also believe that the Permittee should be notified of the Board findings so that problem businesses can be monitored.

8. Part 4C(3)b Board Revisions to the SUSMP Projects. I must request clarification on the change made to the Hillside Residential property. As written item b(1) states Single-family hillside residential developments of "10,000" square feet or more. I have heard Permittees describe this as 10,000 square feet of disturbed area or 10,000 square feet of lot area. It is unclear how the Board intends this provision to be enforced. Clarification is required.

9. Part 4C(8) Redevelopment Projects. The wording used in this section does not agree with the definition of Redevelopment as contained in the Definitions in Part 5. This section must be revised to match the Definition since the definition was established by State Board Action on the SUSMP Petition.

10. Part 4C(12) General Plan Update. As noted at the Board Workshop on April 24th the requirement for every City to modify its general plan to reflect Storm Water Quality issues will take longer than 540 days (18 months) allowed in the permit. I believe that the Board must participate in a workshop with Planning Directors from all Permittees to establish the elements of the general plan that must be revised. Through this process all Permittees will perform the revisions correctly the first time rather than have to correct a flawed document. State Law limits the number of times that the General Plan can be modified in any one-year. The Permittees need to identify all elements that will be affected before contracts are issued for these amendments. Once the workshop is held the Board should then allow not less than three years for Permittees to budget for and complete the General Plan Update.

11. Part 4E(1) Dry Weather Diversions. The Board has provided detailed requirements for all Public Agency Activities except Dry Weather Diversions. It is not clear if the Board is requiring all Permittees to implement a dry weather diversion program or if the Board is only mentioning this as a possible Public Agency Activity. In either case it appears that the Permittees

should be provided with direction from the Board on its intent on Dry Weather diversion. If there are no specific requirements this subgroup should not be listed at all.

12. Permit Wide Requirement. Throughout the Permit the Board includes requirements that the Permittees maintain computer records of a wide variety of activities. Without standards for the design of these data bases the County as Principal Permittee will get information that is in any number of formats. Not all Permittees have the same computer system support and few Permittees have GIS capabilities. The Board should mandate that the Principal Permittee develop an application that contains all of the data that the Board wants collected. The Principal Permittee should then be required to supply the application to the Permittees. Through this means the Permittees will provide information that is uniform and transferable.

The comments included above do not represent all of our concerns about the draft permit. But, due to the limited time available to conduct this review the important areas have been highlighted. At this point I understand that the Permit will not be presented to the Board until September or October, depending on the Boards schedule. I understand that the Board cannot negotiate with each Permittee individually, however I hope that the Board will address these issues by incorporating the requested changes. Permittees support the Clean Water Act and the Boards desire to clean up the waters of Los Angeles County. However the resources available to implement new regulations are not unlimited. The Board will get cooperation if they propose a practical permit based on MEP Technology. Any permit based on numeric limits will not be supported and will only lead to Board fines and legal actions challenging the proposed permit.

Sincerely,

CITY OF PARAMOUNT

William C. Pagett
City Engineer

CC City Manager
City Council
City Attorney

DOUGLAS DUNLAP
City Manager

2001 MAY 17 P 2:42

THE CITY OF
POMONA

Office of the City Manager

May 16, 2001

Attn: Xavier Swamikannu
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Subject: Draft Los Angeles Regional Water Quality Control Board Draft NPDES Permit No. CAS614001

My staff has reviewed the Draft NPDES Permit for Los Angeles County and has found several areas of concern for the City of Pomona. The Draft Permit imposes unfunded mandates on Pomona with no recognition of the availability of resources necessary to provide the services required by the permit. Some of the unfunded expanded programs required by the Permit include:

Weekly street sweeping (monthly under current permit)

Increased frequency of catch basin cleaning

Storm water plans for all projects

City Vehicle yards to be retrofitted

Implementation of a new City Business Assistance Program

Mandated changes to CEQA checklists

Since the State is proposing **no *funding*** to the cities for the costs of the new inspection program, the business community will likely object to the additional levy of a city storm water fee since they are already paying fees to the State. Assuming it were even legally enforceable, Cities would be required to fund staffing for inspectors or contract with consultant inspection firms.

Cities are being ordered to become the "storm water police"

The requirements under the Clean Water Act allow for a permit that requires Cities to inspect a limited number of industrial facilities, in certain settings. The regulations provide that city's permit responsibilities are to involve "storm water associated with industrial activity," industrial facilities contributing substantial pollutant loadings, and "illicit discharges." Cities are not required to inspect the countless commercial facilities, or to inspect industrial facility operations covered under the State permit. In fact, the express terms of the State Industrial General Permit plainly imposes the obligation on the Regional Boards to conduct "compliance inspections," and to take enforcement action. Cities are primarily required to inspect to insure that illicit discharges do not enter the storm drains, and there is nothing in the regulations that would allow the Cities to enter upon and inspect private property. However, the Draft NPDES Permit appears to be an attempt to shift the responsibility for industrial and construction site storm water inspections and enforcement programs from the State to the Cities. The State was required in 1989 to develop a program for industrial and construction storm water permits. Fees collected by the State range from $250 to $10,000 per storm water permit. The State is currently responsible for reviewing plans on the issuance of permits, inspections and legal enforcement, including levying fines and prosecuting violators but, language in the Draft Permit is so broad that it appears that cities are required to inspect all industrial and commercial businesses.

The Draft Permit requires that Cities have the ability to enter onto private property to inspect thousands of commercial and industrial facilities. Under the Draft Permit, Cities must possess the "ability to carry out all inspection, surveillance and monitoring," and must report, within 24 hours of discovery, non-compliant sites and other sites that "create an adverse impact or nuisance," to the Regional Board. The criterion to determine whether a site is a nuisance or is causing an "adverse impact" is undefined. (Page 29, Section 7). The Cities must also "possess the authority to enter, sample, inspect, review and copy records, and require regular reports" from such businesses, (Page 19, Section G (1)(n)). Where does the City obtain the authority to enter private property without probable cause?

Inspectors will also be required to provide oral notification of an "adverse impact or nuisance" to the Board within 24 hours. Inspectors must provide oral notification of "non-compliant" sites within three days. The inspectors are to follow up oral reports with written reports, within five days. Cities are then to enforce the violations through "ordinances or other regulatory mechanisms", including "sanctions to ensure compliance". (Page 28, Sections 6 & 7). Again, where does the City get the authority to enter private property without probable cause? If cities accept the State inspection responsibilities, they may be exposed to third party litigation and State fines. Consequently, cities would be subjected to fines and litigation, where inspection and enforcement programs are not considered "sufficient" by the Board or any individual or third party.

The City of Pomona is opposed to this shift of inspection and enforcement obligation from the State to the City, and is further opposed to the extension of limitless inspection, reporting and oversight obligations imposed by the Draft Permit.

Expanded Standard Urban Storm Water Mitigation Plan Requirements

(Part 4 Special Provisions, Section Page 29 C1) *The Permittees shall implement a development-planning program with immediate effect that will require all planning priority development and redevelopment projects to. . .*

The term *planning priority development projects* is not defined in Part 5 - - Definitions. Are cities required to implement a development-planning program for all projects? Or for projects that exceeds specific size or area requirements?

Page 30 C(3)(b) *Each Permittee shall require that a Standard Urban Storm Water Mitigation Plan . . .be implemented for the following categories of developments with immediate effect: (1-7)*

As written, the requirements will require most commercial projects to prepare a SUSMP. Very few commercial projects have parking areas with less than 5,000 square feet or 25 spaces. Do the requirements apply to repaving projects? If so, the requirement may discourage well-intentioned property owners from improving their property.

Page 30 C(3)(b) *Each Permittee shall require that a Standard Urban Storm Water Mitigation Plan . . .be implemented for the following categories of developments with immediate effect: (1-7)*

As written, the requirements will require most commercial projects to design and implement post-construction treatment and structural controls to mitigate storm water pollution before issuing grading or building permits. Very few commercial projects have parking areas with less than 5,000 square feet or 25 spaces. If the requirements apply to repaving projects, the requirement may discourage well-intentioned property owners from improving their property.

Page 33 8. *The Permittee shall apply the SUSMP, or site specific requirements including post- construction storm water mitigation to all projects that undergo significant redevelopment in their respective categories. Significant redevelopment means the creation, addition, or replacement of 5,000 square feet of impervious surface area on an already developed site.*

Where significant redevelopment results in an increase of more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post development storm water quality control requirements, the entire project must be mitigated.

As written, the requirements will require most commercial projects to design and implement post-construction treatment and structural controls to mitigate storm water pollution before issuing grading or building permits. Very few commercial projects have parking areas with

less than 5,000 square feet or 25 spaces. If the requirements apply to repaving projects, the requirement may discourage well-intentioned property owners from improving their property.

Page 34 11. *(California Environmental Quality Act (CEQA) Document Update) Each Permittee shall modify planning procedures for preparing and reviewing CEQA documents to consider potential storm water quality impacts and provide for appropriate mitigation, with immediate effect. The CEQA guidelines shall require consideration of the following: (a-g)*

The requirement will require that the City of Pomona revise its CEQA processes to address these issues. However, it is unclear whether the threshold for significance for storm water impacts will be the projects that are required to have a SUSMP. Interpreting these regulations in this manner will require extended environmental review on projects that are currently categorically exempt or may be approved with a negative declaration.

Page 35 12. *(General Plan Update) Each Permittee shall update appropriate elements of its General Plans to include watershed and storm water quality and quantity management considerations no later than [540 days from permit adoption date]. Appropriate elements include, but are not limited to, water quality protection, development goals and policies, open space goals and policies, preservation of and integration with natural features, and water conservation policies.*

The requirement will require that the City revise their general plan within 540 days of adoption. Without State funds for implementing the regulation, it will be difficult for cash-strapped cities to comply.

While I agree with the Regional Water Quality Control Board's effort to reduce the volume and velocity of storm water runoff and improve water quality to protect beneficial uses. I believe that the Draft Permit does not offer a realistic solution to the problem. I ask that you carefully consider our comments and I look forward to further dialogue with the Regional Water Quality Control Board staff in the NPDES Permit renewal process.

Sincerely,

Douglas Dunlap
City Manager

[redacted]

To: Xavier Swamikannu, Chief, LA/Long Beach Storm Water Unit
Regional Water Quality Control Board, Los Angeles Region

From: Darren Madkin, Deputy City Manager
(909) 620-2061 voice (909) 620-3707 fax

Fax #: (213) 576-5777
Re: Draft NPDES Permit Renewal No. CAS614001
Date: May 16, 2001
Pages: 5 (including cover sheet)

RANCHO PALOS VERDES

Marilyn Lyon - Mayor
John C. McTaggart - Mayor Pro Tem
Lee Byrd - Councilmember
Barbara Ferraro - Councilmember
Douglas W. Stern - Councilmember

May 15, 2001

Mr. Dennis Dickerson, Executive Officer
Regional Water Quality Control Board, Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

SUBJECT: Comments on April 13, 2001 Draft Storm Water Permit

Mr. Dickerson:

This letter is in response to your April 13, 2001 draft of the new storm water permit. The City of Rancho Palos Verdes has the following comments and concerns:

Definition of an Environmentally Sensitive Areas

The Definition is too encompassing
Most of the Palos Verdes Peninsula is labeled as an Environmental Sensitive Area (ESA). With such a definition, nearly all-new developments and city projects will be required to comply with the numerical discharge limits. For instance, a landowner building a 4,000 square foot (0.1 acre) hillside project would normally be required to implement the five (5) mitigation measures of Section 4.C.3.a. But, in an ESA, a full SUSMP is required, and the project will be subject to the Numerical Discharge Criteria (capture or treat runoff) required in 4.C.5.h. It is not clear what benefits can be expected from the additional requirements.

Lack of Equity
There is simply a lack of equity in the new permit regarding the type of projects that will require SUSMPs. In general, construction of a 3,000 square foot residential patio in the City of Rancho Palos Verdes will require a SUSMP while a 95,000 square foot commercial project in most other cities will not.

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http://www.palosverdes.com/rpv

The exhibit is vague and difficult to read
The area designated by the board as an ESA is vague. Moreover the scale of the exhibit is such that the City will have a difficulty determining if a project falls into an ESA or not.

The area designated as an ESA does not take into account work completed by the City of Rancho Palos Verdes to identify environmentally sensitive areas
The City of Rancho Palos Verdes has extensive and detailed knowledge about the environmental resources in the City. The City has worked closely with the California Department of Fish and Game and the U.S. Fish and Wildlife Service to define the environmentally sensitive areas in the City to identify biological resources. The proposed ESA exhibit does not match the information available at the City.

Industrial Commercial Inspections

The new permit will require inspections at all city businesses. This will be costly for the City and its merchants, and will have limited benefit. It is not clear how the City will fund these new activities.

The existing permit requires visits based on the type of business and the potential for exposure. In addition there is always the opportunity to add businesses that were found to be potential polluters. The new permit starts with the assumption that all industrial and commercial businesses (including: insurance offices, shoe stores, etc) are polluters and need to be inspected, which is not the case. The program will require the implementation of "minimum BMPs" at facilities that have not historically been shown to be potential causes of storm water pollution.

Street Sweeping

The new program will require the City to significantly increase street sweeping in residential neighborhoods. This is a blanket requirement that has no allowances for cities that have historically not been high litter generators. The City of Rancho Palos Verdes is not under a trash and litter TMDL requirement, and has not been notified that trash discharge is a problem from our (primarily high-income residential) community. The City of Rancho Palos Verdes has its maintenance crews regularly pick up trash along major thoroughfares. In addition the City has recently installed catch basin inserts to collect trash and litter from priority catch basins.

The City of Rancho Palos Verdes should not be required to increase its street-sweeping because other areas of Los Angeles County may have litter problems. Any requirement for street sweeping should be flexible and based on the amount of trash generated by the City, and not an arbitrary one-size-fits-all determination.

Requirement for an update to the General Plan

In reviewing the permit, it appears that it will require the City to update its General Plan within 18 months to include a new section on storm water. It will be costly for the City to make such an update, and there appears to be little justification.

The City Council for the City of Rancho Palos Verdes appreciates the opportunity to comment on the new Municipal Storm Water Permit. The City Council believes that the permit should be flexible enough to accommodate the unique characteristics of each city, and avoid expending funds on programs that will have limited benefits.

Sincerely,

Marilyn Lyon
Mayor

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A Fax From The City of Rancho Palos Verdes

Date: 5/16/01

To: Regional Water Quality Control Board
Dennis Dickerson
Phone: 213-576-6600
Fax: 213-576-6640

From: City of Rancho Palos Verdes
Dean E. Allison
Phone: 310-544-5252
Fax: 310-544-5292

Pages:
Subject:

From:
Dean E. Allison
Director of Public Works
City of Rancho Palos Verdes
30940 Hawthorne Boulevard
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City of Rosemead

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May 10, 2001

Mr. Xavier Swamikannu
Chief, Los Angeles/Long Beach Stormwater Unit
Los Angeles Regional Water Quality Control Board
320 W. 4th Street, Room 200
Los Angeles, CA 90013

Dear Mr. Swamikannu:

We understand that the Los Angeles Regional Water Quality Control Board is accepting input regarding Draft NPDES Permit No. CAS614001. Rosemead has a number of concerns with the draft permit. Let me first say that we support clean water programs. Additionally, we feel that to achieve the state's water quality objectives a balanced approach is required – one that takes into account economic considerations and solutions that will be attainable and effective. We don't need more unworkable programs that drain limited resources and detrimentally impact the funding of other essential public services and environmental programs.

First, we are troubled that the draft permit will expand the NPDES programs with no consideration for the added financial costs imposed upon cities - in affect creating another unfunded state mandate. It is our understanding that the State Board's charge is to take a balanced approach to regulating water quality. If so, why does the draft permit discourage regional solutions that have the advantages of leveraging economies of scale?

It also appears the draft permit proposes shifting the state's current responsibilities for inspection and enforcement to the cities. It was our understanding that the state and the federal Environmental Protection Agency entered into a Memorandum of Agreement that places the inspection function under the state's responsibility. Now, the permit appears not only to require that the cities inspect state permitted facilities (2,400 in Los Angeles County), but the language is so broad that cities may be required to inspect all industrial and commercial businesses.

We believe these issues along with those being raised by the Coalition for Practical Regulation must be addressed before the Regional Board moves forward with this permit renewal.

Sincerely,

Jay T. Imperial

JAY T. IMPERIAL
Mayor

City of Rosemead

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May 16, 2001

Xavier Swamikannu, Chief
LA/Long Beach Storm Water Unit
Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Via Facsimile – (213) 576-6640
Original to follow via U.S. Mail

Subject: Comments on Draft NPDES Permit for LA County

Dear Mr. Swamikannu:

After reviewing and discussing with our City Attorney the draft National Pollutant Discharge Elimination System (NPDES) Permit for Los Angeles County (the County) which was released by the Regional Water Quality Control Board (the Board) on April 13, 2001, the City of Rosemead (the City) would like to make a few general and a number of specific comments for consideration and inclusion in the final Permit proposed for adoption later this year:

While we appreciate that it is in everyone's best interests to protect our valuable water resources, we believe that the Regional Board must recognize the limited fiscal and physical resources available to the cities who must enforce the requirements of the NPDES Permit (the Permit). The City is genuinely concerned about accomplishing the greatly expanded obligations contained in the Permit. We also believe the Regional Board is attempting to transfer its inspection obligation to the cities without addressing the severe financial burden this will place on them.

Additionally, we believe the Regional Board, in several places in the Permit, exceeds its authority under the Clean Water Act, and we indicate these instances in the comments that follow. We also note that although the "Maximum Extent Practicable" (MEP) standard appears in the "Definitions" section (Section 5) of the Permit, it is, unfortunately, not applied anywhere in the Permit, and we have suggested places where adding the MEP language is appropriate. Finally, we are very concerned about the serious legal perils this Permit creates for all cities in the region, and we hope some key modifications will eliminate the dangerous liabilities that would otherwise be placed on local agencies.

The City would like to make the following comments on specific provisions of the draft Permit. Our comments are listed in the order the issues addressed are raised in the Permit, not in order of importance:

PAGE	SECTION/PROVISION	COMMENTS
PART 2.	*RECEIVING WATER LIMITATIONS*	
13	1. and 2.	These standards are impossibly strict; if one constituent of concern is found in a discharge, a city can be held liable and will be open to lawsuits from citizens and environmental groups. The Municipal Separate Storm Sewer System (MS4) protects our citizens and their homes and businesses from flooding, but the MS4 cannot operate under these restrictions. At most, these requirements should apply to pollutants over which each Permittee has the authority to enforce the Permit. In addition, both provisions should include language incorporating the MEP standard.
PART 3.	*STORM WATER QUALITY MANAGEMENT PLAN IMPLEMENTATION, MONITORING, AND REPORTING*	
14	A. Responsibilities of the Principal Permittee. 1.	The Principal Permittee cannot and should not act on behalf of – and instead of – the individual Permittees. The right of each Permittee to address the Regional Board on its own behalf must be preserved.
16	D. Executive Advisory Committee (EAC)	The EAC is identified, but no responsibilities are mentioned. The EAC's duties, which are scattered throughout the Permit, should be listed here.
17	E. General Requirements and F. SQMP Modifications	Because Permit modifications will be made as Total Maximum Daily Loads (TMDLs) are developed or as problems are identified, the Permit will be a constantly moving target. This also removes the provision for budget cycle coordination from the Permit. Instead, the Permit should allow, as the current Permit does, for implementation during applicable budget cycles, with a minimum of 90 days' advance notice required for inclusion in any particular budget cycle.
19	G. Legal Authority. 1.m)	The Clean Water Act does not cover "*potential* contribution of pollutants"; this exceeds the Board's authority. The words "or potential contribution" should be deleted from this provision.
19	G. Legal Authority. 1.n)	Entering private property requires either the owner's permission or a warrant. Permittees cannot simply assert their authority; they must follow proper procedure before entering a site to inspect, sample, or view records. The provision should not apply to "all" procedures and cannot encourage the violation of due process rights. Again, delete the words "or potentially polluted" because this exceeds the Board's authority under the Clean Water Act.

PAGE	SECTION/PROVISION	COMMENTS
19	G. Legal Authority. 1.n)	As worded, the cities and/or the county will have to significantly increase the sites to be visited by inspection staff. The Board is shifting its inspection responsibilities to the cities without any funding mechanism to pay for the extra work. Additionally, it is highly unlikely that Permittees will have the authority to require reports related to illegal discharges from private industrial facilities.
19	G. Legal Authority. 1.p)	City storm water ordinances implementing the Permit cannot be made effective "immediately upon the adoption" of the Permit. Even if a city could predict and implement these requirements – requirements which the Board itself has yet to finalize – this would violate public policy by circumventing proper ordinance adoption procedures. Permittees should be given a minimum of 180 days to implement the Permit once it is adopted by the Regional Board.
20	I. Storm Water Management Program Budget	The obligation to inspect industrial sites must be resolved with the County. Currently, Educational Site Visits are funded and carried out by the County, through either Industrial Waste or the Health Department, and it should be determined quickly whether this service will be expanded to include the new inspections.
21	K. Modification	As written, the Executive Director or the Regional Board, on the petition of *anyone*, can order the modification of the Storm Water Quality Mitigation Plan; all that is required is submission of a petition within 60 days of the Annual Report. This provision should be removed or modified.
PART 4.	*SPECIAL PROVISIONS*	
23	A. Public Information and Participation Program. 1. Programs for Residents. d) Outreach and Education	Providing all schools in a city's jurisdiction with educational information that both meets the requirements of the Permit and does not violate a particular school district's requirements will be expensive, time-consuming, and ineffective. Standardized educational materials should be developed by the Board in conjunction with the State Department of Education.

PAGE	SECTION/PROVISION	COMMENTS
23	A.1.e) Pollutant-Specific Outreach	For the Los Angeles River Watershed, the target campaign list includes Trash, Nutrients, Indicator Bacteria, Metals, and Pesticides, the same as the watershed's TMDL list for the next five years. And although the last TMDL does not go into effect until 2006, the Permit would require that programs be developed within six months of Permit adoption. Agencies should not be required to develop these programs until the relevant TMDL has been established.
24	A.2. Programs for Businesses. b) Business Assistance Program	It is not possible for a city to provide confidential business assistance that is separate from the enforcement function. The word "confidential" should be deleted from this provision. Additionally, the "small business" that will qualify for this assistance should have fewer than 25 employees, and a company's "lack of funding for private consulting" should be based on its revenue not exceeding $1 million per year.
25	B. Programs for Industrial/Commercial Inspections	The numerous and extensive efforts identified in this section are very expensive and extremely labor intensive. The Permit attempts to transfer the Board's obligations in this regard to the cities without giving them the ability to collect the revenue to fund the effort. These inspection requirements should be removed until adequate funding sources are identified.
26	B.2. Source Identification (Industrial/ Commercial)	Where is the database that was developed four years ago? Will that previous effort have to be redone?
27	B.4. BMP Implementation a)	Requiring the implementation of designated minimum Best Management Practices (BMPs) at *all* industrial/ commercial sites in a city's jurisdiction is inconsistent with the General Industrial Permit, which does not cover all industrial/commercial sites. In addition, requiring implementation of BMPs that are "more stringent than those required by the State Industrial Permit" will be impossible to enforce against sites not covered by the General Industrial Permit. Finally, with proper funding, the Permittees should be responsible for suggesting and encouraging the use of BMPs to industrial/commercial site owners and monitoring their implementation, with the responsibility for enforcing compliance lying with the Regional Board.

PAGE	SECTION/PROVISION	COMMENTS
27	B.4.b)	This provision is vague and unenforceable and should be removed. At a minimum, it should be revised to limit Permittees' obligations to recommending and encouraging the use of BMPs.
28	B.7. Reporting of Non-compliant Sites (Industrial/ Commercial)	Nearly every commercial/industrial site in every city will be "non-compliant" because almost any site could meet the requirement of at least one violation of "local ordinance, permits, plans, or this Order." This provision needs to be revised to reflect the intent of the Permit.
29	C. Programs for Development Planning. 1.a) through f)	These provisions should include the "MEP" standard.
29	C. Programs for Development Planning. 1.e)	The "reasonable limit" on the clearing of vegetation from a project site is impractical and unreasonable because in the desert southwest under normal conditions, undeveloped sites are "bare soil" most of the summer. This provision needs to be revised.
29-30	C.2. Peak Flow Control	This significantly extends the impact of the restriction because it expands the previous limit of systems subject to erosion. If a city drains to a natural drainage course or to a flood control system with a soft bottom, the discharge is not to exceed the predevelopment flow. This equates to retention on site and discharge to the ground for all storms below 0.75 inches of rain. In dense urban areas, this is impractical and unreasonable. By attempting to control the discharge of non-polluted storm water, the Board is exceeding its authority. This provision should be eliminated in its entirety, or alternatively, Subsection e), "Soft-bottom segments of other receiving waters within Los Angeles County," should be deleted.
31	C.3. Standard Storm Water Mitigation Plans. b)(1)	As written, this provision covers a hillside residential *development* of 10,000 square feet or more. But if the intent is to cover hillside residential projects with 10,000 square feet of *lot space*, the wording should be revised.
32	C.4. Numerical Design Criteria	With the application of numerical design standards for BMP selection on all categories of SUSMP projects, the Board is exceeding its authority in restricting methods of attaining the MEP standard. This needs to be revised.
33	C.8. Redevelopment Projects	The definition of "Redevelopment Project" should match the definition contained in the SUSMP provisions approved by the State Board. The SUSMP should apply to the addition only.

PAGE	SECTION/PROVISION	COMMENTS
35	C.12. General Plan Update	The time allowed is not sufficient for all Permittees to undertake a General Plan update at the same time on subjects that are very complex. The Regional Board needs to address what specific elements are to be revised and then allow three (3) years for Permittees to budget for and implement the targeted revisions.
39	D.4.	If a city does not currently use an electronic tracking system for grading permits, implementing one will be costly and time-consuming. The information to be tracked must be identified. Inspection results should not be part of this tracking system due to the clerical time required for data entry.
40	E. Public Agency Activities.	No specific requirements for dry weather diversion are provided. Since detailed requirements are outlined for other listed activities, it is not clear whether the Permit will require each Permittee to address dry weather diversion. If this is an optional public agency activity, it should be removed from the list; if it is mandatory, the Board should provide more detailed requirements.
40	E. 2. Sewage System Operations	The Board is attempting to implement "Capacity, Management, Operation and Maintenance (CMOM)" regulations before they are enacted at the USEPA. Until these regulations are EPA-adopted, the Board should not require implementation by Permittees.
42	E.5. Landscape and Recreational Facilities Maintenance. f)	The MEP standard should be applied in this provision.
42	E.6. Storm Drain Operation and Management	This provision imposes the Trash TMDL on cities not currently under Trash TMDLs, without a 12-year program to characterize the trash generation rates. This provision should have a 12-year implementation schedule.
44-46	F. Program to Eliminate Illicit Connections and Discharges	The Board is requiring that each Permittee's program be revised within 180 days of Permit adoption, but this is not nearly enough time to implement all the requirements. Because the Principal Permittee has the responsibility of managing and tracking all suspected illicit connections and illicit discharges, the Principal Permittee should also be charged with: (1) determining exactly what data is to be collected and reported; and (2) developing and distributing a specific computer application system for all Permittees to use in conveying this information to the Principal Permittee. Additionally, the references in this section (and perhaps elsewhere) to "Lead Permittee" should be changed to "Principal Permittee."

PAGE	SECTION/PROVISION	COMMENTS
PART 6.	*STANDARD PROVISIONS*	
59	K. Twenty-four Hour Reporting	This provision should state to whom the Permittees are required to make the reports.

The City of Rosemead supports the efforts of the Regional Water Quality Control Board and the goals of the Clean Water Act. We will continue to make all possible efforts to help in the important work of cleaning up the waters of Los Angeles County. We sincerely hope the NPDES Permit, as revised, will combine our need for clean water with a fair sense of fiscal reality so that all parties can benefit from this vital effort.

The City of Rosemead thanks you for your consideration of our comments, and we request that this letter be made a part of the administrative record.

If you have any questions, please contact me at 626-569-2151.

Very truly yours,

CITY OF ROSEMEAD

Ken Rukavina, P.E.
City Engineer

City of San Gabriel

◆ City With A Mission ◆ Founded 1771 ◆

2001 MAY 18 P 2:49

May 16, 2001

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street
Los Angeles, California 90013

Subject: EAC Comments: First Municipal NPDES Permit Draft

Dear Mr. Dickerson:

Attached for your consideration are comments prepared by the City of San Gabriel in response to the draft Los Angeles County Municipal NPDES permit, dated April 13, 2001.

It should be noted that the draft permit is a substantial improvement over the current permit. It is less problematic in several key areas. There is, however, room for additional improvement. The written comments prepared by the City are intended to accomplish this by identifying areas of concern including: (1) program requirements that appear to be unnecessarily labor intensive and costly; (2) new provisions that would make permit compliance unjustifiably more stringent while increasing Permittee exposure to administrative enforcement actions and third party litigation; and (3) permit language that seems unclear and contradictory in a few places.

It is also suggested that Regional Board staff consider a different approach for presenting, evaluating, and responding to comments relating to municipal NPDES issues. In the past, permittee comments that were contrary to Regional Board staff views were usually rejected without compelling reason. Often ignored were the Permittees legitimate concerns for the cost and effectiveness of proposed requirements. This has resulted in the adoption of unpopular and very controversial permit requirements. Permittees were thus faced with the narrow options of either accepting unreasonable requirements or challenging them administratively and legally.

In the interest of avoiding a similar fate with next municipal NPDES permit, the following is proposed:

1. Staff should make a conscientious effort to discuss and resolve concerns raised by Permittees rather than just issuing a written rejection with a brief explanation as to why. Instead, a forum is recommended to promote dialog aimed towards achieving mutual agreement. Although workshops are fine for communicating requirements and identifying general issues, they are not effective in identifying specific areas of concern or resolving disagreement. Smaller work groups are needed because they can provide better attention to issues. A work group could be comprised of Permittee representatives and Regional Board staff for each program area (e.g., development planning, development construction, illicit discharge and connection detection and elimination, etc.). The work groups should concentrate on working-out essential compliance concerns. Once this is done,

developing language-related details would be relatively simple. Also, an objective third party should be involved to facilitate discussion and resolve disagreement.

2. Criteria for determining the reasonability of new permit requirements or existing ones should be developed. Such criteria should include objective readings of (a) 40 CFR 122.26 (storm water regulations under the Clean Water Act); (b) Phase II storm water rules, which are scheduled to take effect in 2003; and (c) Porter-Cologne Act (state water code) -- to justify requirements not specified in the Clean Water Act, in terms of beneficial use protection, using scientific data rather than subject judgment.

3. A general workshop on Phase II storm water rules promulgated by the USEPA and scheduled for implementation in 2003, should be held to educate Regional Board staff, Permittees, and other interested parties on these new municipal NPDES permit requirements. To that end, Regional Board staff is encouraged to join with Permittees in inviting a representative from USEPA Region 9 to conduct a workshop.

4. Delay adoption of the new permit until Phase II rules have been fully identified, evaluated, and incorporated into the next permit.

In closing, the City appreciates the time and effort that Regional Board staff has invested in preparing the draft permit and looks forward to participating with it in developing a new permit that will truly improving water quality in the most cost effective manner possible. In the meantime, should you have any questions, please call me.

Sincerely,

Bruce D. Mattern, PE, TE
City Engineer

Cc: P. Michael Paules, City Manager
Steven A. Preston, FAICP, Deputy City Manager
Robert L. Kress, City Attorney
TECS Environmental Services

File: f/cd/engr/NPDES/City New Permit Letter-1 051601

1. **Inspection/Enforcement of GIASWP Facilities and GCASWP Construction Sites (Part 4.A.2)**

o Proposed New Requirement

The draft permit proposes to require Permittees to conduct inspections and of and, if necessary, to take enforcement action against: (1) industrial facilities subject to General Industrial Activity Storm Water Permit (GIASWP) requirements; and (2) construction sites subject to General Construction Activity Storm Water (GCASWP) requirements. Regional Board staff is of the opinion that municipalities are "ultimately responsible for the quality of storm water discharges to the MS4" -- including those discharged from GIASWP subject-facilities and GCASWP-subject construction projects.

– Issue

This proposed requirement would impose an additional cost burden on municipalities. This is unfair given that (1) the State Water Resources Control Board (SWRCB) and, by extension, the regional board, have already assumed responsibility for this task; and (2) the state collects fees from subject industrial facilities and construction sites. As to the notion that municipalities are responsible for discharges to the MS4 from GIASWP-subject industrial facilities and GCASWP-subject construction projects, regional board staff overlooks the fact that the state has elected to regulate discharges from industrial facilities and certain construction projects (those that disturb 5 acres or more or soil disturbance) just as it has elected to regulate discharges to the MS4 from municipalities. In other words, the state has preempted this presumed responsibility.

– Recommendation

Discuss with regional board staff cost-effective alternatives. These include: (i) continuing the site visit program (only if funded by the principal Permittee); (ii) requiring municipalities to compel industrial facilities to obtain a GIASWP (e.g., as a condition for a business license); (iii) reporting industrial facilities that do not have GIASWPs to regional board staff for enforcement action; (iv) reporting GIASWP industrial facilities that appear not to be in compliance with permit requirements (usually non-implementation of BMPs) and, if necessary, to conduct joint enforcement action.

2. **Eliminating Discretionary Approval from the SUSMP Evaluation Process (Part 4.C.3)**

o Proposed New Requirement

The draft permit proposes to remove "discretionary approval" as an important criterion for determining if certain categories of projects and redevelopments would be subject to Standard Urban Storm Water Mitigation Plan (SUSMP) requirements. Currently, a project is subject to SUSMP requirements if it is one of the 8 types of development projects/redevelopment projects

and if it is subject to discretionary approval (i.e., CEQA clearance, conditional use permit, or other action involving the subjective judgment of a municipal official).

– Issue

The Regional Board -- together with the environmental community – attempted to remove discretionary approval when it adopted the SUSMP in March of 2000. That attempt was immediately challenged by a group of cities, which resulted in the restoration of discretionary approval by the State Water Resources Control Board. Most cities still want to retain discretionary approval to enable them not to require costly and questionably effective infiltration/treatment controls unless there is a compelling reason to do so. The City is aware that the regional board's attempt to eliminate discretionary approval was motivated by the understandable need to "close a loophole" that enables cities to exempt subject projects from all SUSMP measures by simply not requiring them to undergo discretionary approval (e.g., a coincidental EIR or mitigated negative declaration).

– Recommendation

There is, however, an alternative to these extremes. Although the City is opposed to eliminating discretionary approval it would not be opposed to:

i. Requiring the 8 categories of projects to be subject to all SUSMP measures except infiltration or treatment controls, which would remain discretionary. This means that (a) general mitigation measures (e.g., not increasing peak runoff from pre-development levels, protecting slopes and channels, etc.) and (b) use-specific mitigation measures (e.g., canopies for gas stations, and runoff control design requirements for wash areas, service bays, and loading docks, etc.) would be prescribed for all subject projects.

ii. Requiring infiltration/treatment controls (designed to meet the .75" or other numeric standards), only when the chemical constituents contained in runoff from the completed project would have impairing a beneficial use of a receiving water, as determined by its listing as pollutant on the 303(d) list of impaired water bodies).

3. Making 40,000 f^2 Industrial/Commercial Facilities SUSMP-Subject

o Proposed New Requirement

The draft permit proposes to add -- no later than March 9, 2001 -- one-acre industrial/commercial development projects to the list of subject SUSMP projects. Further, it seeks to define one acre as 40,000 square feet instead of 43,560 square feet.

– Issue

Adding 1-acre industrial/commercial facilities to the SUSMP-applicable list appears inappropriate. This new requirement is based on the anticipation of the Phase II rule

pertaining to the new developments. It is inappropriate because the Phase II rule here applies to projects that "result in the land disturbance of greater than or equal to 1 acre" – not 1 acre of impervious area. In fact, the Phase II rule here would seem to apply to all new development projects, including land-use determined SUSMP projects.

– Recommendation

Eliminate this requirement and reevaluate SUSMP requirements against the Phase II rule as it relates to controlling pollutants from new developments.

3. General Plan Update (Part.4.C.12)

o Proposed New Requirement

The draft permit proposes to require municipalities to incorporate "watershed and storm water quality and quantity management considerations no later 540 days from the permit adoption date." The current permit requires this element to be incorporated into General Plans when they are updated.

– Issue

The need to update municipal General Plans to include, essentially, a storm water quality element has always been unclear. Further, it seems that the SUSMPs have obviated the need for a General Plan storm water quality element. This is because the SUSMP requires the prescription of controls for new developments and redevelopment projects that operate to minimize post-construction runoff pollution. That being the case, why is a storm water quality element needed, especially for built-out municipalities?

– Recommendation

Unless the regional board staff can justify the purpose of adding a storm water quality element addition to General Plans, this requirement should be eliminated.

4. **Outreach and Education to School Districts (4.A.1.d)**

o Proposed New Requirement

The draft permit proposes that Permittees provide unified[1] school districts within their jurisdictions materials, live presentations, brochures, and other media necessary to storm water-educate a minimum of 50% of all school children (K-12 to 12), every 2 years.

[1]Why are just "unified" school districts included here and not other school districts?

– Issue

The City does not object to this requirement as long as it does not have to pay for it. It represents a new cost to cities. The City takes the view that schools districts are essentially state-managed governmental entities. The state, therefore, should provide the resources necessary to educating school children on runoff pollution prevention. Under the current permit, the principal Permittee has assumed responsibility for this task. Using flood control funds (collected from residents and businesses) it has visited every subject school in every city and unincorporated areas of Los Angeles County. If the principal Permittee agrees to continue performing this task as a means of satisfying this new requirement, the City would not object to it.

– Recommendation

Makes this requirement a principal Permittee responsibility.

5. **Outreach and Education to Small Businesses (4.A.1.b)**

o Proposed New Requirement

Municipalities would be required to develop and implement a Business Assistance Program to educate subject businesses to provide: (i) on-site technical assistance/consultant by telephone; (ii) BMP-information and educational materials; (3) provide information about environmental consultants, hazardous waste treatment, hauling, disposal, and recycling services, and control practices; and (4) information regarding pollution prevention and control practices.

– Issue

This proposed new task is arbitrary because it enlarges the commercial facilities category from gas, stations, automotive facilities, and restaurants to include any business that (1) has less than 100 employees; (2) lacks funding for private consulting; (3) lacks expertise necessary to understand and comply with storm water regulations; and (4) has requested assistance or was referred through the industrial/commercial inspection program. Effectively, this could include any business, such as consulting agencies, tailor shops, barbershops, and hundreds of others that can hardly be considered as pollution generators. This proposed requirement -- which would be very costly -- does not provide any justification as to why it is necessary to perform outreach to these types of businesses.

– Recommendation

Eliminate this requirement.

6. **Lowering the Threshold for Local SWPPPs (Part 4.D.2)**

o Proposed New Requirement

The draft permit proposes to lower the threshold for requiring local SWPPPs (storm water pollution prevention plans). Currently, local SWPPPs are required from construction projects that are expected to cause a soil disturbance of 2 to fewer than 5 acres, by grading, clearing, and or excavating. The proposed permit would lower this threshold to between 1 acre and under 5 acres.

– Issue

Lowering the threshold here seems to be associated with the change in Phase II municipal NPDES regulations. In 2003, the threshold for construction sites requiring GCASWPs will be lowered from 5 acres to 1 acre. Apparently, Regional Board staff believes that this should have corresponding affect on the next level of construction requirements. The City disagrees with this rationale. The reason SWPPPs exist in the first place is to enable inspection/enforcement personnel to determine compliance with BMPs that are intended to: (1) reduce sediment and chemical constituent discharges to the MS4; and (2) certify that no illicit discharges would be released to the MS4. For larger construction sites, a SWPPP is necessary because of the time it would take for inspection personnel to do a walk-through. However, for smaller construction sites this really is not a problem. Inspection personnel can easily identify if basic BMPs – which really do not require SWPPPs – are in place. Thus, to require Permittees to require local SWPPPs for projects even under 2 acres would be a waste of municipal time and money.

Beyond this, given that the threshold for determining GCASWP construction sites will be lowered in 2003 from 5 acres to 1 acre and given that the current permit requirement of prescribing minimum BMPs to construction sites of 2 acres and under has been effective, there is no reason tamper with that requirement now.

– Recommendation

Maintain the current soil disturbance requirement for local SWPPPs (2 and 5 acres) until 2003 when 1-plus acre projects will require GCASWP coverage.

7. **Training Contractors (Part 4.D.1.a)**

o Proposed New Requirement

Under the construction program, municipal Permittees would be required to "implement an education program to discuss storm water pollution prevention and controls at construction sites and distribute educational materials targeted at the construction community during meetings, workshops, pre-construction meetings, and inspections." The current requirement is to provide over-the-counter developer/contractor information regarding development construction requirements.

– Issue

The additional requirement is superfluous and, if approved, would impose additional unnecessary costs on cities. Actually, at present, communicating construction program requirements to contractors/developers is a simple task -- it involves: (1) providing, over-the-counter, written materials and verbal information regarding requirements associated with the three categories of construction projects; and (2) providing a list and description of construction-related BMPs. The draft permit proposes additional tasks that accomplish the same thing, but in more elaborate and costly terms.

– Recommendation

Eliminate this requirement because it would do nothing to improve the City's ability to inform contractors/developers of their obligations under the municipal NPDES permit.

8. **Public Agency (Part 4.E.6.a)**

o Proposed New Requirement

The draft permit proposes to increase the frequency of street sweeping to at least 4 times per month "in areas generating high volumes of trash and "an average not less the twice per month in areas that generate moderate volumes of trash on traffic collector streets and residential areas." The current permit calls for a minimum of sweeping once a month. Street sweeping is essentially a trash-reducing BMP.

– Recommendation

Given the cost associated with increased street sweeping and that there are less expensive trash-mitigation BMPs available, this requirement should be eliminated.

9. **Public Agency (Part 4.E.5.b)**

o Proposed New Requirement

The draft permit proposes to increase the frequency of clean-outs of priority catch basins (40% full) from once a year, just prior to the wet season (October 1 to April 30), to twice a year, from May 1 to September 30 (during the dry season).

– Issue

The justification for making this requirement is based more on the fact that the Ventura permit (adopted in June of 2000) requires it. Actually, increasing the frequency here makes no sense. Whether a catch basin is full at any level during the dry season is issueless because trash and other material trapped in it are not going to get into receiving water because the hydraulic mechanism is not there (with the exception of a rare storm event every now and then). This is why, historically, catch basin clean-outs are done just before the wet

season. While storm events during the wet season do occur from time-to-time, they are so rare as to warrant imposing such an additional expense on municipalities.

– Recommendation

Eliminate this requirement because it would do very little reduce trash discharges to the receiving water. Further, the zero trash TMDL for Los Angeles River and Ballona Creek watershed-resident cities would make this requirement superfluous. Beyond this, it denies Permittees the option of resorting to more cost-effective trash reducing BMPs.

10. **Public Agency (Part 4.E.6.c)**

o Proposed New Requirement

The draft permit proposes to increase the frequency of parking lot cleanings from once a month to twice a month.

– Issue

Under the current permit, only parking lots with 25-plus spaces are subject to monthly cleanings. Thus, the scope of this requirement is enlarged to include every municipal parking lot, regardless of size, and increases the cleaning and inspection frequency from once a month to twice a month. The justification for making this requirement more stringent is not clear.

– Recommendation

Eliminate the requirement and, therewith, its additional cost, unless data can be provided to show that an increase in parking lot cleanings from once a month to twice month would improve receiving water quality.

II. OTHER CHANGES TO PROPOSED MUNICIPAL NPDES PERMIT

1. **Discharge Prohibitions (Part 1.2.c)**

o Issue

The proposed permit eliminates street wash water as an exempted non-storm water discharge. No explanation is provided as to why. CFR 40.122.26 places street wash water under the exempted non-storm water discharge category (as opposed to an illicit discharge). Proposed Phase II regulations also Exempt Street wash water – and other categories of non-storm water

discharges -- unless the operator of the municipal separate storm sewer system ("MS4") deems it to be " significant contributor of pollutants." To date, no such determination has been made.

- Recommendation

Street wash water should be listed as an exempted non-storm water discharge (along with sidewalk wash water) as long as it does not (i) contain surfactants or other chemical constituents; or (ii) transport sediment, particulates, or other material to the storm drain.

2. **Model Programs** (no reference in draft permit)

o Issue

The proposed draft permit makes no clear reference to the current model programs. Are they to be re-written or carried-over from this permit to the new one?

3. **Notice to Meet and Confer** (no permit reference)

o Issue

The proposed permit lacks the "notice to meet and confer" provision contained in the existing permit. This provision is intended to, among other things, resolve compliance issues prior to the regional board taking enforcement action. Most compliance issues -- as recently demonstrated by the Notices of Violations issued by the regional board to several municipal Permittees -- are the result of misinterpretation or misunderstanding on the part of regional board staff, especially new staff. The meet and confer provision is intended to allow the resolution of disagreements arising out of misinterpretation or misunderstanding before issuing NOVs -- in itself an enforcement action. Since it is likely that the draft permit will contain provisions that are open to interpretation, it makes sense to retain the meet and confer provision.

4. **Receiving Waters Limitations (Part 2)**

o Issue

Notwithstanding that Ventura and Long Beach municipal permits contain the same receiving water limitations language presented in the proposed permit, the City is opposed to such language and prefers, instead, existing permit language. Or, in the alternative, remove the following provisions as mentioned by the principal Permittee:

1. Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited.
2. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance.

The City objects to the proposed existing permit language because it does not allow implementing the permit and its programs as a means of achieving compliance with water quality standards and objectives. This seems to undermine the whole purpose of the permit, which is to tolerate some exceedances of water quality standards/objectives (contained in the Los Angeles Basin Plan) -- provided, of course that permit condition are met. It is simply impossible for any municipality to prevent all discharges that cause or contribute to the violation of water quality standards or objectives.

5. **180 Day Implementation Program Period (various program provisions)**

o The Issue

The proposed permit contains a 180-day implementation date for each program category (development planning, development construction illicit connection/discharge, public agency, and public education). 180 days is not enough time to revise and implement each of the revised programs because of budgetary constraints. Most cities need at least one year of advanced time to budget for new costs. Some cities need two years.

----------END----------

To: XAVIER SWAMIKANNU

Company: LOS ANGELES REGIONAL WATER QUALITY CONTROL

Fax Number: 213.576.6640

From: ENGINEERING

Date: 5/16/1

Pages: 12 (including cover sheet)

Remarks: HARD COPY TO FOLLOW

City of San Gabriel

fax

Please contact me if any portion of this facsimile is ille
incomplete, or if you have any further questions.

Thank you.

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425 South Mission Drive
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R0002389

City of San Marino

Parks and Public Works Department

May 15, 2001 2001 MAY 24 P 2:34

JOHN ALDERSON
Director

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street
Los Angeles, California 90013

Subject: **EAC Comments In Re: First Municipal NPDES Permit Draft**

Dear Mr. Dickerson:

Submitted herewith for your consideration are comments prepared by the City of San Marino in response to the draft Los Angeles County Municipal NPDES permit (hereinafter "draft permit"), dated April 13, 2001.

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It is also suggested that regional board staff consider a different approach for presenting, evaluating, and responding to comments in re: municipal NPDES issues. In the past, permittee comments that were contrary to regional board staff views were usually rejected without compelling reason. Often ignored were the permittees legitimate concerns for the cost and effectiveness of proposed requirements. This has resulted in the adoption of unpopular and very controversial permit requirements. Permittees were thus faced with the narrow options of either accepting unreasonable requirements or challenging them administratively and legally.

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City of San Marino

Parks and Public Works Department

2001 MAY 24 P 2:34

JOHN ALDERSON
Director

and regional staff for each program area (e.g., development planning, development construction, illicit discharge and connection detection and elimination, etc.). The work groups should concentrate on working-out essential compliance concerns. Once this is done, developing language-related details would be relatively simple. Also, an objective third party should be involved to facilitate discussion and resolve disagreement.

2. Criteria for determining the reasonability of new permit requirements or existing ones should be developed. Such criteria should include objective readings of (a) 40 CFR 122.26 (storm water regulations under the Clean Water Act); (b) Phase II storm water rules, which are scheduled to take effect in 2003; and (c) Porter-Cologne Act (state water code) -- to justify requirements not specified in the Clean Water Act, in terms of beneficial use protection, using scientific data rather than subject judgment.

3. A general workshop on Phase II storm water rules promulgated by the USEPA and scheduled for implementation in 2003, should be held to educate regional board staff, permittees, and other interested parties on these new municipal NPDES permit requirements. To that end, regional board staff is encouraged to join with permittees in inviting a representative from USEPA Region 9 to conduct the workshop.

4. Delay adoption of the new permit until Phase II rules have been fully identified, evaluated, and incorporated into the next permit.

In closing, the City appreciates the time and effort that regional board staff has invested in preparing the draft permit and looks forward to participating with it in developing a new permit that will truly improve water quality in the most cost effective manner possible. In the meantime, should you have any questions, please call me.

Sincerely,

John Alderson
Director of Parks and Public Works

cc: Mr. David Nahai, Chairman
Los Angeles Regional Water Quality Control Board

Mr. Art Bagget, Chairman
State Water Resources Control Board

R0002391

2200 Huntington Drive, San Marino, CA 91108-2691 • Phone: (626) 300-0700 Fax: (626) 300-0709 • Email: jalderson@ci.san-marino.ca.us

1. **Inspection/Enforcement of GIASWP Facilities and GCASWP Construction Sites (Part 4.A.2)**

- Proposed New Requirement

The draft permit proposes to require permittees to conduct inspections and of and, if necessary, to take enforcement action against: (1) industrial facilities subject to General Industrial Activity Storm Water Permit (GIASWP) requirements; and (2) construction sites subject to General Construction Activity Storm Water (GCASWP) requirements. Regional Board staff is of the opinion that municipalities are "ultimately responsible for the quality of storm water discharges to the MS4" -- including those discharged from GIASWP subject-facilities and GCASWP-subject construction projects.

- Issue

This proposed requirement would impose an additional cost burden on municipalities. This is unfair given that (1) the State Water Resources Control Board (SWRCB) and, by extension, the regional board, have already assumed responsibility for this task; and (2) the state collects fees from subject industrial facilities and construction sites. As to the notion that municipalities are responsible for discharges to the MS4 from GIASWP-subject industrial facilities and GCASWP-subject construction projects, regional board staff overlooks the fact that the state has elected to regulate discharges from industrial facilities and certain construction projects (viz., those that disturb 5 acres or more or soil disturbance) just as it has elected to regulate discharges to the MS4 from municipalities. In other words, the state has preempted this presumed responsibility.

- Recommendation

Discuss with regional board staff cost-effective alternatives. These include: (i) continuing the site visit program (only if funded by the principal permittee); (ii) requiring municipalities to compel industrial facilities to obtain a GIASWP (e.g., as a condition for a business license); (iii) reporting industrial facilities that do not have GIASWPs to regional board staff for enforcement action; (iv) reporting GIASWP industrial facilities that appear not to be in compliance with permit requirements (usually non-implementation of BMPs) and, if necessary, to conduct joint enforcement action.

2. **Eliminating Discretionary Approval from the SUSMP Evaluation Process (Part 4.C.3)**

- Proposed New Requirement

The draft permit proposes to remove "discretionary approval" as an important criterion for determining if certain categories of projects and redevelopments would be subject to Standard Urban Storm Water Mitigation Plan (SUSMP) requirements. Currently, a project is subject to SUSMP requirements if it is one of the 8 types of development projects/redevelopment projects and if it is subject to discretionary approval (i.e., CEQA clearance, conditional use permit, or other action involving the subjective judgment of a municipal official).

- Issue

The Regional Board -- together with the environmental community – attempted to remove discretionary approval when it adopted the SUSMP in March of 2000. That attempt was immediately challenged by a group of cities, which resulted in the restoration of discretionary approval by the State Water Resources Control Board. Most cities still want to retain discretionary approval to enable them not to require costly and questionably-effective infiltration/treatment controls unless there is a compelling reason to do so. The City is aware that the regional board's attempt to eliminate discretionary approval was motivated by the understandable need to "close a loophole" that enables cities to exempt subject projects from all SUSMP measures by simply not requiring them to undergo discretionary approval (e.g., a coincidental EIR or mitigated negative declaration).

- Recommendation

There is, however, an alternative to these extremes. Although the City is opposed to eliminating discretionary approval it would not be opposed to:

i. Requiring the 8 categories of projects to be subject to all SUSMP measures except infiltration or treatment controls, which would remain discretionary. This means that (a) general mitigation measures (e.g., not increasing peak runoff from pre-development levels, protecting slopes and channels, etc.) and (b) use-specific mitigation measures (e.g., canopies for gas stations, and runoff control design requirements for wash areas, service bays, and loading docks, etc.) would be prescribed for all subject projects.

ii. Requiring infiltration/treatment controls (designed to meet the .75" or other numeric standards), only when the chemical constituents contained in runoff from the completed project would have impairing a beneficial use of a receiving water, as determined by its listing as pollutant on the 303(d) list of impaired water bodies).

3. Making 40,000 f^2 Industrial/Commercial Facilities SUSMP-Subject

o Proposed New Requirement

The draft permit proposes to add -- no later than March 9, 2001 -- one acre industrial/commercial development projects to the list of subject SUSMP projects. Further, it seeks to define one acre as 40,000 square feet instead of 43,560 square feet.

- Issue

Adding 1 acre industrial/commercial facilities to the SUSMP-applicable list appears inappropriate. This new requirement is based on the anticipation of the Phase II rule pertaining to the new developments. It is inappropriate because the Phase II rule here applies projects that "result in the land disturbance of greater than or equal to 1 acre" – not 1 acre of impervious area. In fact, the Phase II rule here would seem to apply to all new development projects, including land-use determined SUSMP projects.

- Recommendation

Eliminate this requirement and reevaluate SUSMP requirements against the Phase II rule as it relates to controlling pollutants from new developments.

3. General Plan Update (Part 4.C.12)

o Proposed New Requirement

The draft permit proposes to require municipalities to incorporate "watershed and storm water quality and quantity management considerations no later 540 days from the permit adoption date." The current permit requires this element to be incorporated into General Plans when they are updated.

- Issue

The need to update municipal General Plans to include, essentially, a storm water quality element has always been unclear. Further, it seems that the SUSMPs have obviated the need for a General Plan storm water quality element. This is because the SUSMP requires the prescription of controls for new developments and redevelopment projects that operate to minimize post-construction runoff pollution. That being the case, why is a storm water quality element needed, especially for built-out municipalities?

- Recommendation

Unless the regional board staff can justify the purpose of adding a storm water quality element addition to General Plans, this requirement should be eliminated.

4. **Outreach and Education to School Districts (4.A.1.d)**

o Proposed New Requirement

The draft permit proposes that permittees provide unified[1] school districts within their jurisdictions materials, live presentations, brochures, and other media necessary to storm water-educate a minimum of 50% of all school children (K-12 to 12), every 2 years.

- Issue

The City does not object to this requirement as long as it does not have to pay for it. It represents a new cost to cities. The City takes the view that schools districts are essentially state-managed governmental entities. The state, therefore, should provide the resources necessary to educating school children on runoff pollution prevention. Under the current permit, the principal permittee has assumed responsibility for this task. Using flood control funds (collected from residents and businesses) it has visited every subject school in every city and unincorporated areas of Los Angeles County. If the principal permittee agrees to continue performing this task as a means of satisfying this new requirement, the City would not object to it.

[1]Why are just "unified" school districts included here and not other school districts?

- Recommendation

Makes this requirement a principal permittee responsibility.

5. **Outreach and Education to Small Businesses (4.A.1.b)**

o Proposed New Requirement

Municipalities would be required to develop and implement a Business Assistance Program to educate subject businesses to provide: (i) on-site technical assistance/consultant by telephone; (ii) BMP-information and educational materials; (3) provide information about environmental consultants, hazardous waste treatment, hauling, disposal, and recycling services, and control practices; and (4) information regarding pollution prevention and control practices.

- Issue

This proposed new task is arbitrary because it enlarges the commercial facilities category from gas, stations, automotive facilities, and restaurants to include any business that (1) has less than 100 employees; (2) lacks funding for private consulting; (3) lacks expertise necessary to understand and comply with storm water regulations; and (4) has requested assistance or was referred through the industrial/commercial inspection program. Effectively, this could include any business, such as consulting agencies, tailor shops, barber shops, and hundreds of others that can hardly be considered as pollution generators. This proposed requirement -- which would be very costly -- does not provide any justification as to why it is necessary to perform outreach to these types of businesses.

- Recommendation

Eliminate this requirement.

6. **Lowering the Threshold for Local SWPPPs (Part 4.D.2)**

o Proposed New Requirement

The draft permit proposes to lower the threshold for requiring local SWPPPs (storm water pollution prevention plans). Currently, local SWPPPs are required from construction projects that are expected to cause a soil disturbance of 2 to under 5 acres, by grading, clearing, and or excavating. The proposed permit would lower this threshold to between 1 acre and under 5 acres.

- Issue

Lowering the threshold here seems to be associated with the a change in Phase II municipal NPDES regulations. In 2003, the threshold for construction sites requiring GCASWPs will be lowered from 5 acres to 1 acre. Apparently, Regional Board staff believes that this should have corresponding affect on the next level of construction requirements. The City disagrees with this rationale. The reason SWPPPs exist in the first place is to enable inspection/enforcement personnel to determine compliance with BMPs that are intended to: (1) reduce sediment and chemical constituent discharges to the MS4; and (2) certify that no illicit discharges would be released to the MS4. For larger construction sites, a SWPPP is

necessary because of the time it would take for inspection personnel to do a walk-through. However, for smaller construction sites this really is not a problem. Inspection personnel can easily identify if basic BMPs – which really do not require SWPPPs – are in place. Thus, to require permittees to require local SWPPPs for projects even under 2 acres would be a waste of municipal time and money.

Beyond this, given that the threshold for determining GCASWP construction sites will be lowered in 2003 from 5 acres to 1 acre and given that the current permit requirement of prescribing minimum BMPs to construction sites of 2 acres and under has been effective, there is no reason tamper with that requirement now.

- Recommendation

Maintain the current soil disturbance requirement for local SWPPPs (2 and 5 acres) until 2003 when 1-plus acre projects will require GCASWP coverage.

7. **Training Contractors (Part 4.D.1.a)**

   ○ Proposed New Requirement

Under the construction program, municipal permittees would be required to "implement an education program to discuss storm water pollution prevention and controls at construction sites and distribute educational materials targeted at the construction community during meetings, workshops, pre-construction meetings, and inspections." The current requirement is to provide over-the-counter developer/contractor information regarding development construction requirements.

- Issue

The additional requirement is superfluous and, if approved, would impose additional unnecessary costs on cities. Actually, at present, communicating construction program requirements to contractors/developers is a simple task -- it involves: (1) providing, over-the-counter, written materials and verbal information regarding requirements associated with the three categories of construction projects; and (2) providing a list and description of construction-related BMPs. The draft permit proposes additional tasks that accomplish the same thing, but in more elaborate and costly terms.

- Recommendation

Eliminate this requirement because it would do nothing to improve the City's ability to inform contractors/developers of their obligations under the municipal NPDES permit.

8. **Public Agency (Part 4.E.6.a)**

   ○ Proposed New Requirement

The draft permit proposes to increase the frequency of street sweeping to at least 4 times per month "in areas generating high volumes of trash and "an average not less the twice per month in areas that generate moderate volumes of trash on traffic collector streets and

residential areas." The current permit calls for a minimum of sweeping once a month. Street sweeping is essentially a trash-reducing BMP.

- Recommendation

Given the cost associated with increased street sweeping and that there are less expensive trash-mitigation BMPs available, this requirement should be eliminated.

9. **Public Agency (Part 4.E.5.b)**

- Proposed New Requirement

The draft permit proposes to increase the frequency of clean-outs of priority catch basins (40% full) from once a year, just prior to the wet season (October 1 to April 30), to twice a year, from May 1 to September 30 (during the dry season).

- Issue

The justification for making this requirement is based more on the fact that the Ventura permit (adopted in June of 2000) requires it. Actually, increasing the frequency here makes no sense. Whether a catch basin is full at any level during the dry season is issueless because trash and other material trapped in it are not going to get into a receiving water because the hydraulic mechanism is not there (with the exception of a rare storm event every now and then). This is why, historically, catch basin clean-outs are done just before the wet season. While storm events during the wet season do occur from time-to-time, they are so rare as to warrant imposing such an additional expense on municipalities.

- Recommendation

Eliminate this requirement because it would do very little reduce trash discharges to the receiving water. Further, the zero trash TMDL for Los Angeles River and Ballona Creek watershed-resident cities would make this requirement superfluous. Beyond this, it denies permittees the option of resorting to more cost-effective trash reducing BMPs.

10. **Public Agency (Part 4.E.6.c)**

- Proposed New Requirement

The draft permit proposes to increase the frequency of parking lot cleanings from once a month to twice a month.

- Issue

Under the current permit, only parking lots with 25-plus spaces are subject to monthly cleanings. Thus, the scope of this requirement is enlarged to include every municipal parking lot, regardless of size, and increases the cleaning and inspection frequency from once a month to twice a month. The justification for making this requirement more stringent is not clear.

– Recommendation

Eliminate the requirement and, therewith, its additional cost, unless data can be provided to show that an increase in parking lot cleanings from once a month to twice month would improve receiving water quality.

II. OTHER CHANGES TO PROPOSED MUNICIPAL NPDES PERMIT

1. **Discharge Prohibitions (Part 1.2.c)**

- Issue

The proposed permit eliminates street wash water as an exempted non-storm water discharge. No explanation is provided as to why. CFR 40.122.26 places street wash water under the exempted non-storm water discharge category (as opposed to an illicit discharge). Proposed Phase II regulations also exempt street wash water – and other categories of non-storm water discharges -- unless the operator of the municipal separate storm sewer system ("MS4") deems it to be " significant contributor of pollutants." To date, no such determination has been made.

- Recommendation

Street wash water should be listed as an exempted non-storm water discharge (along with sidewalk wash water) as long as it does not (i) contain surfactants or other chemical constitutents; or (ii) transport sediment, particulates, or other material to the storm drain.

2. **Model Programs** (no reference in draft permit)

- Issue

The proposed draft permit makes no clear reference to the current model programs. Are they to be re-written or carried-over from this permit to the new one?

3. **Notice to Meet and Confer** (no permit reference)

- Issue

The proposed permit lacks the "notice to meet and confer" provision contained in the existing permit. This provision is intended to, among other things, resolve compliance issues prior to the regional board taking enforcement action. Most compliance issues -- as recently demonstrated by the Notices of Violations issued by the regional board to several municipal permittees -- are the result of misinterpretation or misunderstanding on the part of regional board staff, especially new staff. The meet and confer provision is intended to allow the resolution of disagreements arising out of misinterpretation or misunderstanding

before issuing NOVs -- in itself an enforcement action. Since it is likely that the draft permit will contain provisions that are open to interpretation, it makes sense to retain the meet and confer provision.

4. **Receiving Waters Limitations (Part 2)**

- Issue

Notwithstanding that Ventura and Long Beach municipal permits contain the same receiving water limitations language presented in the proposed permit, the City is opposed to such language and prefers, instead, existing permit language. Or, in the alternative, remove the following provisions as mentioned by the principal permittee:

1. Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited.
2. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance.

The City objects to the proposed existing permit language because it does not allow implementing the permit and its programs as a means of achieving compliance with water quality standards and objectives. This seems to undermine the whole purpose of the permit, which is to tolerate some exceedances of water quality standards/objectives (contained in the Los Angeles Basin Plan) -- provided, of course that permit condition are met. It is simply impossible for any municipality to prevent all discharges that cause or contribute to the violation of water quality standards or objectives.

5. **180 Day Implementation Program Period (various program provisions)**

- The Issue

The proposed permit contains a 180 day implementation date for each program category (development planning, development construction illicit connection/discharge, public agency, and public education). 180 days is not enough time to revise and implement each of the revised programs because of budgetary constraints. Most cities need at least one year of advanced time to budget for new costs. Some cities need two years.

CITY OF SAN MARINO
PARKS AND PUBLIC WORKS

FACSIMILE TRANSMITTAL SHEET

TO: Dennis Dickerson	FROM: John Alderson
COMPANY: Regional Board	DATE: 05/21/01
FAX NUMBER: 213.576.6625	TOTAL NO. OF PAGES INCLUDING COVER: 11
PHONE NUMBER:	SENDER'S REFERENCE NUMBER:
RE: First Municipal NPDES Permit Draft	YOUR REFERENCE NUMBER:

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

We apologize for inconvenience the wait may have caused.

John

CITY OF SIGNAL HILL

2175 Cherry Avenue • Signal Hill, California 90806

May 16, 2001

Dr. Xavier Swamikannu
California Regional Water Quality Control Board
Los Angeles Region
Stormwater Program
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Subject: Comments to April Draft of NPDES Permit No. CAS614001

Dear Dr. Swamikannu:

As you know I have been involved in the NPDES Stormwater permit process for several years. During this time I have participated in many of the permit functions and in various capacities. The most current effort I participated in was the EAC subcommittee which discussed the draft permit prior to its release. I am very concerned with my perception of the results of the meetings and feel a need to comment on them.

EAC representatives met with the Board staff on nine separate occasions to discuss the Board's proposed enhancements to the stormwater program submitted by the permittees. The permittees had previous expended a significant effort to develop these programs which were submitted as part of the ROWD. These efforts included all of the appropriate considerations such as cost, responsiveness, available resources, legal responsibility and effectiveness. I very concerned about the ease of which the Board has rejected the permittees programs without justification. I am also concerned about the ease of which the Board included new programs in the draft permit, again without justification.

We all spent many hours going over your proposed enhancements and shared our opinions as to the merits of the proposals and efforts required to implement them. In every case it was your ultimate determination that permittees current efforts were inadequate and cost of the enhancements were warranted. I find it

hard to believe that the Board came to the meetings with an openness to discuss the issues. I hope that your offer to meet and discuss was more than an opportunity for your staff to preview the permittees objections.

I think the best example of the Board's unwillingness to consider the permittees input is the requirement for a countywide GIS mapping of the storm drain system. This item was significant enough that it was discussed over two sessions. All of the EAC members testified to the fact that the development of the system was a monumental effort requiring millions of dollars and thousands of staff-hours. We also stated that the benefit your staff associated to the system did not warrant the cost. We identified much less costly ways of accomplishing the same result. However, your staff has persisted in including the GIS system in the draft permit. Perhaps the next time we go through this exercise the Board will share with us the criteria it uses to determine whether an enhancement is warranted. Because if there is no criteria, the next time we can save each other time and not go through a useless exercise.

Sincerely,

Ed Schroder

Ed Schroder
Public Works Director/City Engineer

ES/csm

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2001 JUN -8 P 1:28

June 4, 2001

Mr. Dennis Dickerson, Executive Officer
California Regional Water Quality Control Board, Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Subject: Draft Municipal Stormwater Permit

Dear Mr. Dickerson;

We appreciate the opportunity your staff has provided for us to review and comment on the draft permit for "Municipal Storm Water and Urban Runoff". Our specific comments are:

FINDINGS

Item 10: Storm Water Management Plan is acceptable

This item states that the proposed Storm Water Management Plan submitted by the County was acceptable. If this is the case, then there appears to be no reason for the changes in structure and requirements in the proposed permit.

The Model Programs (or SWMP, or SQMP) in the previous permit were generally in continuous development, up until the approval of the SUSMP program in late 2000. Why are they now being changed again?

Item 39: Enforcement Authority

The draft permit requires the permittees to perform some enforcement actions for the State Permit, but specifically states in this finding that the enforcement authority for NPDES permits belongs to the Regional Board. If the State is the enforcement authority, the State should also be responsible for inspection and enforcement.

Typographical Error - This section should read "...in the Los Angeles Region for the two statewide..."

Part 1 – Discharge Prohibitions

Section 2 | The procedure for permittees to petition for exemption of a discharge has been removed with no explanation, and the authority for adding or removing items from the list given to only the Executive Officer. Permittees should retain the ability to petition the Board to add exempt discharges.

Part 2 – Receiving Water Limitations

Section 2.3.a | The procedure does not make sense. The municipal Permittees are not responsible for conducting water quality monitoring, so how will they know when they are exceeding water quality standards?

Section 2.A | This section exempts the County (the Principal Permittee) from ensuring the compliance of any of the co-permittees, but does not do the reverse (exempt the co-permittees from ensuring the compliance of the County).

Section 2.A.1 | This section states that the Principal Permittee will negotiate NPDES requirements with the Board. The permit should not be written to infer in any way that the Co-Permittees are giving up their right to negotiate the permit with the Board directly, if the County holds a contrary position.

Section B.2 and B.6 | The coordination and facilitation elements of these two items are effectively duplicates. They should be combined, or one removed.

Addition needed | Missing from the draft permit is a statement to the effect that; by implementing the Permit, Permittees have met the criteria of Maximum Extent Practicable under the Clean Water Act.

Part 3 – SQMP Implementation, Monitoring and Reporting

Section 3.C | This section requires the WMC to do several things, with no real guidelines (i.e. prioritize pollution control efforts, develop-update-monitor adequate implementation, etc.). It seems as if the Board wants to set up the WMC as a middle oversight body rather than as an information exchange body.

Another difficulty is that several "prioritization" items are assigned to the WMC, but there is no requirement that an

individual permittee comply with anything from the WMC. Either the WMC should be given enforcement authority over the Permittees (which is not feasible), or the "prioritization" should be left up to the individual permittees, since they are ultimately responsible, not the WMC.

Section 3.D

There are no requirements for any actions by the EAC, although there are actions referred to in other sections. These responsibilities should be consolidated here.

Section 3.E.1

This appears to in essence be a duplicate of Part 3, B.5. It also implies that there would be elements of the SQMP that are NOT consistent with the terms of this permit. This should be reworded or removed as unnecessary.

Section 3.F

There should be a consistent method referenced for modification of the SQMP. In various areas this is noted as both the responsibility of the permittees and the principal permittee. As the SQMP is a "county wide" document and part of the permit itself, isn't it true that any change should involve all the permittees? If the change is only to an individual permittees program, then the permit should state that, and not use the SQMP terminology.

Section 3.G

This section covers the legal authority of the Permittees. Is this area intended for the permittees to constantly be revising their ordinances? Is there a way to write a general ordinance, and just change the implementation policy every time the SQMP is changed?

Section 3.G.1.m and 3.G.1.n

This requires that the City control discharges from sites under the GIASP and GCSP. This seems to result in either a) a duplicate enforcement process, or b) the City being the enforcing body for the State requirements. Neither is acceptable, since in the first case this is basically unnecessary duplication, and in the second not the City's responsibility to enforce the state permit.

Section 3.G.1.p

The permit requires an ordinance "effective immediately upon the adoption of this Order." Is it even legally possible to write an ordinance adopting permit requirements that have not yet been finalized?

Section 3.H

This section requires copies of "...any proposed changes to the SQMP and its components...". Per Part 3 Section F, changes to the SQMP must be either approved by the Board or done at the request

	of the Board. Why include additional copies of something they already have?
Section 3.I	The budget reporting system should be revised based on the difficulties encountered so far. There should be a consistent way of determining which budget line items to report, and the submittal date should be based on the City's fiscal year.
Section 3.K	This item should be included in Part 3 Section F.3

Part 4 – Special Provisions

Part 4.A – Public Information ***Section A.1.c***	The permit does not state who will be responsible for the new signage, the city that the "designated access point" is in, or the owner of the channel?
Part 4.B – Industrial Commercial Inspections ***Section 4.B***	As this program has been changed in focus from education to inspection and enforcement, it should be moved to the ICID program for ease of reference.
Part 4.B – Industrial Commercial Inspections ***Section 4.B.1***	This sentence is unclear. Permittee shall require use of what by businesses. It appears to mean require use of the program itself, but that is not possible.
Part 4.B – Industrial Commercial Inspections ***Section 4.B.2***	On it's face, this requirement appears to include every industrial or commercial business in the City. This is contradictory to the existing permit, which required visits based on the type of business and the potential for exposure. Under the older program, there was always the opportunity and requirement to add businesses that were found to be potential polluters.
Part 4.B – Industrial Commercial Inspections ***Section 4.B.3.c***	This item should be clarified to indicate who is required to do the inspections. Is this intended for the County Health Department to take over storm water inspections at restaurants? If so, who is considered responsible if exceedances occur?
Part 4.B – Industrial Commercial Inspections ***Section 4.B.5.b***	This table can be significantly simplified by just stating that any business shall be inspected every 24 months, not less than twice during the permit (since all inspection requirements are identical).
Part 4.B – Industrial Commercial Inspections ***Section 4.B.5.d***	How is the permittee to determine if the board has made an inspection or not? This is indeed an irrelevant section, since even if the Board HAS inspected the site, that will not eliminate the

potential liability if something were to occur and the City had NOT inspected it, therefore it would be in the Cities best interest to inspect it anyway.

Part 4.B – Industrial Commercial Inspections

Section 4.B.6.a

Please specify what sanctions would satisfy this requirement (financial, criminal, etc.).

Part 4.B – Industrial Commercial Inspections

Section 4.B.7.a

This notification requirement is burdensome and confusing. If there is a violation of a City ordinance, the City is the enforcing agency. Such a broad definition of "non-compliance" would result in a very large number of "violations" being referred to the board, which would normally be handled by the City in an educational manner (educational materials, follow up letter, one or two informal follow up inspections). These are normally single incidents, either accidental or by someone who hadn't been adequately educated at the time, and are typically not repeated once the situation is explained to them. What the Board would do with this information is unclear, since a violation of a City ordinance may not be a violation of a Board order that they could enforce, and such incidents are reported in the Annual Report.

Additionally, if there is a violation of a State requirement, the State is the enforcing agency (see Item 39) and has not delegated that responsibility formally to the Cities. Although the City may be able to review information that a business submits to the State (an SWPPP for example) to ensure that it also meets City standards, the City does not have the authority to determine whether or not a given SWPPP is in compliance with State requirements. The City cannot perform the State's job function in this manner.

And, as was discussed at length during the previous permit, the Cities do not have the authority to require a given business to obtain a State permit, since it is solely the States responsibility to determine whether or not an NPDES permit is necessary for a given site. A City can require that a business provide proof that they are complying with state requirements (such as an NOI), but do they now keep duplicate records listing all the businesses that have been determined NOT to require a permit? (i.e. Category 11 dischargers with no exposure)

Part 4.C – Development Planning

Section 4.C.3

Under the previous permit only discretionary projects within these specific categories were subject to the SUSMP. The draft permit greatly expands the scope of work by eliminating the

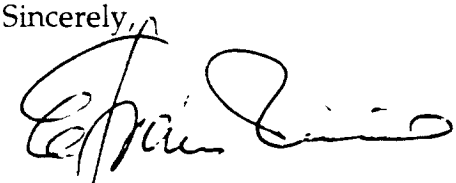
	"discretionary" clause. Cities should be permitted to exercise their discretional in determining which projects require an SUSMP and which do not.
Part 4.C – Development Planning ***Section 4.C.3.c***	SUSMPs have been developed for each of the other types of projects (listed in section C.3.b), but no equivalent standard for projects in Environmentally Sensitive Areas (ESA) has been developed. Since projects in these areas could take any number of forms, it is unlikely that a "standard" plan could be effectively developed. Also, as of this draft of the permit, a list of these "ESA"s has not been provided for review.
Part 4.C – Development Planning ***Section 4.C.9***	It is unclear what authority the City has to regulate property transfers between two private parties. Is the City now to keep track of each property transfer and maintain records on who is responsible for maintenance of a site?
Part 4.C – Development Planning ***Section 4.C.10***	This section is completely unclear as to its intent and specifics.
Part 4.C – Development Planning ***Section 4.C.12***	Most cities are on a set schedule to update general plans (5 years or so), as such the 540 day deadline should be changed to the next scheduled general plan revision.
Part 4.C – Development Planning ***Section 4.C.14***	This should be assigned to the Principal Permittee, since it is intended to be a countywide consistent document.
Part 4.D – Development Construction ***Section 4.D.1.a***	This should be clarified further. Is it intended that City personnel attend all such meetings or workshops, or merely to provide information for voluntary distribution during such meetings?
Part 4.D – Development Construction ***Section 4.D.1.c***	Several of the items listed in the "minimum BMPs" are not actually BMPs. If a minimum list is envisioned, it should be spelled out here.
Part 4.D – Development Construction ***Section 4.D.2***	The statement that a Local SWPPP can replace a State SWPPP should be removed, as it is not relevant to the Local SWPPP requirements.
Part 4.D – Development	Permittee inspectors additional actions must be limited to local

Construction ***Section 4.D.3***	ordinances and codes, since they do not have the authority to enforce state laws in this case. The phrase "...if non-compliance continues..." is vague, a set method and rational for referring sites to the Board should be determined to avoid confusion.
Part 4.D – Development Construction ***Section 4.D.4.b***	Without additional rationale, the requirement of an "electronic system" is not justified. Smaller cities may not have a number of grading permits that would justify the expense of installing a new tracking system. Does the Board intend to eventually require electronic submittal of all grading permits? If so, a standardized format should be developed now for ease of future integration.
Part 4.E – Public Agency Activities ***Section 4.E.1***	Details for the sections on Parking Facilities Management, Public Industrial Activities, and Dry Weather Diversions have been omitted from this draft.
Part 4.E – Public Agency Activities ***Section 4.E.2***	Does the Board intend for the CMOM provisions to take the place of the Sewer section of the Public Agency program? If so, this should be specified.
Part 4.E – Public Agency Activities ***Section 4.E.4.f***	A blanket requirement to reduce use, storage and handling is not useful, some guidelines (i.e. reduction from what amounts?) must be provided.
Part 4.E – Public Agency Activities ***Section 4.E.5***	There is a numbering inconsistency in this section, and duplication of at least one item.
Part 4.E – Public Agency Activities ***Section 4.E.6.a***	No definition of "high" and "moderate" volumes of trash was provided. In addition, the TMDL also does not contain definitions of "high" and "moderate" volumes of trash. Section IV.A of the L.A. River Trash TMDL states that if the Cities rely on the Default Baseline Waste Load Allocation, *"The final Default Baseline Waste Load Allocation, as described in compressed volume and/or dry weight, will be specified in the stormwater permit."* This definition also appears to have been omitted.
Part 4.E – Public Agency Activities ***Section 4.E.7***	A section should be inserted stating that the Permittees shall not be held responsible under the permit for discharges in excess of numerical limits that occur as a result of such emergency

	situations. For instance, a sewer break and overflow resulting from an earthquake would likely exceed bacteria discharge limits. If BMPs (such as containment) are delayed because of the emergency, the Permittees should not be held liable for the discharge that occurred between the earthquake and the implementation of the BMP.
Part 4.F – ICID Program ***Section 4.F.1.a***	The permittee should be given the option to adopt the ICID section of the SQMP as written, to avoid the additional paperwork of creating an unnecessary document.
Part 4.F – ICID Program ***Section 4.F.1.b***	The tracking system should be developed by the Principal Permittee, since the goal is to have a consistent and countywide system controlled by the Principal Permittee.
Part 4.F – ICID Program ***Section 4.F.2.b***	What is the rational for specifying that the Permittees specifically consider the 1994 Northridge quake and the "civil unrest"?

Thank you for the opportunity to review and comment. The cost and complexity of this program should be kept in mind as your staff is finalizing the next draft. Please call me if you have any questions.

Sincerely,



Efrain Mino
City Engineer

2001 MAY 24 P 2:52

9701 LAS TUNAS DRIVE • TEMPLE CITY • CA 91780 • (626) 285-2171

May 15, 2001

Mr. Dennis Dickerson, Executive Officer
California Regional Water Quality Control Board, Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Subject: Draft Municipal Stormwater Permit

Dear Mr. Dickerson:

We appreciate the opportunity your staff has provided for us to review and comment on the draft permit for "Municipal Storm Water and Urban Runoff". Our specific comments are:

FINDINGS

Item 10: Storm Water Management Plan is acceptable

This item states that the proposed Storm Water Management Plan submitted by the County was acceptable. If this is the case, then there appears to be no reason for the changes in structure and requirements in the proposed permit.

The Model Programs (or SWMP, or SQMP) in the previous permit were generally in continuous development, up until the approval of the SUSMP program in late 2000. Why are they now being changed again?

Item 39: Enforcement Authority

The draft permit requires the permittees to perform some enforcement actions for the State Permit, but specifically states in this finding that the enforcement authority for NPDES permits belongs to the Regional Board. If the State is the enforcement authority, the State should also be responsible for inspection and enforcement.

Typographical Error - This section should read "...in the Los Angeles Region for the two statewide..."

Part 1 - Discharge Prohibitions

Section 2

The procedure for permittees to petition for exemption of a discharge has been removed with no explanation, and the authority for adding or removing items from the list is given only to he Executive Officer. Permittees should retain the ability to petition the Board to add exempt discharges.

Part 2 - Receiving Water Limitations

Section 2.3.a

The procedure does not make sense. The municipal Permittees are not responsible for conducting water quality monitoring, so how will they know when they are exceeding water quality standards?

Section 2.A

This section exempts the County (the Principal Permittee) from ensuring the compliance of any of the co-permittees, but does not do the reverse (exempt the co-permittees from ensuring the compliance of the County).

Section 2.A.1

This section states that the Principal Permittee will negotiate NPDES requirements with the Board. The permit should not be written to infer in any way that the Co-Permittees are giving up their right to negotiate the permit with the Board directly, if the County holds a contrary position.

Section B.2 and B.6

The coordination and facilitation elements of these two items are effectively duplicates. They should be combined, or one removed.

Addition needed

Missing from the draft permit is a statement to the effect that; by implementing the Permit, Permittees have met the criteria of Maximum Extent Practicable under the Clean Water Act.

Part 3 - SQMP Implementation, Monitoring and Reporting

Section 3.C

This section requires the WMC to do several things, with no real guidelines (i.e. prioritize pollution control efforts, develop-update-monitor adequate implementation, etc.). It seems as if the Board wants to set up the WMC as a middle oversight body rather than as an information exchange body.

Another difficulty is that several "prioritization" items are

assigned to the WMC, but there is no requirement that an individual permittee comply with anything from the WMC. Either the WMC should be given enforcement authority over the Permittees (which is not feasible), or the "prioritization" should be left up to the individual permittees, since they are ultimately responsible, not the WMC.

Section 3.D There are no requirements for any actions by the EAC, although there are actions referred to in other sections. These responsibilities should be consolidated here.

Section 3.E.1 This appears to in essence be a duplicate of Part 3, B.5. It also implies that there would be elements of the SQMP that are NOT consistent with the terms of this permit. This should be reworded or removed as unnecessary.

Section 3.F There should be a consistent method referenced for modification of the SQMP. In various areas this is noted as both the responsibility of the permittees and the principal permittee. As the SQMP is a "county wide" document and part of the permit itself, isn't it true that any change should involve all the permittees? If the change is only to an individual permittee's program, then the permit should state that, and not use the SQMP terminology.

Section 3.G This section covers the legal authority of the Permittees. Is this area intended for the permittees to constantly be revising their ordinances? Is there a way to write a general ordinance, and just change the implementation policy every time the SQMP is changed?

Section 3.G.1.m and 3.G.1.n This requires that the City control discharges from sites under the GIASP and GCSP. This seems to result in either a) a duplicate enforcement process, or b) the City being the enforcing body for the State requirements. Neither is acceptable, since in the first case this is basically unnecessary duplication, and in the second not the City's responsibility to enforce the state permit.

Section 3.G.1.p The permit requires an ordinance "effective immediately upon the adoption of this Order." Is it even legally possible to write an ordinance adopting permit requirements that have not yet been finalized?

Section 3.H This section requires copies of "...any proposed changes to the

	SQMP and its components...". Per Part 3 Section F, changes to the SQMP must be either approved by the Board or done at the request of the Board. Why include additional copies of something they already have?
Section 3.I	The budget reporting system should be revised based on the difficulties encountered so far. There should be a consistent way of determining which budget line items to report, and the submittal date should be based on the City's fiscal year.
Section 3.K	This item should be included in Part 3 Section F.3

Part 4 - Special Provisions

Part 4.A – Public Information ***Section A.1.c***	The permit does not state who will be responsible for the new signage, the city that the "designated access point" is in, or the owner of the channel?
Part 4.B – Industrial Commercial Inspections ***Section 4.B***	As this program has been changed in focus from education to inspection and enforcement, it should be moved to the ICID program for ease of reference.
Part 4.B – Industrial Commercial Inspections ***Section 4.B.1***	This sentence is unclear. Permittee shall require use of what by businesses. It appears to mean require use of the program itself, but that is not possible.
Part 4.B – Industrial Commercial Inspections ***Section 4.B.2***	On its face, this requirement appears to include every industrial or commercial business in the City. This is contradictory to the existing permit, which required visits based on the type of business and the potential for exposure. Under the older program, there was always the opportunity and requirement to add businesses that were found to be potential polluters.
Part 4.B – Industrial Commercial Inspections ***Section 4.B.3.c***	This item should be clarified to indicate who is required to do the inspections. Is this intended for the County Health Department to take over storm water inspections at restaurants? If so, who is considered responsible if exceedances occur?
Part 4.B – Industrial Commercial Inspections ***Section 4.B.5.b***	This table can be significantly simplified by just stating that any business shall be inspected every 24 months, not less than twice during the permit (since all inspection requirements are identical).

Part 4.B – Industrial Commercial Inspections

Section 4.B.5.d

How is the permittee to determine if the board has made an inspection or not? This is indeed an irrelevant section, since even if the Board HAS inspected the site, that will not eliminate the potential liability if something were to occur and the City had NOT inspected it, therefore it would be in the City's best interest to inspect it anyway.

Part 4.B – Industrial Commercial Inspections

Section 4.B.6.a

Please specify what sanctions would satisfy this requirement (financial, criminal, etc.).

Part 4.B – Industrial Commercial Inspections

Section 4.B.7.a

This notification requirement is burdensome and confusing. If there is a violation of a City ordinance, the City is the enforcing agency. Such a broad definition of "non-compliance" would result in a very large number of "violations" being referred to the board, which would normally be handled by the City in an educational manner (educational materials, follow up letter, one or two informal follow up inspections). These are normally single incidents, either accidental or by someone who hadn't been adequately educated at the time, and are typically not repeated once the situation is explained to them. What the Board would do with this information is unclear, since a violation of a City ordinance may not be a violation of a Board order that they could enforce, and such incidents are reported in the Annual Report.

Additionally, if there is a violation of a State requirement, the State is the enforcing agency (see Item 39) and has not delegated that responsibility formally to the Cities. Although the City may be able to review information that a business submits to the State (an SWPPP for example) to ensure that it also meets City standards, the City does not have the authority to determine whether or not a given SWPPP is in compliance with State requirements. The City cannot perform the State's job function in this manner.

And, as was discussed at length during the previous permit, the Cities do not have the authority to require a given business to obtain a State permit, since it is solely the State's responsibility to determine whether or not an NPDES permit is necessary for a given site. A City can require that a business provide proof that they are complying with state requirements (such as an NOI), but do they now keep duplicate records listing all the businesses that have been determined NOT to require a permit? (i.e. Category 11 dischargers with no exposure)

Part 4.C – Development Planning ***Section 4.C.3***	Under the previous permit only discretionary projects within these specific categories were subject to the SUSMP. The draft permit greatly expands the scope of work by eliminating the "discretionary" clause. Cities should be permitted to exercise their discretion in determining which projects require an SUSMP and which do not.
Part 4.C – Development Planning ***Section 4.C.3.c***	SUSMPs have been developed for each of the other types of projects (listed in section C.3.b), but no equivalent standard for projects in Environmentally Sensitive Areas (ESA) has been developed. Since projects in these areas could take any number of forms, it is unlikely that a "standard" plan could be effectively developed. Also, as of this draft of the permit, a list of these "ESA"s has not been provided for review.
Part 4.C – Development Planning ***Section 4.C.9***	It is unclear what authority the City has to regulate property transfers between two private parties. Is the City now to keep track of each property transfer and maintain records on who is responsible for maintenance of a site?
Part 4.C – Development Planning ***Section 4.C.10***	This section is completely unclear as to its intent and specifics.
Part 4.C – Development Planning ***Section 4.C.12***	Most cities are on a set schedule to update general plans (5 years or so), as such the 540 day deadline should be changed to the next scheduled general plan revision.
Part 4.C – Development Planning ***Section 4.C.14***	This should be assigned to the Principal Permittee, since it is intended to be a countywide consistent document.
Part 4.D – Development Construction ***Section 4.D.1.a***	This should be clarified further. Is it intended that City personnel attend all such meetings or workshops, or merely to provide information for voluntary distribution during such meetings?
Part 4.D – Development Construction ***Section 4.D.1.c***	Several of the items listed in the "minimum BMPs" are not actually BMPs. If a minimum list is envisioned, it should be spelled out here.

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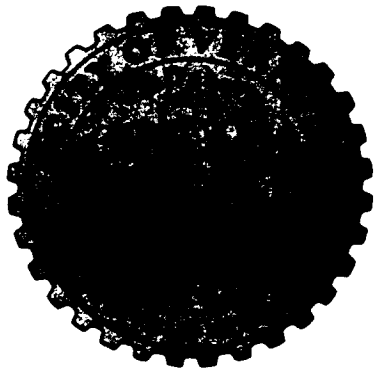
Part 4.F – ICID Program ***Section 4.F.2.b***	What is the rational for specifying that the Permittees specifically consider the 1994 Northridge quake and the "civil unrest"?

Thank you for the opportunity to review and comment. The cost and complexity of this program should be kept in mind as your staff is finalizing the next draft especially as the Board considers implementation of the "Zero Tolerance" TMDL. Please call me if you have any questions.

Sincerely,

Martin R. Cole

Martin R. Cole, MPA
City Manager



CITY HALL
4305 SANTA FE AVENUE, VERNON, CALIFORNIA 90058
TELEPHONE (323) 583-8811

May 16, 2001

Xavier Swamikannu, Chief
LA/Long Beach Storm Water Unit
Regional Water Quality Control Board, Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

2001 MAY 18 P 2:52

Dear Mr. Swamikannu:

In its current form, the Draft NPDES Permit appears to transfer the responsibility of industrial and construction site storm water inspections and enforcement related programs from the State to the Cities.

After further review of the Draft NPDES Permit, several aspects of it could potentially cause significant legal and financial hardships to the City including legal concerns with the permit, policy and program issues, shift of inspection and enforcement related programs, and regional and subregional implementation programs.

According to the terms of the Draft Permit, the City is required to have the ability to enter private property to inspect commercial and industrial facilities. In its current form, the Draft Permit stipulates that the City must have the ability to facilitate all surveillance monitoring, and must report all non-compliant sites and other sites that create an "adverse impact" to the Regional Board within 24 hours. The Permit also requires that commercial and industrial facilities must be investigated regardless of the exposure or non-exposure of Storm water pollution. Cities will also be required to establish an inspection schedule with the Regional Board. In the City's view, the parameters of the Draft Permit are ill defined and will create an open-ended liability for Cities. In addition, the Draft Permit gives the Regional Board the ability to impose and enforce unlimited storm water requirements on the City.

Shifting the inspection and enforcement responsibilities to cities presents several problems that are addressed below:

1) In researching the history of the NPDES, the State evidently entered into a Memorandum of Agreement (MOA) with the United States Environmental Protection Agency in 1989 to manage the NPDES Program. This required the State to develop storm a water permit system and perform water inspections for specified industrial and commercial facilities. Based on this information, the City believes that there is no legal basis to mandate local inspections and enforcement on cities;

2) As currently written, the Draft NPDES Permit will require the City to enter private property to enforce State storm water permits. In order to do this; the City would have to obtain a search warrant. The City's understanding of case law is that it has generally limited Cities to pursue code enforcement based on the rule of what can be observed from the City right-of-way;

3) The State has proposed that no funding be made available to the City for the cost of the new inspection program. The City of Vernon is exclusively industrial and would require that several inspectors be hired to facilitate this program. Assuming it were even legally enforceable, the cost to the City would be considerable. Furthermore, the City could face significant opposition when passing these costs to the business community;

4) Legal enforcement issues are also of some concern to the City. The cost to process municipal code violations, which includes filing charges with city prosecutors and/or the district attorney, could be exceedingly high. In addition, litigation relating to the enforcement of municipal code violations could end up in expensive court cases. Again, the State is proposing no funding for prosecution and court expenses;

5) Another area of concern relates to the surveillance required under the Draft NPDES Permit. As it stands now, the City does not have the resources or the expertise to perform the inspections to complete the health risk assessments and the monitoring required to determine if an adverse impact or nuisance exists in storm water. This would require the City to hire a consultant to oversee the program. Again, the State proposes no funding for the inspection, surveillance, monitoring or health risk assessments;

6) The City is unclear as to the number of industrial and commercial facilities to be inspected every two years, or what specific facilities are "potentially contributing to the impairment of receiving water." The required number of inspections and the types of facilities covered is vague and appears to include State and Federal facilities;

7) An additional concern involves third part litigation issues. If the City was to assume inspection responsibilities, it could potentially be exposed to third party litigation and State fines. The City could be subjected to fines and litigation, where enforcement measures are deemed inadequate by the Regional Board or any individual or third party, and

8) A final area of concern relates to regional and subregional implementation programs. That is, the Draft Permit has no mechanism that requires that other governmental agencies work with cities to implement storm water programs. Based on past history, cities have a good track record of solving regional issues in a cost-effective manner. The City would strongly suggest that the Regional Board research this issue and come back with some form of guidance for cities to follow.

Conclusion

The Draft NPDES Permit imposes unreasonable requirements that the Regional Board does not have the authority to impose, and/or where the Regional Board has exceeded its authority. The Draft Permit imposes unfunded mandates on the City, and City does not have the resources to provide the services mandated by the permit. It is no secret that the primary reason that the State wants to shift regulatory responsibility to local governments is because the State does not have the resources to facilitate the full scope of the program.

Finally, the City is opposed to this shift of enforcement obligations to the Cities, and is also in opposition to the inspection, reporting and oversight obligations that have been imposed. It is the opinion of the City that extensive review of the Draft must occur before any type of ratification can be considered.

Very truly yours,

Samuel Kevin Wilson, P.E.
Director of Community Services and Water

City of Whittier

13230 Penn Street, Whittier, California 90602-1772
(562) 945-8200

2001 MAY 18 P 2:48

May 16, 2001

Mr. Dennis Dickerson
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street
Los Angeles, California, 90013

Subject: EAC Comments in Regard to the First Municipal NPDES Permit Draft

Dear Mr. Dickerson:

Submitted herewith for your consideration are comments prepared by the City of Whittier ("City") in response to the draft Los Angeles County Municipal NPDES permit (hereinafter "draft permit"), dated April 13, 2001.

It should be noted that the draft permit is a substantial improvement over the current permit. It is less problematic in several key areas. There is however, room for additional improvement. The written comments prepared by the City are intended to accomplish this by identifying areas of concern -- including: (1) program requirements that appear to be unnecessarily labor intensive and costly; (2) new provisions that would make permit compliance unjustifiably more stringent while increasing permittee exposure to administrative enforcement actions and third party litigation; and (3) permit language that seems unclear and contradictory in a few places.

It is also suggested that Regional Board staff consider a different approach for presenting, evaluating, and responding to comments in regard to municipal NPDES issues. In the past, permittee comments that were contrary to Regional Board staff views were usually rejected without compelling reason. Often ignored were the permittees' legitimate concerns for the cost and effectiveness of proposed requirements. This has resulted in the adoption of unpopular and very controversial permit requirements. Permittees were thus faced with the narrow options of either accepting unreasonable requirements or challenging them administratively and legally.

In the interest of avoiding a similar fate with the next municipal NPDES permit, the following is proposed:

1. Regional Board staff should make a conscientious effort to discuss and resolve concerns raised by permittees, rather than just issuing a written rejection with a brief explanation as to why. Instead, a forum is recommended to promote dialog aimed towards achieving a mutual agreement. Although workshops are fine for communicating requirements and identifying

general issues, they are not effective in identifying specific areas of concern or resolving disagreement. Smaller work groups are needed because they can provide better attention to issues. A work group could be comprised of permittee representatives and regional staff for each program area (e.g., development planning, development construction, illicit discharge and connection detection and elimination, etc.). The work groups should concentrate on working-out essential compliance concerns. Once this is done, developing language-related details would be relatively simple. Also, an objective third party should be involved to facilitate discussion and resolve disagreement.

2. Criteria for determining the reasonability of new permit requirements or existing ones should be developed. Such criteria should include objective readings of: (a) 40 CFR 122.26 (Storm Water Regulations Under the Clean Water Act); (b) Phase II Storm Water Rules, which are scheduled to take effect in 2003; and (c) Porter-Cologne Act (state water code) -- to justify requirements not specified in the Clean Water Act, in terms of beneficial use protection, and using scientific data rather than subject judgment.

3. A general workshop on Phase II Storm Water Rules, promulgated by the USEPA and scheduled for implementation in 2003, should be held to educate Regional Board staff, permittees, and other interested parties on these new municipal NPDES permit requirements. To that end, Regional Board staff is encouraged to join with permittees in inviting a representative from the USEPA Region 9 to conduct the workshop.

4. Delay adoption of the new permit, until Phase II rules have been fully identified, evaluated, and incorporated into the next permit.

In closing, the City appreciates the time and effort that Regional Board staff has invested in preparing the draft permit, and looks forward to participating with it in developing a new permit that will truly improve water quality in the most cost effective manner possible. In the meantime, should you have any questions, please call me at (562) 464-3510.

Sincerely,

David T. Mochizuki
Director of Public Works

DTM:LY:ra
(PW:Wtr:Distrct:NPDES-EAC Comments)

FAX COVER SHEET

City of Whittier
13230 Penn Street
Whittier, CA 90602-1772
Telephone: (562) 945-8200
Fax: (562) 464-3572

Date: May 16, 2001

To: Dennis Dickerson, Executive Officer

Firm: California Regional Water Quality Control Board

Fax No.: 213) 576-6625

Telephone:

From: David T. Mochizuki, Director of Public Works

Message:

Number of Pages: 3
(Including cover)

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100

JAMES A. NOYES, Director

ADDRESS ALL CORRESPONDENCE TO
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

May 16, 2001

IN REPLY PLEASE
REFER TO FILE WM-9

Mr. Dennis A. Dickerson, Executive Officer
California Regional Water Quality
Control Board--Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013-1105

Dear Mr. Dickerson:

COMMENTS ON LOS ANGELES COUNTY MUNICIPAL STORMWATER NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM DRAFT PERMIT

Enclosed are Los Angeles County's comments to the Regional Water Quality Control Board's April 13, 2001, first draft of the National Pollutant Discharge Elimination System (NPDES) Permit for Los Angeles County Flood Control District, Los Angeles County, and 84 Cities.

Our comments were made in colors and incorporated into the text of your draft Permit for your convenience. We look forward to working with you and your staff in addressing our comments.

If you have any additional questions, please contact Mr. Mustafa Ariki at (626) 458-5948, Monday through Thursday, 7:30 a.m. to 6 p.m.

Very truly yours,

JAMES A. NOYES
Director of Public Works

DONALD L. WOLFE
Assistant Director

CT:kk
P:\WMPUB\NPDES\Unit1\Trevizo\2001permit\1draftletter\RB_letter.wpd

Enc.

cc: All County Departments
All Permittees

Comment Version
Proposed Language is in Blue
Comments are in Red.

DRAFT

LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD

ORDER No. 01-XXX
(NPDES No. CAS614001)

WASTE DISCHARGE REQUIREMENTS
FOR
MUNICIPAL STORM WATER AND URBAN RUNOFF DISCHARGES WITHIN THE COUNTY OF LOS ANGELES AND THE INCORPORATED CITIES, EXCEPT FOR THE CITIES OF LONG BEACH ~~AND SANTA CLARITA~~

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STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. 01-xxx
NPDES PERMIT NO. CAS004001
WASTE DISCHARGE REQUIREMENTS
FOR
MUNICIPAL STORM WATER AND URBAN RUNOFF DISCHARGES WITHIN THE COUNTY OF LOS ANGELES, AND THE INCORPORATED CITIES, EXCEPT THE CITIES OF LONG BEACH AND SANTA CLARITA

FINDINGS

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter referred to as the Regional Board) finds:

Existing Permit and Report of Waste Discharge

1. The Los Angeles County Flood Control District, the County of Los Angeles, and ~~83~~ 84 incorporated cities within the Los Angeles County Flood Control District (see Attachment A, List of Permittees), hereinafter referred to separately as Permittees and jointly as the Discharger, discharge or contribute to discharges of storm water and urban runoff from municipal separate storm sewer systems (MS4s), also called storm drain systems. The discharges flow to watercourses within the Los Angeles County Flood Control District and into receiving waters of the Los Angeles region. These discharges are covered under countywide waste discharge requirements contained in Order No. 96-054 adopted by this Regional Board on July 15, 1996, and which rescinded in part Order No. 90-079 adopted by this Regional Board on June 18, 1990. Order No. 96-054 also serves as a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of municipal storm water.

   Attachment A was not provided.

Nature of Discharges and Sources of Pollutants

2. Storm water discharges consist of surface runoff generated from various land uses in all the hydrologic drainage basins that discharge into water bodies of the State. The quality of these discharges varies considerably and is affected by the hydrology, geology, land use, season, and sequence and duration of hydrologic events. The primary constituents of concern currently identified by the Los Angeles County Flood Control District 1994-2000 Integrated Receiving Water Impacts Report are cyanide, indicator bacteria, total dissolved solids, turbidity, total suspended solids, nutrients, total aluminum, dissolved cadmium, copper, lead, total mercury, nickel, zinc, bis(2-ethylhexyl)phthalate, polycyclic aromatic hydrocarbons (PAHs), diazinon, and chlorpyrifos.

3. Certain pollutants present in storm water and/or urban runoff may be derived from extraneous sources that Permittees have no or limited jurisdiction over. Examples of such pollutants and their respective sources are: PAHs which are products of internal combustion engine operation, nitrates from atmospheric deposition, heavy metals, lead from fuels, copper from brake pad wear, zinc from tire wear, dioxins as products of combustion, and bis (2-ethylhexyl) phthalate and mercury as resulting from atmospheric deposition, and natural-occurring minerals from local geology. However, Permittees can implement control measures to reduce entry of these pollutants into storm water and their discharge to receiving waters.

4. These compounds can have damaging effects on both human health and aquatic ecosystems. In addition, the high volumes of storm water discharged from MS4s in areas of urbanization can significantly impact aquatic ecosystems due to physical modifications such as bank erosion and widening of channels. It is anticipated that, due to the nature of storm water events (i.e., large volumes of water and high velocities) that there may be short-term, reversible impacts to beneficial uses that are not directly related to water quality.

5. Water quality assessments conducted by the Regional Board identified impairment, or threatened impairment, of beneficial uses of water bodies in the Los Angeles region. The causes of impairments include pollutants of concern identified by the County of Los Angeles in the Integrated Receiving Water Impacts Report (1994-2000).

6. Development and urbanization especially threaten environmentally sensitive areas. Such areas have a much lower capacity to withstand pollutant shocks than might be acceptable in the general circumstance. In essence, development that is ordinarily insignificant in its impact on the environment may in a particular sensitive environment become significant. These environmentally sensitive area include Areas of Special Biological Significance, water bodies designated with a RARE beneficial use, Significant Natural Areas, and impaired water bodies listed under Clean Water Act Section 303(d).

7. The increased volume, increased velocity, and discharge duration of storm water runoff from developed areas greatly accelerates downstream erosion and impairs stream habitat. Studies have demonstrated a direct correlation between the degree of imperviousness of an area and the degradation of its receiving waters. Significant declines in the biological integrity and physical habitat of streams and other receiving waters have been found to occur with as little as 10 percent conversion from natural to impervious surfaces. Percentage impervious cover is a reliable indicator and predictor of potential water quality degradation expected from new development. (*Impervious Cover as An Urban Stream Indicator and a Watershed Management Tool*, Schuler, T. and R. Claytor, In, Effects of Water Development and Management on Aquatic Ecosystems (1995), ASCE, New York.)

Permit Background

8. The Permittees have filed a Report of Waste Discharge (ROWD), dated February 1, 2001, and has applied for renewal of its waste discharge requirements and an NPDES permit to discharge wastes to surface waters. The ROWD includes the Storm Water Quality Management Plan (SQMP) and a Monitoring Program.

9. The SQMP contains programs previously approved under Board Order No. 96-054 in the following areas:

   Public Information and Participation
   Development Construction
   Illicit Connection/Illicit Discharge Elimination Program
   Development Planning
   Public Agency Activities

   These programs will be revised pursuant to the provisions of this Order after adoption.

10. The Regional Board has reviewed the ROWD and has determined it to be complete under the reapplication policy of MS4s issued by the USEPA (61 *Fed. Reg.* 41697). The Regional Board finds that the Permittee's proposed Storm Water Management Plan is acceptable and when fully implemented will be consistent with the statutory standard of Maximum Extent Practicable (MEP) and in compliance with the Federal Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act.

    It is necessary to state that the implementation of the SQMP is consistent with the statutory standard of MEP, which is consistent with the CWA. This language has been present in other MS4 NPDES permits

11. Studies indicate that facilities with paved surfaces subject to frequent motor vehicular traffic (such as parking lots and fast food restaurants), or facilities which perform vehicle repair, maintenance, or fueling (automotive service facilities0)are potential sources of pollutants of concern in storm water. [References: Pitt *et al.*, *Urban Storm Water Toxic Pollutants: Assessment, Sources, and Treatability*, Water Environment Res., 67, 260 (1995); *Results of Retail Gas Outlet and Commercial Parking Lot Storm Water Runoff Study*, Western States Petroleum Association and American Petroleum Institute, (1994); *Action Plan Demonstration Project, Demonstration of Gasoline Fueling Station Best Management Practices*, Final Report, County of Sacramento (1993).]

12. Retail gasoline outlets are points of convergence for vehicular traffic and are similar to parking lots and urban roads. Studies indicate that storm water discharges from retail gasoline outlets have high concentrations of hydrocarbons and heavy metals. [*Schueler and Shepp* (1992)]. Pilot studies indicate that treatment control best management practices installed at retail gasoline stations are effective in removing pollutants, reasonable in capital cost, easy to operate, and do not present safety risks [*Rouge River National Wet Weather Demonstration Project, Task Product Memorandum – Evaluation of On-line Media Filters RPO-NPS-TPM59.00*, Wayne County, MI. March 1999].

Permit Coverage

13. The requirements in this Order cover all areas within the boundaries of the cities (see Attachment A) as well as unincorporated areas in Los Angeles County ~~Flood Control District~~ within the jurisdiction of the Regional Board. The Permittees serve a population of about 11.4 million [Reference: *2000 Census of Population and Housing,* Bureau of the Census, U.S. Department of Commerce (2001)] in an area of approximately 3,100 square miles.

Attachment B shows the map of the permitted area in Los Angeles ~~County Flood Control District~~.

Attachment B was not provided

14. Federal, state, regional or local entities within the Permittees' boundaries or in jurisdictions outside ~~the~~ Los Angeles County ~~Flood Control District~~, and not currently named in this Order, may operate storm drain facilities and/or discharge storm water to storm drains and watercourses covered by this Order. The Permittees may lack legal jurisdiction over these entities under state and federal constitutions. Consequently, the Regional Board recognizes that the Permittees will not be held responsible for such facilities and/or discharges. The Regional Board will coordinate with these facilities to implement programs that are consistent with the requirements of this Order.

15. Sources of discharges into receiving waters in the County of Los Angeles but in jurisdictions outside its boundary include the following:

    a) About 34 square miles of unincorporated area in Ventura County drain into Malibu Creek, thence to Santa Monica Bay,

    b) About 9 square miles of the City of Thousand Oaks also drain into Malibu Creek, thence to Santa Monica Bay, and

    c) About 86 square miles of area in Orange County drain into Coyote Creek, thence into the San Gabriel River in the Los Angeles County Flood Control District.

    The Regional Board will ensure that storm water management programs for the areas in Ventura County and the City of Thousand Oaks that drain into Santa Monica Bay are consistent with the requirements of this Order. The Regional Board will coordinate with the Santa Ana Regional Board so that storm water management programs for the areas in Orange County that drain into Coyote Creek are consistent with the requirements of this Order.

16. This permit is intended to develop, achieve, and implement a timely, comprehensive, cost-effective storm water pollution control program to minimize the discharge of pollutants in storm water from the permitted areas in the County of Los Angeles to the waters of the United States.

17. Permittees ~~will~~ are encouraged to work cooperatively with the assistance of the Regional Board to control the contribution of pollutants from one portion of the municipal separate storm sewer system to another portion of the system. Permittees ~~may~~ are encouraged to control the contribution of pollutants to the municipal separate storm sewer system from non-permittee dischargers such as Caltrans, the U.S. Department of Defense, and other state and federal facilities, through interagency agreements.

    The draft permit language states a requirement rather than a finding. As noted in Finding #14, "Permittees lack legal jurisdiction over state and federal facilities." Permittees would attempt to work cooperatively to control the contribution of pollutants to the MS4, however

they would be unable to force non-storm water dischargers to cooperate in this effort. Furthermore, some of these dischargers have been issued NPDES permits by the Regional Board. These dischargers are already regulated by the Regional Board and should be controlling the contribution of pollutants to the MS4 by their NPDES permits.

Federal, State, and Regional Regulations

18. The Water Quality Act of 1987 added Section 402(p) to the Federal Clean Water Act (CWA). This section requires the U.S. Environmental Protection Agency (U.S. EPA) to establish regulations setting forth NPDES requirements for storm water discharges in two phases.

    - The U.S. EPA Phase 1 regulations were directed at municipal separate storm sewer systems (MS4) serving a population of 100,000 or more, including interconnected systems and storm water discharges associated with industrial activities, including construction activities. The Phase 1 Final Rule was published on November 16, 1990 (55 *Fed Reg.* 47990).

    - The U.S. EPA Phase II regulations are directed at other types of storm water discharges, including small municipal MS4s (serving a population of less than 100,000), small construction projects (one to five acres), municipal facilities with delayed coverage under the Intermodal Surface Transportation Efficiency Act of 1991, and other discharges for which the U.S. EPA Administrator or the State determines that the storm water discharge contributes to a violation of a water quality standard, or is a significant contributor of pollutants to waters of the United States. The Phase II Final Rule was published on December 8, 1999 (64 *Fed Reg.* 68722).

19. The U.S. EPA published an 'Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits' on August 26, 1996 (61 Fed. Reg. 4376). This policy discusses the appropriate kinds of water quality based effluent limitations to be included in NPDES storm water permits to provide for the attainment of water quality standards.

20. The U.S. EPA published an 'Interpretative Policy Memorandum on Reapplication Requirements' for MS4 permits on August 9, 1996 (61 *Fed. Reg.* 41697). This policy requires that MS4 reapplications for the next five-year permit term contain certain basic information and information for proposed changes and improvements to the storm water management program and monitoring program.

21. ~~U.S. EPA regulations at 40 CFR 122.26(d)(2)(iv)(A) and 40 CFR 122.26(d)(2)(iv)(C) require that Permittees implement a program to monitor and control pollutants in discharges to the municipal system from industrial and commercial facilities that contribute a substantial pollutant load to the MS4. The regulations require that Permittees establish priorities and procedures for inspection of industrial facilities. This permit consistent with the regulations incorporates a requirement that Permittees conduct an industrial/ commercial inspection program to control pollutants in storm water discharges from industrial facilities.~~

    The sections cited do not support the Finding. Section 122.26(d)(2)(iv)(A) requires a description of structural and source control measures to reduce runoff pollutants from commercial and residential areas. It does not apply to industrial facilities. Section

122.26(d)(2)(iv)(C) applies only to landfills, hazardous waste treatment, disposal or recovery facilities, facilities subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the MS4. There is no reference in these sections to inspecting, monitoring or controlling pollutant loads from "discharges from industrial facilities" in general, i.e. the entire category of all industrial permittees, as implied by the finding.

22. Section 122.2 of the CWA authorizes the U.S. EPA to delegate its NPDES permitting authority to states with an approved environmental regulatory program. The State of California is a delegated State. The Porter-Cologne Water Quality Control Act (California Water Code) authorized the State Water Resources Control Board (State Board), through the Regional Boards, to regulate and control the discharge of pollutants into waters of the State and tributaries thereto. The State Board entered into a Memorandum of Agreement [MOA] with the U.S. EPA, on 22 September 1989, to administer the NPDES Program.

23. Section 303(d) of the CWA requires that the State identify a list of impaired water-bodies and develop and implement Total Maximum Daily Loads (TMDLs) for these waterbodies. A TMDL specifies the maximum amount of a pollutant that a water-body can receive and still protect beneficial uses. The U.S. EPA entered into a consent decree with the Natural Resources Defense Council (NRDC) on March 22, 1999, under which the Regional Board must adopt all TMDLs for the Los Angeles Region within 13 years from that date. This permit incorporates a provision to implement and enforce approved load allocations for municipal storm water discharges and require changes to the Storm Water Quality Management Plan after pollutants loads have been allocated and ~~approved~~ have final approval.

Wording added for clarity

24. Section 6217(g) of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) requires coastal states with approved coastal zone management programs to address non-point pollution impacting or threatening coastal water quality. CZARA addresses five sources of non-point pollution: agriculture, silviculture, urban, marinas, and hydromodification. This NPDES permit addresses the management measures required for the urban category, with the exception of septic systems. The Regional Board addresses septic systems through the administration of other programs.

~~25. On May 18, 2000, the U.S. EPA established numeric criteria for priority toxic pollutants for the State of California (California Toxics Rule) 65 *Fed. Reg.* 31682, for the protection of human health and aquatic life. These criteria apply to discharges to inland surface waters, and enclosed bays and estuaries and to the Clean Water Act and its programs. The State Board adopted the, *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California – 2000)* on March 2, 2000, for implementation of the California Toxics Rule (State Board Resolution No. 200-15 as amended by Board Resolution No. 2000-030). This policy requires that discharges comply with TMDL derived load allocations as soon as possible but no later than 20 years from the effective date of the policy.~~

The State Board's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* specifically provides that the standards do not apply to storm water discharges

26. The State Board adopted a revised Water Quality Control Plan for Ocean Waters of California (Ocean Plan) on July 23, 1997. The Ocean Plan contains water quality objectives for the coastal waters of California.

27. The Regional Board adopted an updated Water Quality Control Plan (Basin Plan) for the Los Angeles Region on June 13, 1994, *'Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*, (1994).' The Basin Plan, and amendments thereto, which are incorporated in this Order by reference, designate the beneficial uses of receiving waters and specify both narrative and numerical water quality objectives for the receiving waters in Los Angeles County.

28. The Regional Board on April 13, 1998, approved best management practices for sidewalk washing to minimize the discharge of wash waters to the storm drain system (Resolution No. 98-08). By the same Resolution, the Regional Board prohibited the discharge of municipal street wash waters to the storm drain system.

29. The Regional Board on April 13, 1998, approved recommended best management practices for industrial/ commercial facilities (Resolution No. 98-08).

30. The Regional Board on April 22, 1999, approved a List of best management practices for use in development planning and development construction (Resolution No. 99-03)

31. The Regional Board adopted and approved requirements for new development and significant redevelopment projects in Los Angeles County to control the discharge of storm water pollutants in post-construction storm water, on January 26, 2000, in Board Resolution No. R-00-02. The Regional Board Executive Officer issued the approved Standard Urban Storm Water Mitigation Plans (SUSMPs) on March 8, 2000. The State Board in large part affirmed the Regional Board action and SUSMPs in Order No. WQ 2000-1 issued on October 5, 2000. The State Board's Chief Counsel has issued a statewide policy memorandum (dated December 26, 2000,) which interprets the Order to provide broad discretion to Regional Boards and identifies potential future areas for inclusion in SUSMPs and the types of evidence and findings necessary. Such areas include ministerial projects, projects in environmentally sensitive areas, and retail gasoline outlets.

32. The Regional Board supports a Watershed Management Approach to address water quality protection in the region. The objective of the Watershed Management Approach should be to provide a comprehensive and integrated strategy towards water resource protection, enhancement, and restoration while balancing economic and environmental impacts within a hydrologically defined drainage basin or watershed. It emphasizes cooperative relationships between regulatory agencies, the regulated community, environmental groups, and other stakeholders in the watershed to achieve the greatest environmental improvements with available resources.

33. To promote a watershed management approach, the County of Los Angeles is divided into ~~five~~ six Watershed Management Areas (WMAs) as follows:

    a. Malibu Creek and Rural Santa Monica Bay WMA
    b. Ballona Creek and Urban Santa Monica Bay WMA
    c. Los Angeles River WMA
    d. San Gabriel River WMA
    e. Dominguez Channel/Los Angeles Harbor WMA
    f. Santa Clara River WMA

    A formal letter to rescind the submitted ROWD for the Santa Clara River Watershed Management Area (WMA) and a request to add City of Santa Clarita as a Co-Permittee under the Los Angles Basin Permit will be sent at a later date.

    Permittees may form sub-watershed groups within the WMA. Attachment A, shows the list of Permittees under each WMA.

34. To facilitate compliance with federal regulation, the State Board has issued two statewide general NPDES permits: one for storm water from industrial sites [NPDES No. CAS000001, General Industrial Activity Storm Water Permit (GIASP)] and the other for storm water from construction sites [NPDES No. CAS000002, General Construction Activity Storm Water Permit (GCASP)]. The GCASP was reissued on August 19, 1999. The GIASP was reissued on April 17, 1997. Facilities discharging storm water associated with industrial activities and construction projects with a disturbed area of five acres or more are required to obtain individual NPDES permits for storm water discharges, or be covered by these statewide general permits by completing and filing a Notice of Intent (NOI) with the State Board. The U.S. EPA guidance anticipates coordination of the state-administered programs for industrial and construction activities with the local agency program to reduce pollutants in storm water discharges to the MS4.

35. The State Board, on October 28, 1968, adopted Resolution No. 68-16, "Maintaining High Quality Water" which established an anti-degradation policy for State and Regional Boards.

36. The State Board, on June 17, 1999, adopted Order No. WQ 99-05, which specifies standard receiving water limitations language to be included in all municipal storm water permits issued by the State and Regional Boards.

37. California Water Code (CWC) Section 13263(a) requires that waste discharge requirements issued by the Regional Board shall implement any relevant water quality control plans that have been adopted; shall take into consideration the beneficial uses to be protected and the

water quality objectives reasonably required for that purpose; other waste discharges; and the need to prevent nuisance.

38. California Water Code Section 13370 *et seq.* requires that waste discharge requirements issued by the Regional Boards comply with provisions of the Federal Clean Water Act and its amendments.

Other Findings

39. The Regional Board is the enforcing authority in the Los Angeles Region or the two statewide general permits, which regulate discharges from industrial facilities and construction sites, and all NPDES storm water and non-storm water permits issued by the Regional Board. These industrial and construction sites and discharges are also regulated under local laws and regulations.

40. The Executive Advisory Committee (EAC) is a representative committee of Permittee members established to facilitate permit compliance and enhance consistency in program implementation among Permittees.

41. For water quality purposes, the Regional Board considers that all new development and significant redevelopment activity in specified categories, that receive approval or permits from a municipality, are subject to storm water mitigation requirements. The California Environmental Quality Act (CEQA) (Pub Resources Code Section 21000 *et seq.*) requires that public agencies consider the environmental impacts of the projects they approve for development. CEQA applies to projects that are considered discretionary and does not apply to ministerial projects, which involve the use of established standards or objective measurements. A ministerial project may be made discretionary by adopting local ordinance provisions that create decision-making discretion.

42. A review of industrial waste/ pretreatment records in the County of Los Angeles on illicit discharges indicates that automotive service facilities and food service facilities sometimes discharge polluted washwaters to the MS4. The pollutants of concern in such washwaters include food waste, oil and grease, and toxic chemicals. Other storm water/industrial waste programs in California have reported similar observations.

Implementation

43. The objective of this Order is to protect the beneficial uses of receiving waters in Los Angeles County. To meet this objective, this Order requires implementation of BMPs intended to reduce pollutants in storm water and urban runoff such that ultimately their discharge will neither cause violations of water quality objectives nor create conditions of nuisance in receiving waters.

44. The Regional Board recognizes the unique challenges to regulating storm water discharges through municipal storm sewer systems, including intermittent and variable nature of discharges, difficulties in monitoring, and limited physical control over the discharge, and that it will require adequate time to implement and evaluate the effectiveness of best

management practices required in this Order and to determine whether they will adequately protect the receiving water.

45. The SQMP required in this Order builds upon the programs established in Order No. 90-079, and No. 96-054, consists of the components recommended in the USEPA guidance manual, and was developed with the cooperation of representatives from the regulated community and environmental groups. The SQMP includes provisions that promote customized initiatives, both on a countywide and watershed basis, in developing and implementing cost-effective measures to minimize discharge of pollutants to the receiving water. The various components of the SQMP, taken as a whole rather than individually, are expected to reduce pollutants in storm water and urban runoff to the maximum extent practicable.

46. The emphasis of the SQMP is pollution prevention through education, public outreach, planning, and implementation as source control BMPs first and then structural and treatment control BMPs. Successful implementation of the provisions of the SQMP will require cooperation and coordination of all public agencies in each Permittee's organization, among Permittees, and the regulated community. To minimize cost, the Permittees are encouraged to utilize their existing organizational framework to implement the various activities required in this Order.

47. This Order provides the flexibility for the Permittees to petition the Regional Board Executive Officer to substitute a BMP or requirement under the SQMP with an alternative BMP, if they can provide information and documentation on the effectiveness of the alternative, equal to or greater than the prescribed BMP in meeting the objectives of this Order.

48. This Order contemplates that the Permittees are responsible for considering potential storm water impacts when making planning decisions. This Order or any of its requirements are not intended to restrict or control local land use decision-making authority.

Public Process

49. The Regional Board has notified the Permittees and interested agencies and persons of its intent to issue waste discharge requirements for this discharge, and has provided them with an opportunity to submit their written view and recommendations.

50. The Regional Board, in a public hearing, heard and considered all comments pertaining to the discharge and to the tentative requirements.

51. The Regional Board has conducted public workshops to discuss the draft permit.

52. This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) Permit, pursuant to Section 402 of the Federal Clean Water Act, or amendments thereto, and shall take effect 50 days from permit adoption provided the Regional Administrator of the EPA has no objections.

53. This Order may be modified or alternatively revoked or reissued prior to its expiration date, in accordance with the procedural requirements of the federal NPDES program, and the California Water Code for the issuance of waste discharge requirements.

IT IS HEREBY ORDERED that the Los Angeles County Flood Control District, Los Angeles County, and the Cities of Agoura Hills, Alhambra, Arcadia, Artesia, Azusa, Baldwin Park, Bell, Bellflower, Bell Gardens, Beverly Hills, Bradbury, Burbank, Calabasas, Carson, Cerritos, Claremont, Commerce, Compton, Covina, Cudahy, Culver City, Diamond Bar, Downey, Duarte, El Monte, El Segundo, Gardena, Glendale, Glendora, Hawaiian Gardens, Hawthorne, Hermosa Beach, Hidden Hills, Huntington Park, Industry, Inglewood, Irwindale, La Cañada Flintridge, La Habra Heights, Lakewood, La Mirada, La Puente, La Verne, Lawndale, Lomita, Los Angeles, Lynwood, Malibu, Manhattan Beach, Maywood, Monrovia, Montebello, Monterey Park, Norwalk, Palos Verdes Estates, Paramount, Pasadena, Pico Rivera, Pomona, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Rosemead, San Dimas, San Fernando, San Gabriel, San Marino, Santa Clarita, Santa Fe Springs, Santa Monica, Sierra Madre, Signal Hill, South El Monte, South Gate, South Pasadena, Temple City, Torrance, Vernon, Walnut, West Covina, West Hollywood, Westlake Village, and Whittier, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act, as amended, and regulations and guidelines adopted thereunder, shall comply with the following:

A formal letter to rescind the submitted ROWD for the Santa Clara River Watershed Management Area (WMA) and add the City of Santa Clarita as a Co-Permittee under the Los Angles Basin Permit will be sent at a later date

Part 1. DISCHARGE PROHIBITIONS

Each Permittee shall within its jurisdiction effectively prohibit non-storm water discharges into the MS4 and watercourses, except where such discharges are:

This prohibition can be clarified by indicating that the Permittees can only prohibit discharges within their own jurisdictions

1. covered by a separate individual or general NPDES permit for non-storm water discharges. granted an exemption; or

   It is important to indicate that an exemption may be granted upon a petition or the Executive Officer's approval.

2. in one of the categories below, and meet all conditions specified by the Regional Board Executive Officer (and which must be included in the revised SQMP):

   a) Categories of natural flow:

      (1) Natural springs and rising ground water;

      (2) Flows from riparian habitats or wetlands;

      (3) Stream diversions, permitted by the State Board; and

(4) Uncontaminated ground water infiltration [as defined by 40 CFR 35.2005(20)].

b) Category of flows from emergency fire fighting activity.

c) Categories of flows incidental to urban activities, all of which are subject to conditions that shall be approved by the Regional Board Executive Officer:

(1) Reclaimed and potable landscape irrigation runoff;

(2) Water line flushing of potable water distribution systems;

(3) Discharges of potable water.

There may be occasions where incidental runoff may occur from events such as, leaks, cleaning of water storage tanks, and redevelopment of wells.

(4) Drains for foundations, footings, and crawl spaces;

(5) Air conditioning condensate;

(6) Dechlorinated swimming pool discharges;

(7) Dewatering of lakes and decorative fountains;

(8) Non-commercial car washing by residents or by non-profit organizations; and

(9) Wash water runoff from the cleaning of fire fighting vehicles.

Fire vehicle washing is a routine activity and; thus it would be appropriate to impose conditions on the wash water before it is being discharged into the MS4. There are source control BMPs that can be used to effectively reduce pollutants in the wash water before it is discharged into the MS4.

(10) Sidewalk rinsing;

(11) Wash water runoff of blood and other human tissues from the cleaning of accident sites or accidental spills.

We have not received a response from the Executive Officer to our request for this conditional exemption.

The Regional Board Executive Officer may add or remove categories of non-storm water discharges above. Furthermore, in the event that any of the above categories of non-storm water discharges are determined to be a source of pollutants by the Regional Board Executive Officer, the discharge will no longer be exempt from this prohibition unless the Permittee implements conditions approved by the Regional Board Executive Officer to ensure that the discharge is not a source of

pollutants. Notwithstanding the above, the Regional Board Executive Officer may impose additional prohibitions of non-storm water discharges in consideration of anti-degradation policies.

There are neither criteria nor procedure included in the draft permit for the addition of categories of non-storm water discharges subject to conditions in the paragraph above

Part 2. RECEIVING WATER LIMITATIONS

~~1. Discharges from the MS4 that cause or contribute to the violation of water quality standards or water quality objectives are prohibited.~~

~~2. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible shall not cause or contribute to a condition of nuisance.~~

Items 1 and 2 are inconsistent with the State Board Resolution 99-05 Items 1 and 2 will cause Permittees to be immediately out of compliance with the permit requirements

3. The Permittee shall comply with the permit through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the Storm Water Quality Management Plan (SQMP) and its components and other requirements of this permit including any modifications. The SQMP and its components shall be designed to achieve compliance with receiving water limitations. If exceedances of applicable water quality objectives or applicable water quality standards (collectively, water quality standards) persist, notwithstanding implementation of the SQMP and its components and other requirements of this permit, the Permittee shall assure compliance with discharge prohibitions and receiving water limitations by complying with the following procedure:

Language added for clarity

a) Upon a determination by either the Permittee or the Regional Board that discharges are causing or contributing to an exceedance of an applicable water quality standard, the Permittee shall promptly notify and thereafter submit a report to the Regional Board that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedances of water quality standards. This report may be incorporated in the ~~annual update of the SQMP and its components~~ Annual Storm Water Report and Assessment unless the Regional Board directs an earlier submittal. The report shall include an implementation

schedule. The Regional Board may require modifications to the Report.

The SQMP is not updated annually. It would be appropriate to incorporate the report asked for above in the Annual Storm Water Report and Assessment.

b) Submit any modifications to the report required by the Regional Board within 30 days of notification.

c) Within 30 days following the approval of the report, the Permittee shall revise the SQMP and its components and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, implementation schedule, and any additional monitoring required.

d) Implement the revised SQMP and its components and monitoring program according to the approved schedule.

4. So long as the Permittee has complied with the procedures set forth above and is implementing the revised SQMP and its components, the Permittee does not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Regional Board to develop additional BMPs.

Part 3. STORM WATER QUALITY MANAGEMENT PLAN IMPLEMENTATION, MONITORING, AND REPORTING

A. Responsibilities of the Principal Permittee

The Principal Permittee will coordinate and facilitate activities necessary to comply with the requirements of this Order, but is not responsible for ensuring compliance of any individual Permittee. The ~~County of~~ Los Angeles County Flood Control District is hereby designated as the Principal Permittee, and as such shall:

This wording is added for clarity. The Los Angeles County Flood Control District is the Principal Permittee.

1. Coordinates permit activities among Permittees and negotiate NPDES requirements with the Regional Board.

   All Permittees will be given the opportunity to have an active role in, provide input and participate in the development of permit requirements. However, the Principal Permittee and the watershed Executive Advisory Committee (EAC) representative(s) will conduct formal discussions with the Regional Board on behalf of Permittees.

2. Provide personnel and fiscal resources for the necessary update of the SQMP and its components;

3. Convene the Watershed Management Committees (WMCs) constituted pursuant to Part C, below, upon designation of representatives;

4. Provide technical and administrative support for committees that will be organized to implement the SQMP and its components;

5. Implement the Countywide Monitoring Program required in this Order;

6. Provide personnel and fiscal resources for the preparation and submittal to the Regional Board of annual reports and summaries of other reports required under the SQMP; and

7. Comply with the "Responsibilities of the Permittees" in Part 3.B., below;

B. Responsibilities of Each Permittees

Each Permittee is responsible for the implementation of the appropriate storm water management program developed pursuant to the requirements of this Order, and not for the implementation of the provisions applicable to the Principal Permittee or other Permittees. A Permittee is required to comply with the requirements of this Order applicable to discharges, which originate from places within its boundaries over which it has authority to enforce the requirements of this Order. Each Permittee shall, within its geographic jurisdiction:

1. Comply with the requirements of the SQMP and its amendments;

2. Coordinate among its internal departments and agencies, as appropriate, to facilitate the implementation of the requirements of the SQMP and its components applicable to such Permittee in an efficient and cost-effective manner;

3. Participate in the update of the SQMP and its components;

4. Designate a technically knowledgeable representative to the appropriate WMC;

5. Implement the SQMP upon approval by the Regional Board Executive Officer; and,

6. Provide intra-agency coordination (e.g. Fire Department, Building and Safety, Code Enforcement, etc.) toward the successful implementation of the provisions of this Order and SQMP components. As such, these

organizations are expected to actively participate in implementing the area wide storm water program.

C. Watershed Management Committees (WMCs)

1. Each WMC shall be comprised of a voting representative from each Permittee in the Watershed Management Area (WMA).

2. The WMC's chair and secretary shall be chosen by the WMC upon permit adoption and on an annual basis, thereafter. In the absence of volunteer Permittee(s) for the positions, the Principal Permittee shall assume those roles until the WMC chooses members of the committee for the positions.

Each WMC shall:

1. Facilitate cooperation and exchange of information among Permittees;

2. Establish additional goals and objectives and associated deadlines for the WMA, as the program implementation progresses;

3. Prioritize pollution control efforts based on beneficial use impairment(s), watershed characteristics and analysis of results from studies and the monitoring program;

4. Develop and/or update and monitor the adequate implementation, on an annual basis, of the tasks identified for the WMA;

5. Assess the effectiveness of, prepare revisions for, and recommend appropriate changes to the SQMP and its components;

6. Continue the Industrial/Commercial Source Identification program. Additional industrial/commercial or other types of activities will be investigated and those identified as priority shall be included in the program for industrial/commercial businesses.

7. Conduct joint WMC meetings at least four times per year and, as necessary.

D. Executive Advisory Committee (EAC)

The EAC is constituted by one representative from the Malibu Creek WMA, one representative from the Santa Clara River WMA, and by two representatives from each of the other WMAs, along with representatives from the City of Los Angeles, and the ~~County of~~ Los Angeles County Flood Control District.

This wording is added for clarity. The Los Angeles County Flood Control District is the Principal Permittee. A formal letter to rescind the submitted ROWD for the Santa Clara River Watershed Management Area (WMA) and add the City of Santa Clarita as a Co-Permittee under the Los Angles Basin Permit will be sent at a later date.

E. General Requirements

1. Each Permittee shall, at a minimum, adopt and implement the elements of the SQMP and its components that are consistent with the terms of this permit.

2. Additionally, modifications to the SQMP made during the term of the permit including those made in accordance with part 3.F.1. of this permit shall be implemented.

3. The SQMPs shall, at a minimum, comply with the applicable storm water program requirements of 40 CFR 122.26(d)(2). The SQMP and its components shall be implemented so as to reduce the discharges of pollutants in storm water to the maximum extent practicable. The SQMP Table of Contents are described in Attachment A.

   Attachment A does not refer to the SQMP Table of Contents

4. Each Permittee shall be responsible for implementation of the relevant portions of the SQMPs within its jurisdictional boundaries. The Principal Permittee shall be responsible for program coordination as described in 3.B., as well as, compliance with the relevant portions of the permit within its jurisdiction.

F. SQMP Modifications

1. The Permittees shall modify the SQMP and its components adopted with this Order to make it consistent with the requirements herein. The revised SQMP and its components will be submitted to the Regional Board Executive Officer for approval no later than 180 days from the adoption of this Order.

2. The Principal Permittee shall modify the SQMP to comply with waste load allocations developed and approved pursuant to the process for the designation and implementation of approved Total Daily Maximum Loads (TMDLs) for impaired water bodies.

3. The Regional Board Executive Officer may approve changes to the SQMP and its components, except as noted in part 3.F.1., for the reasons set forth in 40 CFR 122.62(a) and (b), either:

   a) Upon petition by the Permittees or interested parties, and after providing for and considering public comment, or,

   ~~b)~~ As deemed necessary by the Regional Board Executive Officer following notice to the Permittees, and after providing for and considering public comments. In the notice to the Permittees, the Regional Board Executive Officer shall provide reasons for seeking changes to the SQMP and its components and his or her legal authority for such changes.

   As currently drafted, this section does not set forth the standard to be applied by the Executive Officer in approving changes to the

SQMP. Because the SQMP is part of the Order, its modification should follow the standards set forth in 40 CFR 122.62 for amending permits

4. The Permittees shall modify the SQMP and its components, at the direction of the Regional Board Executive Officer, to incorporate regional provisions. Such provisions may include watershed specific requirements for watersheds shared by Permittees with other MS4 programs.

Clarification needed. What are regional provisions? Please define.

G. Legal Authority

1. Permittees shall possess the necessary legal authority to prohibit non-storm water discharges, to the maximum extent practicable, to the storm drain system, including, but not limited to:

In items a through j the repetition of the word "prohibit" is unnecessary

a) ~~Prohibit~~ illicit discharges and illicit connections and a requirement for removal of illicit connections;

b) ~~Prohibit~~ the discharge of wash waters to the MS4 from the cleaning of gas stations, auto repair garages, or other types of automotive service facilities;

c) ~~Prohibit~~ the discharge of runoff to the MS4 from mobile auto washing, steam cleaning, mobile carpet cleaning, and other such mobile commercial and industrial operations;

d) ~~Prohibit~~ the discharge of runoff to the MS4 from areas where repair of machinery and equipment which are visibly leaking oil, fluid or antifreeze, is undertaken;

e) ~~Prohibit~~ the discharge of runoff to the MS4 from storage areas of materials containing grease, oil, or other hazardous substances, and uncovered receptacles containing hazardous materials;

f) ~~Prohibit~~ the discharge of chlorinated swimming pool water and filter backwash to the MS4;

g) ~~Prohibit~~ the discharge of runoff from the washing of toxic materials from paved or unpaved areas to the MS4;

h) ~~Prohibit~~ washing impervious surfaces in industrial/commercial areas that results in a discharge of runoff to the MS4; and

i) ~~Prohibit~~ the discharge of concrete or concrete laden wash water from concrete trucks, pumps, tools, and equipment to the MS4.

j) ~~Prohibit~~ spills, dumping, or disposal of materials into the MS4, other than storm water, such as:

(1) Litter, landscape debris and construction debris;

(2) Any state or federally banned pesticide, fungicide or herbicide;

(3) Food wastes; and

(4) Fuel and chemical wastes, animal wastes, garbage, batteries, and other materials that have potential adverse impacts on water quality.

k) Comply with conditions in Permittees ordinances, permits, contracts, model programs, or orders (i.e. hold dischargers to its MS4 accountable for their contributions of pollutants and flows);

l) Utilize enforcement mechanisms to require compliance with Permittees ordinances, permits, contracts, or orders;

m) Control the contribution, ~~or potential contribution~~, of pollutants in discharges of storm water runoff associated with industrial activities (including construction activities) **to** its MS4 and control the quality of storm water runoff **from** industrial sites (including construction sites). This requirement applies to source control, treatment control, and structural control BMPs; and,

n) In cases where a Permittee has probable cause to suspect a violation of discharge provisions of their stormwater ordinance, follow due process to carry out ~~all~~ inspection, surveillance and monitoring procedures necessary to determine compliance and non-compliance. ~~with permit conditions, including the prohibition of illicit discharges to the MS4~~. Permittees must possess authority, following due process, to enter, sample, inspect, review and copy records, ~~and require regular reports~~ from industrial facilities discharging polluted ~~or potentially polluted~~ storm water runoff into its MS4 (including construction sites).

We cannot inspect private property without the permission of the property owner or a court warrant

Requiring regular reports from industrial facilities is beyond the scope of an illegal discharge investigation by a permittee and is the RWQCB s responsibility.

o) Require the use of best management practices (BMPs) to prevent or reduce the discharge of pollutants to MS4s.

p) Adopt and implement an agency-specific storm water and urban runoff ordinance or amend an existing one, if necessary, to be able to enforce all requirements of the permit, effective immediately upon the adoption of this Order.

H. Annual Storm Water Program Report and Assessment

The ~~Principal~~ Permittees shall submit by October 15 of each year beginning the Year 2002, an Annual Storm Water Program Report and Assessment documenting the status of the general program and individual tasks contained in the SQMP, and in accordance with the requirements identified in the Monitoring and Reporting Program CI-6948 of this Order. The ~~Principal Permittee~~ Regional Board and the Permittees shall evaluate the Annual Storm Water Program Report and Assessment with the results of analyses from the Monitoring and Reporting program. (e.g., if the monitoring report results show a particular constituent consistently at elevated levels, that may be a trigger for Permittees to address their programs specifically for that particular situation and change them accordingly to address the problem).

The annual reporting should not be solely the responsibility of the Principal Permittee, but of all Permittees. The Permittees should evaluate results and analyses of their programs with the guidance of the Regional Board.

The Annual Storm Water Program Report and Assessment shall cover the previous fiscal year from July 1 through June 30, and shall include the information necessary to assess the Permittees' compliance status relative to this Order, and the effectiveness of implementation of permit requirements on storm water quality.

The Annual Storm Water Program Report and Assessment shall include any proposed changes to the SQMP and its components as approved by the Management Committee(s).

The ~~Principal~~ Permittees shall submit by October 15, 2001, the annual program report for period July 1, 2000 through July 26, 2001 documenting the status of the general program up to permit reissuance and the results of analyses from the monitoring and reporting program.

The annual reporting should not be solely the responsibility of the Principal Permittee, but of all Permittees

I. Storm Water Management Program Budget

1. Each Permittee shall prepare annually a budget summary on resources applied to the storm water management program. This budget summary shall include an annual summary identifying the storm water budget for the following year, using estimated percentages and written explanations where necessary, for the specific categories noted below:

   a) Program management

   ~~b) Illicit connection/illicit discharge~~

   ~~c) Development planning/development construction~~

   d) Industrial inspection activities (including construction activities)

   ~~e) Public Agency Activities~~

   ~~f) Operations and maintenance~~

   ~~g) Municipal Street Sweeping~~

   ~~h) Fleet and Public Agency Facilities~~

   ~~i) Landscape and Recreational Facilities~~

   j) ~~Capital Costs~~

   k) Public Information and Participation

   l) Monitoring Program

   ~~m) Other~~

   This budget summary would be an impossible task with respect to the County's $16 Billion budget. The cost of compiling this information would far exceed any possible value of the report. Items related to storm water quality could be best addressed in the summary provided by the Los Angeles County Flood Control District.

2. Each Permittee, in addition to the budget summary, shall report any supplemental dedicated budgets, if any, for the same categories.

J. Storm Water Monitoring Report

The Principal Permittee shall submit a Storm Water Monitoring Report on August 15, 2002 and annually on August 15 thereafter, in accordance with the requirements identified in the Monitoring and Reporting Program CI-6948 of this order. The report shall include:

a) Status of implementation of the monitoring program as described in the attached Monitoring and Reporting Program CI-6948;

b) Results of the monitoring program; and

c) A general interpretation of the significance of the results, to the extent that data allows.

K. Modification

The Regional Board Executive Officer or the Regional Board, consistent with 40 CFR 122.41, may approve changes to the SQMP as specified in 3.F.3. The petition for changes shall be filed no later than 60 days after the Annual Monitoring Program Report submittal date.

L. Best Management Practice Substitution

The Regional Board Executive Officer may approve any Best Management Practice (BMP) substitution upon petition by the Permittee(s), if the Permittee can document that:

1. The proposed alternative BMP or program will meet or exceed the objective of the original BMP or program in the reduction of stormwater pollutants; or

2. The fiscal burden of the original BMP or program is substantially greater than the proposed alternative and does not achieve a substantially greater improvement in storm water quality; and,

3. The proposed alternative BMP or program will be implemented within a similar period of time.

The Regional Board Executive Officer may approve any BMP elimination upon petition by the Permittee(s), if the Permittee can document that the BMP is not technically feasible and no substitute is available.

Part 4. SPECIAL PROVISIONS

A. Public Information and Participation Program

Permittees shall work collaboratively to implement a comprehensive education/outreach program with the following objectives:

To measurably increase the knowledge of the target audiences regarding the MS4, the impacts of storm water pollution on receiving waters, and potential solutions to mitigate the problems caused;

To measurably change the behavior of target audiences by encouraging implementation of appropriate solutions;

To involve and engage all socio-economic and ethnic groups in Los Angeles County to publicly participate in mitigating the impacts of storm water pollution.

1. Programs for Residents

a) The Principal Permittee shall implement the Public Education Program as outlined in the SQMP, including the continuation of the following activities:

- Advertising
- Media Relations
- Public Service Announcements
- "How To" Instructional Material Distributed in a Targeted and Activity-Related Manner
- Corporate, Community Association, Environmental Organization and Entertainment Industry Tie-Ins
- 1-888-CLEAN-LA and 888CleanLA.com
- Events Targeted to Specific Activities and Population Sub-groups

b) Countywide Hotline

The 888-CLEAN-LA hotline will serve as the general public reporting contact for reporting clogged catch basin inlets and illicit discharges/dumping, and general storm water management information. Each Permittee may establish its own hotline if preferred. Permittees shall include this information, updated when necessary, in public information, and the government pages of the telephone book as they are developed/published.

c) "No Dumping" Message

Each Permittee shall mark all storm drain inlets with a legible "no dumping" message. In addition, signs with prohibitive language discouraging illegal dumping must be posted at designated public access points to creeks, other relevant water bodies, and channels by July 26, 2003. Good signage shall be maintained.

d) Outreach and Education

The Principal Permittee shall implement the second Five-Year Education Plan as detailed in the SQMP.

Each Permittee shall conduct educational activities within its jurisdiction and participate in countywide events.

The Principal Permittee shall organize Public Outreach Strategy meetings with all Co-permittees on a quarterly basis. The Principal Permittee shall provide guidance for Permittees to augment the regional outreach and education program. Permittees shall coordinate regional and local outreach and education to reduce duplication of efforts.

The Principal Permittee shall insure that a minimum of 35 million impressions per year are made on the general public about storm water quality via print, local TV access, local radio, or other appropriate media.

Each Permittee shall provide all School Districts within its jurisdiction with materials, including videos, live presentations, brochures, and other media necessary to educate a minimum of 50 percent of all school children (K-12) every 2 years on storm water pollution. All Permittees shall cooperate to implement this requirement. Permittees shall provide the contact information for their appropriate storm water staff to the Principal Permittee within 30 days of the date this order is adopted. Cooperative efforts with other agencies may also be used to accomplish this requirement.

e) Pollutant-Specific Outreach

Permittees shall coordinate to develop outreach programs that target the watershed-specific pollutants listed in Table 1 no later than [one year ~~6 months~~ from the permit adoption date]. Metals may be appropriately addressed through the Industrial/Commercial businesses program. Region-wide pollutants may be included in the Principal Permittee's mass media efforts. Programs shall be appropriate for the anthropogenic sources of each pollutant.

Outreach efforts are handled through a contract and, thus more than six months will be necessary to develop the best quality program.

Table 1. Target Pollutants for Outreach

Watershed	***Target Pollutants for Outreach***
Ballona Creek	Trash, Indicator Bacteria, ~~Metals~~
Malibu Creek	Trash, Nutrients, indicator Bacteria
Los Angeles River	Trash, Nutrients (Nitrogen), Indicator Bacteria, ~~Metals~~, Pesticides
San Gabriel River	Trash, Nutrients (Nitrogen), Indicator Bacteria, ~~Metals~~
Dominguez Channel	Trash, Indicator Bacteria

Metals cannot be effectively addressed through a general education campaign. This pollutant may be more effectively restricted through State regulations on manufacturers for example a maximum metals content allowable in brakepad linings.

Each Permittee shall distribute outreach materials to the general public and target audiences, such as schools, community groups, contractors and developers, and at appropriate public counters and events. Outreach material shall include information on pollutants and sources of concern, as listed in Table 1.

2. Programs for Businesses

a) Corporate Outreach

The Principal Permittee shall develop and implement a Corporate Outreach program to educate corporate ~~heads~~ management about storm water regulations. The program shall target gas stations and restaurant chains. At a minimum, this program shall include:

It may not be possible to contact corporate heads, however, corporate managers may be more accessible

~~(1)~~ Distribution of educational material to corporate ~~heads~~ management by mail explaining storm water regulations and indicating that on-site consultation on BMP implementation is available ~~to explain storm water regulations;~~

Contact should first be made by mail indicating that an on-site visit is available upon request. It is unlikely that we will be able to visit directly with management; otherwise.

(2) ~~Distribute and discuss BMP and educational material, and~~ Provide corporate management with suggestions to ~~facilitate~~ encourage their employee compliance with stormwater regulations.

We will meet with management to discuss BMPs and explain storm water quality regulations.

Corporate Outreach for all gas station and restaurant chain corporations shall occur once every 2 years, not less than twice during the permit term.

b) Business Assistance Program

Permittees shall develop and implement a Business Assistance Program to provide confidential, technical resource assistance to small businesses to help them understand and comply with storm water regulations. At a minimum, programs shall include:

(1) On-site technical assistance or consultation via telephone to identify and implement pollution prevention methods and best management practices;

(2) Availability, distribution, and discussion of applicable BMP and educational materials; and,

(3) Access to information concerning environmental consulting services, hazardous waste treatment, hauling, disposal and recycling services, and pollution prevention and control practices.

Permittees shall provide assistance to small businesses that meet the following criteria:

(1) Less than 100 employees;

(2) Lack funding for private consulting;

(3) Lack access to the expertise necessary to understand and comply with storm water regulations; and

(4) Requested assistance, or were referred through the Industrial/Commercial Inspection Program.

Permittees shall assist (through site visits, telephone consultations, presentations or material distribution) all qualifying businesses that request assistance, or 1000 businesses per year, whichever is less.

The Business Assistance Program shall be a confidential and non-enforcement program. Permittees shall conduct follow-up independent of the Business Assistance Program, based on the priorities of the Industrial/Commercial Inspection Program.

The Principal Permittee shall submit an annual PIPP Update, with the Annual Program and Assessment Report, to the Regional Board Executive Officer for approval. The PIPP Update shall include a summary of the overall strategy and any updates or modifications to the Public Information and Participation Program.

B. Programs for Industrial/Commercial ~~Inspections~~ facilities

General Legal Comments: This section needs to be modified as set forth below to reflect that it is not the Permittees' obligation to inspect, oversee or enforce the GIASP. The draft permit, as written, violates Article XIIIB, section 6, of the California Constitution, and the GIASP itself. The federal regulations also do not authorize imposition of these obligations on the Permittees.

Article XIIIB, Section 6, of the California Constitution provides in pertinent part, "Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse such local government for the costs of such program or increased level of service . . ." The imposition on the permittees of the obligation to inspect facilities which hold a general permit for discharges of

storm water associated with industrial activities to require the BMPs designated under that permit, and to enforce those measures, is to shift responsibility for enforcement of the general permit from the regional board to the permittees. As such it is mandating a new program or a higher level of service on each permittee. Because the Board is not reimbursing the permittees for the costs of this program or higher level of service, these requirements violate the California Constitution.

The requirements also violate the General Industrial Permit itself. That permit delegates to the Regional Boards the authority to implement the permit, "including, but not limited to, reviewing SWPPPs, reviewing annual reports, conducting compliance inspections, and taking enforcement actions." (State Board Order No. 97-03-DWQ, Section F.1.a.) The General Permit does not give that authority to municipal storm water permittees.

The federal regulation cited in the fact sheet/staff report also does not authorize imposition of these obligations on the Permittees. 40 CFR 122.26(d)(2)(iv)(C) applies only to landfills, hazardous waste treatment, disposal or recovery facilities, facilities subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the MS4. There is no reference in these sections to inspecting, monitoring or controlling pollutant loads from all holders of general industrial permits.

Each Permittee shall implement an Industrial/Commercial Inspection **Program to:**

Intent is clearer with these wording changes

Achieve the control and reduction of pollutants in storm water runoff from ~~all~~ Industrial/Commercial sites specified in this permit in section 5(b) below **to the maximum extent practicable.**

Need to specify which facilities are supposed to be visited.

At a minimum the Industrial/Commercial program shall address:

(GENERAL COMMENT: THE FOLLOWING BULLET ITEMS ARE REPEATED IMMEDIATELLY AFTERWARDS IN ITEMS 1 THROUGH 7. IT MAY BE SIMPLER TO CONSOLIDATE THE TWO SECTIONS)

- Regulation of stormwater and non-stormwater discharges of pollutants into Permittee MS4s with appropriate legal penalties for non-compliance. ~~**Regulatory mechanism requiring the implementation of proper Pollution Prevention and control measures at Industrial/Commercial sites**~~;

To the extent that implementation of proper pollution prevention and control measures is a requirement under State law, their enforcement is the RWQCB's responsibility. We can only enforce our local stormwater ordinance

- Source Identification;
- Threat to Water Quality;
- BMP evaluations ~~Site plan review and BMP Implementation~~;

  Same comment as for bullet #1

- Inspection of Industrial/Commercial sites specified in this permit;

  Clarifies which sites are referenced.

- Enforcement of Permittees' stormwater ordinances ~~pollution prevention and control measures~~ at Industrial/Commercial sites;

  Same comment as for bullet #1

- ~~Have sanctions to ensure compliance (established in the regulatory mechanism).~~

  All ordinances are enforceable and have penalties for non-compliance. The statement is unnecessary

~~1.~~ Prohibition of the discharge of pollutants into Permittee MS4s. ~~Pollution Prevention (Industrial/Commercial)~~

Wording changed for clarity

Each Permittee shall have the legal authority to regulate stormwater and non-stormwater discharges into Permittee MS4s with appropriate legal penalties for non-compliance. ~~implement pollution prevention methods in its Industrial/Commercial Program and shall require its use by industrial/commercial businesses, where appropriate.~~

To the extent that implementation of proper pollution prevention and control measures is a requirement under State law, their enforcement is the RWQCB's responsibility. We can only enforce our local stormwater ordinance

2. Source Identification (Industrial/Commercial)

Each Permittee shall develop and update annually a watershed-based inventory of all actual Industrial/Commercial sites within its jurisdiction as defined under [illegible] below ~~regardless of site ownership~~. The inventory may be expanded through designation by the WMC as additional information becomes available. This requirement is applicable to all Industrial/Commercial sites regardless of whether the

Industrial/Commercial site is subject to the GIASP or other individual NPDES permit, ~~or commercial sites~~. The update of the database may be performed through new information obtained through field activities or through other readily available intra-agency informational databases (e.g. business license, pretreatment permits, sanitary sewer hook-up permits, etc...) The inventory shall include the following minimum information for each Industrial/Commercial site:

"Applicable" is added to clarify that we only update for the specified SIC codes. "Regardless of site ownership" was removed because Federal and State facilities, for example, are not subject to our inspection and should not be included in the listing. "Commercial sites" seems not to belong in the sentence

a) name;

b) address; and

c) a narrative description including SIC codes that best reflects the principal products or activities performed by each facility. The use of an automated database system, such as Geographical Information System (GIS) or web-based is highly recommended, but not required. Any database already available may be used to satisfy the requirements of this section. The Permittees may use other fields of information, as necessary (e.g. to point out discrepancies between SIC Code designation and type of activities ~~in reality~~ actually performed on-site).

Changed for clarity

3. Threat to Water Quality Prioritization (Industrial/Commercial)

The program for Industrial/Commercial Businesses will address at the minimum, the following categories of activities:

a) All industrial groups regulated under Phase I of the federal storm water program;

b) Motor vehicle repair shops, motor vehicle body shops, motor vehicle parts and accessories facilities;

c) Restaurants. The County Health ~~Department~~ Code shall be amended with applicable regulations prohibiting illicit discharge to the MS4 ~~to facilitate compliance with this Order. At a minimum, the Code shall be modified to~~ inspections for compliance with discharge prohibitions shall be included as part of the routine health inspection of each restaurant. Such inspections shall include at a minimum

Clarifies intent. Please note that final DHS comments are pending on this item

(1) Parking lot, alley, sidewalk and street areas. Inspectors will verify that floormats, filters and garbage containers are not washed in those areas. They will also verify that no washwater is poured in those areas.

(2) Dumpster areas. Inspectors will verify that the dumpster area is clean with the lid closed and not filled with liquid or hosed out.

(3) Oil and Grease residue is not poured onto a parking lot, street or adjacent catch basin.

(4) Parking lot area is cleaned by sweeping and not by hosing down. The facility uses dry methods for spill cleanup.

d) Other Commercial facilities as designated by the WMC (contributing or potentially contributing to the impairments of receiving waters). Inspection programs and frequencies for these facilities will be developed by the WMC and be approved by the Executive Officer prior to implementation.

Clarifies definition of "other commercial facilities"

4. BMP ~~Implementation~~ survey

We may request to survey a facility's BMPs and report on their implementation, however, it is the RWQCB's responsibility to enforce the BMP implementation

~~a)~~ Each Permittee shall survey applicable BMPs at each industrial commercial site specified in the permit and note their implementation. If particular minimum BMPs are infeasible at any site, each Permittee shall recommend other equivalent BMPs. ~~implement, or require the implementation of, the designated minimum BMPs, as approved in Resolution No. 98-08, at each industrial/commercial site within its jurisdiction. If particular minimum BMPs are infeasible at any specific site, each Permittee shall implement, or require implementation of, other equivalent BMPs. Each Permittee shall also implement or require any additional site specific BMPs as necessary to comply with this Order including BMPs which are more stringent than those required under the statewide General Industrial Permit.~~

We may request to survey BMPs and report on their implementation, however, it is the RWQCB's responsibility to enforce the BMPs implementation.

b) Each Permittee shall ~~implement, or require~~ encourage the implementation of additional controls for Industrial/Commercial

sites tributary to Clean Water Act section 303(d) impaired water bodies (where a site discharges pollutants for which the water body is impaired) as necessary to comply with this Order. Each Permittee shall ~~implement, or require~~ encourage the implementation of additional controls for Industrial/Commercial sites within or directly adjacent to or discharging directly to coastal lagoons or other receiving waters within environmentally sensitive areas as necessary to comply with this Order.

We may encourage the use of BMPs however it is the RWQCB's responsibility to enforce their implementation

5. Inspection of Industrial/Commercial Sites

a) Each Permittee shall conduct the specified Industrial site inspections in b.b. below for compliance with its stormwater ordinances and its permits and to survey minimum BMPs. ~~Inspections shall include review of BMP implementation plans or implementation of the required minimum BMPs~~.

We may request to inspect for discharge violations covered under our storm water ordinance. We may also survey BMPs and report on their implementation, however, it is the RWQCB's responsibility to enforce the BMPs implementation.

b) ~~Each Permittee shall establish inspection frequencies for facilities described in B.3. above~~. Each Permittee shall inspect specified Industrial/commercial sites, at a minimum:

Changes made for clarity.

Facility Type	Inspection Frequency
Restaurants*	Once in 24 months, but not less than twice during the life of the permit
Automotive Service Facilities*	Once in 24 months, but not less than twice during the life of the permit
~~Other Commercial~~ * Other industries designated by the WMC* Process for designating and visiting "other commercial" needed to be reiterated.	~~Once in 24 months, but not less than twice during the life of the permit~~ Subject to development by the WMC and approval by the Executive Officer
Phase I Facilities*	Once in 24 months, but not less than twice during the life of the permit

* ~~During~~ After the first cycle of inspections, ~~all~~ facilities ~~will be investigated, regardless of exposure or non-exposure. After that cycle is concluded sites~~ without exposure need not be addressed in the following cycles.

Wording changed for clarity

c) Based upon the results of site inspections, each Permittee shall implement all follow-up actions necessary to assure compliance ~~comply~~ with Permittee's ordinances and this Order.

Wording changed for clarity

d) To the extent that Regional Board staff has conducted an inspection of an Industrial/Commercial site during a particular year, or the facility has a GIASP or an individual NPDES Permit, the requirement for the responsible Permittee to inspect this site will be satisfied.

6. Enforcement of stormwater ordinances ~~Pollution Prevention and Control Measures~~ at Industrial/Commercial Sites

We may request to inspect for discharge violations covered under our storm water ordinance. However, it is the RWQCB's responsibility to enforce BMPs implementation

~~a)~~ Each Permittee shall enforce its storm water ordinance within its jurisdiction ~~at all Industrial/Commercial sites~~ as necessary to maintain compliance with this Order. ~~Permittee ordinances or other regulatory mechanisms shall include sanctions to ensure compliance.~~

We can only enforce our ordinances within our jurisdiction. All Permittee ordinances have penalties for non-compliance.

~~7. Reporting of Non-compliant Sites (Industrial/Commercial)~~

~~a) Each Permittee shall provide oral notification to the Regional Board of non-compliant sites that are determined to be in non-compliance with existing storm water regulations (within 3 days of discovery) or create an adverse impact or nuisance as it relates to the quality of the receiving waters of the State within its jurisdiction, within 24-72 hours of the discovery.~~

~~Such oral notification shall be followed up by a written report to be submitted to the Regional Board within 5 days of the incidence of non-compliance. Sites are considered non-compliant when one or more violations of local ordinances, permits, plans, or this Order exist on the site.~~

We will continue to send quarterly compliance updates to the RWQCB. The proposed requirement would impose a significant and unnecessary effort on Permittees.

b) Permittees shall develop and submit criteria by which to evaluate events of non-compliance to determine whether they create an adverse impact or nuisance. These criteria shall be submitted in

the SQMP and Annual Report for Regional Board review and subject to Regional Board Executive Officer's approval.

C. Programs for Development Planning

Note that there is inconsistency in the draft permit. In Section C.1 it requires the application of Program for Development Planning elements for priority projects only, and in Sections C.3, C.5, and C.8 it requires the program's elements for all projects.

1. The Permittees shall implement a development-planning program ~~with immediate effect~~ that will require all planning priority development and redevelopment projects to,

a) ~~Minimize~~ implement, to the MEP ~~impacts from storm water and urban runoff on the biological integrity of natural drainage systems and water bodies in accordance with requirements under CEQA, Section 404 of the CWA, local ordinances and other legal authorities~~ requirements established by appropriate governmental agencies under CEQA, Section 404 of the CWA, local ordinances and other legal authorities intended to minimize impacts from storm water runoff on the biological integrity of natural drainage systems and water bodies;

It is the responsibility of the Department of Regional Planning to check, during their planning review, the inclusion of standards to minimize impacts from storm water runoff on the biological integrity of natural drainage systems set forth by other authorities.

b) Maximize, to the MEP, the percentage of permeable surfaces to allow more percolation of storm water into the ground;

c) Minimize, to the MEP, the quantity of storm water directed to impermeable surfaces and the MS4;

d) Minimize, to the MEP, pollution emanating from parking lots through the use of appropriate treatment control BMPs and good housekeeping practices;

~~e) Establish reasonable limits on the clearing of vegetation from the project site including, but not limited to, regulation of the length of time during which soil may be exposed and in certain environmentally critical situations, the prohibition of bare soil;~~

Item e) is [illegible] under the SUSMP and the Development Construction [illegible]gram requirements.

f) Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from the development site to the MEP.

Adding MEP to items a) through d) and f) is consistent with the CWA. Section 402(p)(3)(B)(iii) of the CWA requires that municipal permits "shall require control to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

To accomplish this, the Permittees shall revise their Development Planning Program in the SQMP within 180 days of adoption of this Order, subject to the approval of the Executive Officer.
This language is consistent with other programs' language update requirements in this draft permit.

~~2. Peak Flow Control~~

First, this requirement will create a very significant burden on the development community, most notably single lot developers, small business owners, etc. The requirements may render many projects infeasible. Second, the requirement should be substantiated with adequate science. It has not been proven that the only solution to water quality issues with regards to impervious area creation is the restriction of flows/volumes. Many jurisdictions in the Pacific Northwest have been trying to deal with reductions in peak flows for many years, and have experienced many problems, both with execution and results. Those jurisdictions are looking to alternate analyses/solutions to the issue, such as verification studies to determine the extent of effect(if any) to river biology due to changes in flow, environmentally friendly streambank stabilization, etc. Some believe that some increases in flow may actually improve river ecosystems, especially in arid regions such as ours. Therefore, it is recommended that the Regional Board should give flexibility to the Permittees with regards to alternate solutions/analyses to solve the water quality issues.

~~The Permittees shall establish and enforce numerical criteria no later than [90 from permit adoption] to control the post-development peak storm runoff discharge rates in natural drainage systems to maintain or reduce pre-development peak discharge rates to prevent down-stream erosion, and to protect stream habitat. Natural drainage systems include, but are not limited to, the following:~~

~~a) Malibu Creek~~

~~b) Topanga Canyon~~

~~c) Upper Los Angeles River~~

~~d) Upper San Gabriel River~~

e) ~~Soft-bottom segments of other receiving waters within Los Angeles County~~

3. Standard Urban Storm Water Mitigation Plans

a) Each Permittee shall require that single-family hillside home developments:

~~(1) Conserve natural areas~~

Single-family hillside developments qualify as ministerial projects under County definition. The proposed provision is discretionary in nature. No legal authority exist to impose such conditions.

(2) Protect slopes and channels

(3) Provide storm drain system stenciling and signage

(4) Divert roof runoff to vegetated areas before discharge

(a) Unless diversion has potential to reduce site stability If a landslide is created as a result of diversion, Permittees will be subjected to lawsuits by property owners

(5) Direct surface flow to vegetated areas before discharge

(a) Unless diversion has potential to reduce site stability If a landslide is created as a result of diversion, Permittees will be subjected to lawsuits by property owners

b) Each Permittee shall require that a Standard Urban Storm Water Mitigation Plan as approved by the Regional Board in Board Resolution No. R 00-02 be implemented for the following categories of discretionary developments projects with immediate effect:

To be consistent with the definition of priority projects.

(1) Single-family hillside residential developments of ~~10,000 square feet~~ 1 acre or more of disturbed area

(2) Ten or more unit homes (includes single family homes, multifamily homes, condominiums, and apartments)

(3) A 100,000 or more square feet industrial/ commercial development

(4) Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534, and 7536-7539)

(5) Retail gasoline outlets

(6) Restaurants (SIC 5812)

(7) Parking lots 5,000 square feet or more or with 25 or more parking spaces

c) Each Permittee shall require, no later than 180 days from permit adoption that a Standard Urban Storm Water Mitigation Plan be implemented for all discretionary development projects located in or directly adjacent to or discharging directly to an environmentally sensitive area, where, the development will:

(1) create 2,500 square feet or more of impervious area, or

(2) alter the area of imperviousness of the site to ten or more percent of the naturally occurring condition, and

(3) discharge storm water and urban runoff that is likely to impact a sensitive biological species or habitat

4. Numerical Design Criteria

We recommend item #4 and #6 be consolidated into item #3 as d) and e) since they are part of the SUSMP requirements.

The Permittees shall require that post-construction treatment control BMPs incorporate, at a minimum, the following design criteria to mitigate (infiltrate, filter or treat) storm water runoff:

a) Volumetric Structural or Treatment Control BMP

(1) the 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998)*, or

(2) the volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in

California Stormwater Best Management Practices Handbook – Industrial/ Commercial, (1993), or

(3) the volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or

(4) the volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event,

AND/ OR

b) Flow Based Structural or Treatment Control BMP

(1) the flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity, or

(2) the flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County

(3) the flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above,

5. Applicability of Numerical Design Criteria

The Permittees shall require the following categories of planning priority projects to design and implement post-construction treatment and structural controls to mitigate storm water pollution prior to issuing grading or building permits:

a) Single-family hillside residential developments of ~~10,000 square feet~~ 1 acre or more of disturbed area

b) Ten or more unit home development (includes single family homes, multifamily homes, condominiums, and apartments)

c) A 100,000 or more square feet industrial/ commercial development

d) Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534 and 7536-7539)

e) Retail gasoline outlets [suggested criteria: projected gasoline output of 25,000 gallons per month or more; or with four or more fueling dispensers, or with 24 or more dispensing meters or projected average daily traffic of 100 cars or more or 5,000 square feet or more of surface area]

f) Restaurants (SIC 5812) [5,000 square feet or more]

g) Parking lots 5,000 square feet or more or with 25 or more parking spaces

h) Projects located in, adjacent to or discharging directly to environmentally sensitive areas that meet threshold conditions identified above.

6. Each Permittee shall require the implementation of SUSMP and post-construction control requirements for the following categories of discretionary development planning projects no later than March 9, 2003, to conform to USEPA Phase II requirements:

a) One acre (~~40,000~~ 43,560 square feet) industrial/commercial development

7. Site Specific Mitigation

a) Each Permittee shall require a site-specific plan for discretionary developments . . . cts not requiring a SUSMP but which may potentially have adverse impacts on post-development storm water quality, where the following project characteristics exist:

(1) Vehicle or equipment fueling areas;

(2) Vehicle or equipment maintenance areas, including washing and repair

(3) Commercial or industrial waste handling or storage

(4) Outdoor handling or storage of hazardous materials;

(5) Outdoor manufacturing areas

(6) Outdoor food handling or processing

(7) Outdoor animal care, confinement, or slaughter

(8) Outdoor horticulture activities

8. Redevelopment Projects

The Permittees shall apply the SUSMP, or site specific requirements including post-construction storm water mitigation to all priority projects that undergo significant redevelopment in their respective categories. Significant redevelopment means the creation or addition or replacement of 5,000 square feet of impervious surface area on an already developed site. Where significant redevelopment results in an increase of more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post development storm water quality control requirements, the entire project must be mitigated.

9. Maintenance Agreement and Transfer

Each Permittee shall require that all developments subject to SUSMP and site specific plan requirements provide verification of maintenance provisions for structural and treatment control BMPs, including but not limited to legal agreements, covenants, CEQA mitigation requirements, and or conditional use permits. Verification at a minimum shall include:

a) The developers signed statement accepting responsibility for maintenance until the responsibility is legally transferred, and either

b) A signed statement from the public entity assuming responsibility for structural or treatment control BMP maintenance and that it meets all local agency design standards, or

c) Written conditions in the sales or lease agreement, which requires the recipient to assume responsibility for maintenance and conduct a maintenance inspection at least once a year, or

d) Written text in project conditions, covenants and restrictions (CCRs) for residential properties assigning maintenance responsibilities to the Home Owners Association for maintenance of the structural and treatment control BMPs; or

e) Any other legally enforceable agreement that assigns responsibility for the maintenance of post-construction structural or treatment control BMPs

~~10. Mitigation Funding~~

~~The Permittees shall identify no later than [120 days from permit adoption] a funding mechanism[s] and management framework, for endorsement by the Regional Board Executive Officer, to support regional solutions to storm water pollution, where the following situations occur:~~

~~f) A waiver for impracticability is granted or threat to ground water exists~~

~~g) Legislative funds become available~~

~~e) Off-site mitigation is required because of loss of environmental habitat~~

10 Regional Storm Water Mitigation Program

A Permittee or Permittee group may apply to the Regional Board for approval of a regional storm water mitigation program. The Executive Officer in the exercise of his discretion shall approve such a regional program if he determines that it is likely to result in equal or greater water quality benefit than project-by-project mitigation, as described above. Permittees and project proponents that participate in any approved regional storm water mitigation program shall in so doing satisfy the requirement for the application of the numerical design criteria.

Regional solutions to meet the SUSMP requirements are cost effective and have a good chance of being supported by developers and municipalities

~~11. California Environmental Quality Act (CEQA) Document Update~~

~~Each Permittee shall modify planning procedures for preparing and reviewing CEQA documents to consider potential storm water quality impacts and provide for appropriate mitigation, with immediate effect. The CEQA guidelines shall require consideration of the following:~~

~~a) Potential Impact of project construction on storm water runoff~~

~~b) Potential Impact of projects post-construction activity on storm water runoff.~~

~~c) Potential for discharge of storm water from areas from material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas.~~

~~d) Potential for discharge of storm water to impair the beneficial uses of the receiving waters or areas that provide water quality benefit~~

~~e) Potential for the discharge of storm water to cause significant harm on the biological integrity of the waterways and water bodies~~

~~f) Potential for significant changes in the flow velocity or volume of storm water runoff that can cause environmental harm~~

g) ~~Potential for significant increases in erosion of the project site or surrounding areas~~

The consideration of potential storm water quality impacts is already an element of the CEQA guidelines It does not need to be included in this draft permit

~~12. General Plan Update~~

~~Each Permittee shall update appropriate elements of its General Plans to include watershed and storm water quality and quantity management considerations no later than [540 days from permit adoption date]. Appropriate elements include, but are not limited to, water quality protection, development goals and policies, open space goals and policies, preservation of and integration with natural features, and water conservation policies.~~

The General Plan is adopted according to state statutory schemes. It is the obligation of the County s Board of Supervisors to develop its goals and policies The Regional Board has no authority to direct specifications of revision of the General Plan Furthermore, the environmental concerns

that the Regional Board's requests are already taken into consideration in the County's General Plan.

13. Targeted Employee Training

Each Permittee shall train its employees in targeted positions (whose jobs or activities are engaged in development planning) regarding the requirements of the development planning on an annual basis beginning no later than [~~90 d~~ 356 d from permit adoption], and more frequently if necessary.

To be consistent with other programs' time frame.

~~14. Developer Technical Guidance and Information~~

We participated in the update of the State BMPs Handbooks which are expected to be completed in 18 months. Therefore, the requested technical manual is unnecessary and would require considerable amount of time, expertise, and staff that the Permittees do not have.

~~a) Each Permittee shall develop and make available to developer development planning guidelines with immediate effect.~~

b) ~~Permittees shall develop no later than [365 days from permit adoption] a technical manual for the siting and design of BMPs for the development community. The technical manual shall at a minimum include:~~

~~(1) Specifications for treatment control BMPs based on flow-based and/ volumetric water quality design criteria for the purposes of countywide consistency,~~

~~(2) Criteria for control of peak discharge rates, velocities and duration,~~

~~(3) Expected pollutant removal performance ranges~~

~~(4) Maintenance considerations~~

~~(5) Cost considerations~~

D. Programs for Construction Sites

Each Permittee shall implement a program to ~~control~~ reduce pollutants in runoff from construction activity at all construction sites through the use of BMPs to the MEP. To accomplish this, the Permittees shall revise their Development Construction Program in the SQMP within 180 days of adoption of this Order,

subject to the approval of the Executive Officer. The revisions shall specify a schedule for implementation by each Permittee, and must contain the following minimum elements, including performance measures, schedules for implementation, and shall include the following categories of construction:

To be consistent with the objective of the Program to reduce pollutants in runoff from construction activities

a) Five or more acres;

b) Between one and five acres; and

c) Less than one acre.

1. For construction sites less than 1 acre, each Permittee shall:

~~a) Implement an educational program to discuss storm water pollution prevention and controls at construction sites and distribute educational materials targeted to the construction community during meetings, workshops, pre-construction meetings, and inspections.~~

~~a) Train employees in targeted positions (whose jobs or activities are engaged in construction activities including construction inspection staff) regarding the requirements of the storm water management program no later than (180 days from adoption of this Order), and annually thereafter; and~~

Item a) and b) are individual requirements under the Program. We recommend placing these two items to the end of this Section as item #5 and #6

~~c)~~a) Require the implementation of a minimum set of BMPs to prevent pollution and control storm water runoff discharges. These minimum BMPs shall, at a minimum, include:

- Requirements for the use of effective erosion and sediment controls at construction sites;
- Requirements for structural and non-structural Best Management Practices (BMPs) for controlling runoff at construction sites;
- ~~Site plan for review and verification of BMP implementation~~ ; ~~and~~

b) Verification of inclusion of minimum BMPs notes on construction plans and [illegible] BMPs implementation.

The language is changed for clarity. Furthermore, this bullet should not be included as part of the minimum BMPs, so we recommend that it be an item "b)" under D.1.

~~• Each Permittee is encouraged to prioritize sites to be inspected during wet weather to determine compliance with the minimum BMPs.~~

c) Each Permittee, if necessary, is encouraged to prioritize sites to be inspected during wet weather to determine compliance with the minimum BMPs

The County inspects all construction sites within the County unincorporated areas and contracted cities.

2. For construction sites between one acre and ~~greater~~ five acres each Permittee shall require that in D.1 above and require the preparation, submittal, and implementation of a Local Storm Water Pollution Prevention Plan (Local SWPPP), prior to issuance of a grading permit for construction projects, that meets one or more of the following criteria:

a) Will result in soil disturbance of one acre or more in size;

b) Is within, directly adjacent to, or is discharging directly to an environmentally sensitive area; or

c) Is located in a hillside area.

The Local SWPPP shall include appropriate construction site BMPs and maintenance schedules. A State required SWPPP may be substituted by a Local SWPPP if the Local SWPPP is at least as inclusive as the requirements for a State SWPPP. The BMPs may be selected from documents such as the California Storm Water BMP Handbook, the Caltrans Storm Water Quality Handbook, Ventura County Stormwater Quality Standard Sheet, American Society of Civil Engineers (ASCE) database or similar guidance documents. In addition, each Permittee shall ensure the following minimum requirements are effectively implemented, to the maximum extent practicable, at all construction sites regardless of size:

Adding MEP is consistent with the Ventura Permit and the CWA.

d) Sediments generated on the project site shall be retained using adequate structural drainage controls;

e) ~~No~~ construction-related materials, wastes, spills, or residues shall be ~~discharged~~ retained on site to minimize transport from the project site to streets, drainage facilities or adjacent properties by wind or runoff;

The proposed language is consistent with item D.2 d).

f) Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the project site; and

g) Erosion from slopes and channels will be prevented by implementing BMPs including, but not limited to: ~~limiting of grading scheduled during the wet season;~~ inspecting graded areas during rain events; planting and maintenance of vegetation on slopes; and covering erosion susceptible slopes.

We have regulations that require properly engineered erosion control to be used on all grading projects; therefore we do not need any limitation on grading schedules during the wet season.

The Local SWPPP must include the rationale used for selecting or rejecting BMPs. The project architect, or engineer of record, or authorized qualified designee, must sign a statement on the Local SWPPP to the effect:

"As the architect/engineer of record, I have selected appropriate BMPs to effectively minimize the negative impacts of this project's construction activities on storm water quality. The project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activity."

~~The landowner shall sign a statement to the effect:~~

~~*"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/or inaccurate information, failing to update the Local SWPPP to reflect current conditions, or failing to properly and/or adequately implement the Local SWPPP may result in revocation of grading and/or other permits or other sanctions provided by law."*~~

~~The Local SWPPP certification shall be signed by the landowner as follows:~~

~~For a corporation: by a responsible corporate officer which means (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of the construction activity if authority to sign documents has~~

~~been assigned or delegated to the manager in accordance with corporate procedures;~~

~~For a partnership or sole proprietorship: by a general partner or the proprietor; or~~

~~For a municipality or other public agency: by an elected official, a ranking management official (e.g., County Administrative Officer, City Manager, Director of Public Works, City Engineer, District Manager), or the manager of the construction activity if authority to sign Local SWPPPs has been assigned or delegated to the manager in accordance with established agency policy.~~

It is the responsibilities of the project architect/engineer to insure that the plan is in compliance of all regulations (state and local laws).

3. ~~For sites one acre and greater, each~~ Permittees shall inspect all construction sites with Local SWPPPs ~~(or SWPPPs)~~ for storm water quality requirements during routine inspections a minimum of once during the wet season. The Local SWPPP ~~(or SWPPP)~~ shall be reviewed for compliance. For inspected sites that have not adequately implemented their Local SWPPP ~~(or SWPPP)~~, a follow-up inspection to ensure compliance will take place within 2 weeks. If compliance has not been attained, the Permittee will take additional actions to achieve compliance (as specified in Local ~~or State~~ codes). ~~If compliance has not been achieved, and the site is covered under the State General Construction Activity Storm Water Permit, each Permittee shall notify the enforce their Local ordinance requirements and if non-compliance continues for further joint enforcement actions~~.

This section needs to be modified to reflect that it is not the Permittees' obligation to inspect, oversee or enforce the General Construction Activity Storm Water Permit. The draft permit, as written, violates Article XIIIB, section 6, of the California Constitution, and the GCASP itself. The federal regulations also do not authorize imposition of these obligations on the Permittees.

Article XIIIB, Section 6, of the California Constitution provides in pertinent part, "Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse such local government for the costs of such program or increased level of service . . ." The imposition of the obligation to inspect to assure compliance with the GCASP is to shift responsibility for enforcement of the general permit from the regional board to the permittees. As such it is mandating a new program or a higher level of service on each permittee. Because the Board is not reimbursing the permittees for the costs of this program or higher level of service, these requirements violate the California

Constitution

The requirements also violate the General Construction Permit itself. That permit delegates to the Regional Boards the authority to implement the permit, including, but not limited to, reviewing SWPPs, reviewing monitoring reports, conducting compliance inspections, and taking enforcement actions " (State Board Order No.99-08-DWQ, Section D 1 a) The General Permit does not give that authority to municipal storm water permittees

The federal regulations also do not authorize imposition of these obligations on the Permittees 40 CFR 122.26(d)(2)(iv)(D) requires a description of a program to implement best management practices to reduce pollutants in storm water from constructions sites There is no reference in this section to overseeing or enforcing the General Construction Permit

It is the Regional Board's responsibilities to verify and enforce the provisions of the General Construction Permit. The County should not legally assume the Regional Board's statutory responsibilities of enforcing any non-compliance of state SWPPPs

4. For sites five acres and greater, each Permittee shall require that in D.1 above and:

a) Require proof of filing of a Notice of Intent (NOI) for coverage under the State General Construction Activity Storm Water Permit and a copy of the SWPPP prior to issuing a grading permit for all projects requiring coverage under the state general permit. On March 10, 2003, for sites one acre and greater, each Permittee shall require proof of filing a Notice of Intent (NOI) for coverage under the State General Construction Activity Storm Water Permit and a copy of the SWPPP prior to issuing a grading permit for all projects requiring coverage under the state general permit. The prepared SWPPP may satisfy the requirement under D.2. (in-lieu of Local SWPPP).

Each Permittee shall require proof of an NOI and a copy of the SWPPP at any time a transfer of ownership takes place for the entire development or portions of the common plan of development where construction activities are still on-going.

~~b) Each Permittee shall use an electronic system to track grading permits issued by each Permittee.~~

It is more appropriate to leave this requirement to the discretion of the Permittees There may not be a need to use an electronic system

c) Each Permittee shall inspect construction sites covered under the State General Construction Activity Storm Water Permit for storm

water quality requirements during routine inspections a minimum of once during the wet season. If violations are observed during the inspection, the Permittee must notify the Regional Board.

5. Implement an educational program to discuss storm water pollution prevention and controls at construction sites and distribute educational materials targeted to the construction community during meetings, workshops, pre-construction meetings, inspections, and as appropriate

6. Train employees in targeted positions (whose jobs or activities are engaged in construction activities including construction inspection staff) regarding the requirements of the storm water management program no later than (~~180~~ 356 days from adoption of this Order), and annually thereafter.

E. Public Agency Activities

1. Each Permittee shall implement a Public Agency program to minimize storm water pollution impacts from public agency activities. Public Agency requirements consist of:

- Sewage Systems Operations
- Public Construction Activities
- Vehicle Maintenance/Material Storage Facilities Management
- Landscape and Recreational Facilities Management
- Storm Drain Operation and Management
- Streets and Roads Maintenance
- Parking Facilities Management
- Public Industrial Activities
- Emergency Procedures
- ~~Dry Weather Diversions~~

There is no formal dry weather diversion construction program, therefore this category should be removed.

2. Sewage System Operations

Each Permittee shall implement a response plan for overflows of the sanitary sewer system within their respective jurisdiction which shall consist of the following at a minimum:

a) Investigate any complaints received;

b) Immediately respond to overflows by containment; and

c) Notify appropriate sewer and public health agencies when a sewer overflows to the MS4.

For those Permittees which own and/or operate a sanitary sewer system, each Permittee shall also implement the following requirements until such time that they are superceded by the proposed Capacity, Management, Operation and Maintenance Regulations (CMOM) are promulgated by the USEPA:

d) A program to prevent sewage spills or leaks from sewage facilities from entering the MS4; and

e) Identify, repair, and remediate sanitary sewer blockages, exfiltration, overflow, and wet weather overflows from sanitary sewers to the MS4.

3. Public Construction Activities Management

a) Each Permittee shall implement a program to control runoff from construction activity at all construction sites. To accomplish this, the Permittees shall revise their Construction Development Program in the SQMP within 180 days of adoption of this Order, subject to the approval of the Executive Officer. The revisions shall specify a schedule for implementation by each Permittee, and must contain the following minimum elements, including performance measures, schedules for implementation, and shall include the following categories of construction:

(1) Five or more acres;

(2) Between one and five acres; and

(3) Less than one acre.

b) Each Permittee shall comply with requirements 1, 2, and 3 in the Construction Section of this Order and with the following requirements at all public construction sites:

(1) Design and construction of public facilities shall be consistent with the requirements and dates specified for private development in Part 4.C Programs for Development Planning;

(2) Prepare and retain site-specific SWPPPs for municipal construction sites;

(3) Implement construction and post-construction storm water controls as required of private construction projects,

including numerical mitigation criteria for post-construction BMPs;

(4) Implement a program to ensure that SWPPPs and BMPs implemented are effective;

(5) Inspect public construction sites and implement changes as necessary to maintain or replace ineffective BMPs in order to protect water quality; and

(6) Each Permittee shall obtain coverage under the State of California General Construction Activities Storm Water Discharge Permit coverage for public construction sites for sites 5 acres or greater (or part of a larger area of development, etc...) except that a municipality under 100,000 in population need not obtain coverage under a separate permit until March 10, 2003.

~~c) On March 10, 2003, each Permittee shall obtain coverage under the State of California General Construction Activities Storm Water Discharge Permit coverage for public construction sites for sites 1 acre or greater (or part of a larger area of development, etc...).~~

This is based on a requirement that doesn't currently exist and therefore shouldn't be included at this time.

4. Vehicle Maintenance/Material Storage Facilities/Corporation Yards Management

a) Each Permittee shall implement pollution prevention plans for public vehicle maintenance facilities and material storage facilities which have the potential to discharge pollutants into storm water.

b) Each Permittee shall implement BMPs to minimize pollutant discharges in storm water including but not be limited to:

(1) Good housekeeping practices;

(2) Material storage control;

(3) Vehicle leaks and spill control; and

(4) Illicit discharge control;

c) Each Permittee shall require that all vehicle/equipment wash areas be self-contained or covered, or equipped with a clarifier, or other pretreatment device, and properly connected to the sanitary sewer to prevent the discharge of pollutants to the MS4 for new facilities or during redevelopment of existing sites.

~~d) Each Permittee shall, for each municipal yard covered under Phase I of the Federal Storm Water Regulations, obtain separate~~

~~coverage under the State of California General Industrial Activities Storm Water Discharge Permit except that a municipality under 100,000 in population need not file the NOI until March 10, 2003.~~

Municipal yards are included under this comprehensive municipal NPDES Permit and therefore do not need separate coverage. Separate coverage would incur significant paperwork and expense and divert our efforts from other program elements.

5. Landscape and Recreational Facilities Management

Each Permittee shall continue to implement the following requirements with the following additions:

a) Each Permittee shall implement a standardized protocol for the routine and non-routine application of pesticides, herbicides (including preemergents), and fertilizers.

b) There shall be no application of pesticides or fertilizers immediately before, during, or immediately after a rain event that would result in measurable runoff or when water is flowing off the area to be applied.

New wording still ensures there will be no runoff of pollutants.

c) The Permittee shall ensure that staff applying pesticides are certified by the California Department of Food and Agriculture, or are under the direct supervision of a certified pesticide applicator.

d) Each Permittee shall implement procedures to encourage retention and planting of native vegetation where feasible and to reduce water, fertilizer, and pesticide needs to the maximum extent practicable;

Planting native vegetation may be encouraged but in many situations neither native nor non-native landscaping may be feasible due to water, fertilizer, and pesticide costs. Please note that native vs. non-native may be adopted as a voluntary policy but is an ecological not a water quality issue. The MEP standard is needed in the event that no reasonable reductions are possible following our existing efforts to reduce water, fertilizer and pesticide use

e) Each Permittee shall store fertilizers and pesticides indoors or under cover on paved surfaces or use secondary containment;

f) Each Permittee shall reduce the use, storage, and handling of hazardous materials to the maximum extent practicable; and

The MEP standard is needed in the event that no further opportunities for reduction are found as part of our ongoing effort.

g) Each Permittee shall regularly inspect storage areas.

6. Storm Drain Operation and Management

Each Permittee shall implement the following BMPs for storm drain inlet Maintenance (except that for any Permittee within an area subject to a trash TMDL, the Permittee may implement a program which maximizes trash removal by using an effective combination of street sweeping, catch basin clean outs, installation of treatment devices, and/or implementation of any other BMPs that achieve waste load allocations):

a) Inspect and clean catch basins between May 1 and September 30 of each year;

b) Clean priority catch basins when they become 40% full ~~Classify priority catch basins to be those that are 40 percent full~~;

Our listed priority CBs will be cleaned when they are found to be 40% full. The original wording would have given an uncertain definition to "priority CB" resulting in a constantly and unnecessarily changing list and inefficient inspection program.

c) Cleaning of priority catch basins, as necessary, between October 1 and April 30;

d) Keep record of catch basins cleaned;

e) Recording of the overall quantity of catch basin waste collected; and

f) Each Permittee shall submit a record (preferably as a GIS layer) of all Permittee owned catch basins ~~in a municipality~~ and identify which are ~~city-owned/ county-owned, and which~~ ~~are~~ priority for more frequent cleaning.

Permittee cities should only be responsible for identifying their own CBs. Likewise, the County can provide a list of its own CBs. County CBs are not identified by the city where they are located. To do this, we would have to spend a significant amount of time and resources without a clear benefit.

(GENERAL NOTE: A NEW NUMBER IS NEEDED BEFORE THE NEXT SERIES OF ITEMS AND LETTERING NEEDS TO BE READJUSTED)

Each Permittee shall implement BMPs for Storm Drain Maintenance that shall include but not be limited to:

a) A program to visually monitor open channel storm drains for debris and identify and prioritize problem areas of illicit discharge for regular inspection;

b) A review of current maintenance activities to assure that appropriate storm water BMPs are being utilized to improve water quality;

c) Removal of trash and debris from open channel storm drains shall occur a minimum of once per year before the storm season;

d) Minimize the discharge of contaminants during MS4 maintenance and clean outs;

e) Recording of the overall quantity of catch basin waste collected; and

f) Proper disposal of material removed.

7. Streets and Roads Maintenance

a) Each Permittee shall conduct street sweeping on curbed public streets in their permitted area according to the following schedule (except that for any Permittee within an area subject to a trash TMDL, the Permittee may implement a program which maximizes trash removal by using an effective combination of street sweeping, catch basin clean outs, installation of treatment devices, and/or implementation of any other BMPs that achieve waste load allocations):

(1) At a monthly average not less than 4 times per month in areas generating high volumes of trash;

(2) At a monthly average not less than 2 times per month in areas generating moderate volumes of trash on traffic collector streets and residential areas.

b) Permittee-owned parking lots shall be kept clear of debris and oil buildup and cleaned no less than 2 times per month and/or inspected no less than 2 times per month to determine if cleaning is necessary.

c) Each Permittee shall require that sawcutting wastes be recovered and disposed of properly and that in no case shall waste be allowed to enter the storm drain.

d) Concrete and other street and road maintenance materials and wastes shall be managed to prevent pollutant discharges; and

e) The washout of concrete trucks and chutes shall only occur in designated areas and never into storm drains, open ditches, streets, or catch basins leading to the storm drain system.

Each Permittee shall train their employees in targeted positions (whose interactions, jobs, and activities affect storm water quality) regarding the requirements of the storm water management program to:

a) Promote a clear understanding of the potential for maintenance activities to pollute storm water; and

b) Identify and select appropriate BMPs.

8. Emergency Procedures

Each Permittee shall continue to repair essential public services and infrastructure in a manner to minimize environmental damage in emergency situations such as: earthquakes; fires; floods; landslides; or windstorms. BMPs shall be implemented to the extent that measures do not compromise public health and safety. After initial emergency response or emergency repair activities have been completed, each Permittee shall implement BMPs as required under this Order.

F. Program to Eliminate Illicit Connections and Discharges

Permittees shall eliminate all illicit connections and illicit discharges to the storm drain system, and shall document and report all such cases. To accomplish this, the Permittees shall revise their Program for Elimination of Illicit Connection and Illicit Discharge (IC/ID Program) within 180 days of Permit adoption. This revision, which is subject to the approval of the Executive Officer, must specify a schedule for implementation by each Permittee, and must contain the following minimum elements, including performance measures and schedules.

1. General Elements

a) Implementation: Upon Executive Officer approval of the revised IC/ID Program, each Permittee must develop an Implementation Program which specifies how each Permittee is implementing the revised IC/ID Program from the SQMP. This Implementation Program must be documented, and available for review and approval by the Regional Board when requested.

b) Management and Tracking System: All Permittees shall make use of analytical tools, such as a Geographic Information System or a comparable tool suited to their storm drain system~~, that will enable the Lead Permittee~~ to manage and track all ~~suspected~~ illicit connections and illicit discharges into ~~the~~ their storm drain system. ~~Furthermore, within one year from Permit adoption, the Lead Permittee shall have the capability to locate all permitted discharges~~, Permittees shall use the selected tool ~~and~~ to track and evaluate patterns and trends of illicit connections and illicit discharges in ~~the~~ their entire storm drain system~~, including portions operated by other Permittees~~.

The County can implement the usage of GIS, to a certain extent, to track Illicit Connections and Illicit Discharges within County's jurisdiction. However, the County should not take the responsibility to track and manage Illicit Connections and Illegal Discharges for all Permittees.

To evaluate patterns and trends of Illicit Connections and Illicit Discharges, the County's data may suffice and at most, if the City of L.A. agrees, we can combine City of L.A. and County's data. Between these two agencies, enough data should be available to do cluster analysis. In addition, trying to standardize datasets and software between 83 Permittees is almost impossible especially since not all of them have GIS.

There is no need to use GIS to locate all permitted discharges. If the need for this dataset is of critical benefit, the Regional Board must provide the GIS file of all discharges permitted by the Board. Permittees do not issue discharge permits. The only permits some Permittees issue are construction connection permits and they wouldn't be of any benefit to this element of the program. Besides, trying to convert this data would almost be impossible since our database has over 100,000 records and we issue well over 1,000 permits per year and again the resources and time spent on this can not justify the benefit of this particular dataset. The main objective of this element in the Illicit Connections and Illicit Discharges program is to manage precisely that, Illicit Connections and Illicit Discharges.

c) Training: Complete, within ~~180~~ 365 days of Permit adoption, training for all targeted employees who are responsible for identification, investigation, termination, cleanup, and reporting of illicit connections and discharges. Furthermore, conduct refresher training on an annual basis thereafter.

Our Department has over 2000 employees requiring IC/ID training. We need time to develop training materials and then we'll need time to schedule training in a way that minimizes impact to Department operations

d) Documentation and Reporting: Document and report all illicit connections, illicit discharges, and hazardous substances that enter the storm drain, within times specified below.

2. Illicit Connection Elements

a) Baseline Screening: Permittees shall continue to screen the storm drain system for illicit connections during scheduled infrastructure maintenance. ~~On an annual basis,~~ Permittees shall report, to the Regional Board Executive Officer, as part of their Annual Storm Water Report, ~~to the Lead Permittee~~, ~~on~~ the location and length of open channels and/or closed storm drains that have been screened, and ~~on~~ the status of suspected, confirmed, and terminated illicit connections.

Permittees can incorporate these figures as part of their Annual Storm Water Report and Assessment.

b) Priority Screening: In addition to the baseline screening that will occur during regularly scheduled maintenance, Permittees shall design and implement a proactive storm drain screening of priority areas. Permittees shall consider, among others, one or more of the following factors when designating priority areas: an analysis past illicit connections; ~~and~~ a review of documentation for storm drain connections made in the six months following the 1994 Northridge Earthquake, ~~and~~ in the year following the 1992 civil unrest.

The County agrees with implementing a proactive priority screening in addition to the base line screening. Priority areas are determined based on past experience (which is the first of your proposed factors to consider); however records from the Northridge Earthquake or for the 1992 riots would not be of any benefit. Trying to go back almost 10 years to search for records that were kept manually does not justify the benefits, if any, gained by the results. We feel that for the most part, the riots involved people fighting with people, people setting fires, people looting stores and general vandalism but we don't believe people use those days as an opportunity to break ground to hook up undocumented storm drain connections.

c) Investigation: Upon discovery through either baseline or priority screening, or upon receiving a report of a suspected illicit connection, Permittees shall initiate an investigation within 21 days, to determine the source of the connection, the nature and volume of discharge through the connection, and the responsible party for the connection.

~~d)~~ Termination: Upon confirmation of the illicit nature of a storm drain connection, Permittees shall ensure termination of the illicit connection by the issuance of a connection permit or by removal of the connection within 180 days. ~~using enforcement authority as needed.~~ For those cases of illicit connections that require more than 180 days to eliminate due to lengthy court proceedings, ~~the~~ Permittees shall provide a written notification of the case to the Regional Board Executive Officer. ~~may grant time extensions on a case by case basis.~~

Just to clarify the two ways to deal with a connection (removal or permitting) and to not give the impression that removal is the only option

For cases that go to court, it would greatly simplify the process if we notify the Regional Board as these cases come up rather than to go through a whole process of time extensions requests. Additionally, the duration of these legal processes, which are outside of our control, is often uncertain.

3. Illicit Discharge Elements

a) Abatement and Cleanup: Respond, within 72 hours of discovery or a report of a suspected illicit discharge, with activities to abate, contain, and clean up all illicit discharges, including hazardous substances.

b) Investigation: As soon as practicable, during or immediately following containment and cleanup activities, take enforcement action as appropriate.

PART 5. DEFINITIONS

The following are definitions for terms applicable to this Order:

"Adverse Impact" means a detrimental effect upon water quality or beneficial uses caused by a discharge or loading of a pollutant or pollutants.

"Anti-degradation policies" refers to the *Statement of Policy with Respect to Maintaining High Quality Water in California* (State Board Resolution No. 68-16) which protects surface and ground waters from degradation. In particular, this policy protects waterbodies where existing quality is higher than that necessary for the protection of beneficial uses including the protection of fish and wildlife propagation and recreation on and in the water.

"Applicable Standards and Limitations" means all State, interstate, and federal standards and limitations to which a "discharge" or a related activity is subject under the CWA, including "effluent limitations, "water quality standards, standards of performance, toxic effluent standards or prohibitions, "best management practices," and pretreatment standards under sections 301, 302, 303, 304, 306, 307, 308, 403 and 404 of CWA.

"Authorized Discharge" means any discharge that is authorized pursuant to an NPDES permit or meets the conditions set forth in this Order.

"Automotive Repair Shop" means a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.

"BAT/BCT Criteria" means treatment-based standards for reducing the discharge of pollutants, as defined in 40 CFR subchapter N, for specific categories of industrial facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards. Effluent limitations have been defined in 40 CFR for the reduction of toxic pollutants using Best Available Technology Economically Achievable (BAT) and for the reduction of conventional pollutants using Best Conventional Pollutant Control Technology (BCT).

"Basin Plan" refers to the Water Quality Control Plan, Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, adopted by the Regional Board on June 13, 1994 and subsequent amendments.

"Beneficial Uses" means the existing or potential uses of receiving waters in the permit area as designated by the Regional Board in the Basin Plan.

"Best Management Practices (BMPs)" are methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint source discharges including storm water. BMPs include structural and nonstructural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

"Commercial Development" means any development on private land that is not heavy industrial or residential. The category includes, but is not limited to: hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, ~~multi-apartment buildings~~, car wash facilities, mini-malls and other business complexes, shopping malls, hotels, office buildings, public warehouses and other light industrial complexes.

Please clarify or remove multi-apartment buildings.

"Construction" means constructing, clearing, grading, or excavation that results in soil disturbance. Construction includes structure teardown. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety.

"Control" means to minimize, reduce, eliminate, or prohibit by technological, legal, contractual or other means, the discharge of pollutants from an activity or activities.

"Dechlorinated Swimming Pool Discharge" shall mean swimming pool discharges which have no measurable chlorine and do not contain any detergents, wastes, or additional chemicals not typically found in swimming pool water. The term does not include swimming pool filter backwash.

"Development" shall mean any construction, rehabilitation, redevelopment or reconstruction of any public or private residential project (whether single-family, multi-unit or planned unit development); industrial, commercial, retail and other non-residential projects, including public agency projects; or mass grading for future construction.

"Directly Adjacent" means situated within 200 feet of the contiguous zone required for the continued maintenance, function, and structural stability of the environmentally sensitive area.

"Director" shall mean the Director of Public Works of the County and Person(s) designated by and under the Director's instruction and supervision.

"Directly Discharging" means outflow from a drainage conveyance system that is composed entirely or predominantly of flows from the subject, property, development, subdivision, or industrial facility, and not commingled with the flows from adjacent lands.

"Discharge" when used without qualification means the "discharge of a pollutant."

"Discharge of a Pollutant" means: Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source" or, Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. The term discharge includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect Discharger."

"Disturbed Area" means an area that is altered as a result of clearing, grading, and/or excavation.

"Effluent limitation" means any restriction imposed by the Regional Board on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean.

"Environmentally Sensitive Areas" means an area "in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which would be easily disturbed or degraded by human activities and developments" (California Public Resources Code § 30107.5). Areas subject to storm water mitigation requirements are: ~~areas designated as an Area of Special Biological Significance (ASBS) by the State Water Resources Control Board; an area designated as a Significant Natural Area by the California Department of Fish and Game; an area listed in the Regional Board Basin Plan as supporting the "Rare, Threatened, or Endangered Species (RARE)" beneficial use; or an area identified by the Permittees as environmentally sensitive for water quality purposes, based on the Regional Board Basin Plan and Clean Water Act Section 303(d) Impaired Water bodies List for Los Angeles County. Refer to Attachment XXX for a map of Significant Natural Areas~~
The Permittees have very difficult time to identify the ESA locations on maps of ASBS, Significant Natural Area, and RARE because these maps are not clear. It is recommended that the Regional Board works with the Permitttees to come up with a better solution for the ESAs.

"Executive Advisory Committee" refers to the committee composed of representatives of the Los Angeles County Flood Control District, the City of Los Angeles, and the five Watershed Management Areas.

"General Construction Activities Storm Water Permit (GCASP)" is the general NPDES permit adopted by the State Water Resources Control Board which authorizes the discharge of storm water from construction activities under certain conditions.

"General Industrial Activities Storm Water Permit (GIASP)" is the general NPDES permit adopted by the State Water Resources Control Board which authorizes the discharge of storm water from certain industrial activities under certain conditions.

"Hillside" means property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is 25% or greater and where grading contemplates cut or fill slopes.

"Illicit Connection" shall mean any man-made conveyance that is connected to the storm drain system without a permit, excluding roof drains and other similar type connections. Examples include channels, pipelines, conduits, inlets, or outlets that are connected directly to the storm drain system.

"Illicit Discharge" means any discharge to the storm drain system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term illicit discharge includes all non storm-water discharges except discharges pursuant to an NPDES permit, discharges that are identified in Part 1 of this order, and discharges authorized by the Regional Board Executive Officer.

"Illicit Disposal" means any disposal, either intentionally or unintentionally, of material(s) or waste(s) that can pollute storm water.

"Industrial/Commercial Facility" means any facility involved and/or used in either the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services. This category of facilities includes, but is not limited to, any facility defined by the Standard Industrial Classifications (SIC). Facility ownership (federal, state, municipal, private) and profit motive of the facility are not factors in this definition.

"Infiltration" means the downward entry of water into the surface of the soil.

"Local SWPPP" refers to the Storm Water Pollution Prevention Plan required by the local agency if the project is not subject to the Statewide Construction Activities General Permit.

"Maximum Extent Practicable (MEP)" refers to the standard for implementation of storm water management programs to reduce pollutants in storm water. It is the maximum extent possible taking into account equitable consideration and competing facts, including, but not limited to: the gravity of the problem, public health risk, societal concern, environmental benefits, pollutant removal effectiveness, regulatory compliance, public acceptance, implementability, cost and technical feasibility. Section 402(p)(3)(B)(iii) of the CWA requires that municipal permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

"Method Detection Limit (MDL)" is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR 136, Appendix B.

"Minimum Level (ML)" is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific

analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

"Municipal Separate Storm Sewer System (MS4)" means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) owned by a State, city, county, town or other public body, that is designed or used for collecting or conveying storm water, which is not a combined sewer, and which is not part of a publicly owned treatment works.

"National Pollutant Discharge Elimination System (NPDES)" means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA. The term includes an "approved program."

"New Development" means land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision.

"Non-Storm Water Discharge" means any discharge to a storm drain that is not composed entirely of storm water.

"Nuisance" means anything that meets all of the following requirements: (1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; (2) affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; (3) occurs during, or as a result of, the treatment or disposal of wastes.

"Parking Lot" means land area or facility for the temporary parking or storage of motor vehicles used personally, for businesses or for commerce with a lot size of 5,000 square feet or more, or with 25 or more parking spaces.

"Permit" means an authorization, license, or equivalent control document issued by EPA or an "approve State" to implement the requirements of 40 CFR Parts 122, 123, and 124. "Permit" includes an NPDES "general permit" (§ 122.28). Permit does not include any permit which has not yet been the subject of final agency action, such as a "draft permit" or a "proposed permit."

"Permittee(s)" means Co-Permittees and refers to any agency named in this Order as being responsible for permit conditions within its jurisdiction. Permittees to this Order include the Los Angeles County Flood Control District, Los Angeles County, and the cities of Agoura Hills, Alhambra, Arcadia, Artesia, Azusa, Baldwin Park, Bellflower, Bell Gardens, Beverly Hills, Bradbury, Burbank, Calabasas, Carson, Cerritos, Claremont, Commerce, Compton, Covina, Cudahy, Culver City, Diamond Bar, Downey, Duarte, El Monte, El Segundo, Gardena, Glendale, Glendora, Hawaiian Gardens, Hawthorne, Hermosa Beach, Hidden Hills, Huntington Park, Industry, Inglewood, Irwindale, La Canada Flintridge, La Habra Heights, Lakewood, La Mirada, La Puente, La Verne, Lawndale, Lomita, Los Angeles, Lynwood, Malibu, Manhattan Beach, Maywood, Monrovia, Montebello, Monterey Park, Norwalk, Palos Verdes Estates, Paramount, Pasadena, Pico Rivera, Pomona, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling

Hills Estates, Rosemead, San Dimas, San Fernando, San Gabriel, San Marino, Santa Fe Springs, Santa Monica, Sierra Madre, Signal Hill, South El Monte, South Gate, South Pasadena, Temple City, Torrance, Vernon, Walnut, West Covina, West Hollywood, Westlake Village, and Whittier.

"Phase I Facilities" are the categories of facilities which are required to obtain an NPDES permit for storm water discharges associated with "industrial activity" as required by 40 CFR 122.26(c).

"Pollutants" means those "pollutants" defined in Section 502(6) of the federal Clean Water Act (33.U.S.C.§1362(6)), or incorporated into California Water Code §13373. Examples of pollutants include, but are not limited to the following:

- Commercial and industrial waste (such as fuels, solvents, detergents, plastic pellets, hazardous substances, fertilizers, pesticides, slag, ash, and sludge);
- Metals such as cadmium, lead, zinc, copper, silver, nickel, chromium, and non-metals such as phosphorus and arsenic;
- Petroleum hydrocarbons (such as fuels, lubricants, surfactants, waste oils, solvents, coolants, and grease)
- Excessive eroded soils, sediment, and particulate materials in amounts which may adversely affect the beneficial use of the receiving waters, flora or fauna of the State;
- Animal wastes (such as discharge from confinement facilities, kennels, pens, recreational facilities, stables, and show facilities);
- Substances having characteristics such as pH less than 6 or greater than 9, or unusual coloration or turbidity, or excessive levels of fecal coliform, or fecal streptococcus, or enterococcus;

The term "pollutant" shall not include uncontaminated storm water, potable water or reclaimed water generated by a lawfully permitted water treatment facility.

The term "pollutant" also shall not include any substance identified in this definition, if through compliance with the best management practices available, the discharge of such substance has been eliminated to the maximum extent practicable. ~~In an enforcement action, the burden shall be on the person who is the subject of such action to establish the elimination of the discharge to the maximum extent practicable through compliance with the best management practices available.~~

Reverses the burden of proof and violates the basic premise of our legal system.

"Potable Water Distribution Systems" means sources of flows from drinking water storage, supply and distribution systems including flows from system failures, pressure releases, system maintenance, well development, pump testing fire hydrant flow testing; and flushing and dewatering of pipes, reservoirs, vaults, and wells.

"Priority Pollutants" are those constituents referred to in 40 CFR 401.15 and listed in the EPA NPDES Application Form 2C, pp. V-3 through V-9.

"Project" means all development and land disturbing activities. The term is not limited to "Project" as defined under California Environmental Quality Act (Pub Resources Code Section 21065).

"Rain Event" means any rain event greater than 0.1 inch in 24 hours.

"Receiving Waters" means all surface water bodies within the permit area that are identified in the Basin Plan.

"Redevelopment" means, but is not limited to, the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; land disturbing activities related with structural or impervious surfaces. Redevelopment that results in the creation or addition of 5,000 square feet or more of impervious surfaces is subject to the requirements for storm water mitigation. If the creation or addition of impervious surfaces is fifty percent or more of the existing impervious surface area, then storm water runoff from the entire area (existing and additions) must be considered for purposes of storm water mitigation. If the creation or additions is less than fifty percent of the existing impervious area, then storm water runoff from only the addition area needs mitigation.

"Regional Administrator" means the Regional Administrator of the Regional Office of the Environmental Protection Agency or the authorized representative of the Regional Administrator.

"Restaurant" means a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC Code 5812).

"Runoff" means any runoff including storm water and dry weather flows from a drainage area that reaches a receiving water body or subsurface. During dry weather it is typically comprised of many base flow components either contaminated with pollutants or uncontaminated.

"Side Walk Rinsing" means pressure washing of paved pedestrian walkways with average water usage of 0.006 gallons per square foot, with no cleaning agents, and properly disposing of all debris collected, as authorized under Regional Board Resolution No. 98-08.

"Site" means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

"Source Control BMP" means any schedules of activities, prohibitions of practices, maintenance procedures, managerial practices or operational practices that aim to prevent storm water pollution by reducing the potential for contamination at the source of pollution.

"SQMP" shall mean the Los Angeles Countywide Stormwater Quality Management Plan.

"Storm Water Pollution Prevention Plan (SWPPP)" shall mean a plan, as required by a State General Permit, identifying potential pollutant sources and describing the design, placement and implementation of BMPs, to effectively prevent non-stormwater Discharges and reduce Pollutants in Stormwater Discharges during activities covered by the General Permit.

"Storm Water" shall mean any surface flow, runoff, and/or drainage associated with rainstorm events and/or snowmelt.

"Stormwater Quality Management Plan" shall mean the Los Angeles Countywide Stormwater Quality Management Plan, which includes descriptions of programs, collectively developed by the Permittees in accordance with provisions of the NPDES Permit, to comply with applicable federal and state law, as the same is amended from time to time.

"Structural BMP" means any structural facility designed and constructed to mitigate the adverse impacts of storm water and urban runoff pollution (e.g. canopy, structural enclosure). The category may include both treatment control BMPs and source control BMPs.

"SUSMP" means the Los Angeles Countywide Standard Urban Stormwater Mitigation Plan. The SUSMP shall address conditions and requirements of ~~new~~ planning priority development and redevelopment projects.

"Total Maximum Daily Load (TMDL)" means the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background.

"Toxicity Identification Evaluation" refers to a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.

"Toxicity Reduction Evaluation" is a study conducted in a step-wise process to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity.

"Treatment" means the application of engineered systems that use physical, chemical, or biological processes to remove pollutants. Such processes include, but are not limited to, filtration, gravity settling, media absorption, biodegradation, biological uptake, chemical oxidation and UV radiation.

"Treatment Control BMP" means any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media absorption or any other physical, biological, or chemical process.

"Water Column Toxicity" means a 70 percent survival rate for a single test or an average of 90 percent survival for three consecutive tests.

"Water Quality Standards and Water Quality Objectives" applicable to the Permittee include those contained in the Los Angeles Regional Water Quality Control Plan (Basin Plan), the California Ocean Plan, the National Toxics Rule, the California Toxics Rule, and other state or federally approved surface water quality plans. Such plans are used by the Regional Board to regulate all discharges, including storm water discharges.

"Waters of the State" means any surface water or groundwater, including saline waters, within boundaries of the state.

"Waters of the United States" or "Waters of the U.S." means:

a. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
b. All interstate waters, including interstate "wetlands";
c. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
    1. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
    2. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    3. Which are used or could be used for industrial purposes by industries in interstate commerce;
d. All impoundments of waters otherwise defined as waters of the United States under this definition;
e. Tributaries of waters identified in paragraphs (a) through (d) of this definition;
f. The territorial sea; and
g. "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraph (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.22(m), which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to man-made bodies of water, which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with US EPA.

"Wet Season" means the calendar period beginning October ~~1~~ 15 through April 15.

"Whole Effluent Toxicity" means the aggregate toxic effect of an effluent measured directly by a toxicity test.

PART 6. STANDARD PROVISIONS

A. Standard Requirements

1. ~~The~~ Each Permittees shall comply with all provisions and requirements of this permit applicable to it.

2. Should ~~the~~ a Permittees discover a failure to submit any relevant facts or that it submitted incorrect information in a report, it shall promptly submit the missing or correct information.

3. ~~The~~ Each Permittees shall report all instances of non-compliance not otherwise reported at the time monitoring reports are submitted.

4. This Order includes the attached Monitoring and Reporting Program, and Standard Urban Storm Water Mitigation Plan, which are a part of the permit and must be complied with in the same manner as with the rest of the requirements in the permit.

   Changes suggested to clarify that violation is on a Permitte-by-Permittee basis

B. Public Review

1. All documents submitted to the Regional Board in compliance with the terms and conditions of this Permit shall be made available to members of the public pursuant to the Freedom of Information Act (5 U.S.C. Section 552 (as amended) and the Public Records Act (California Government Code Section 6250 *et seq.*).

2. All documents submitted to the Executive Officer for approval shall be made available to the public for a 30-day period to allow for public comment.

C. Duty to Comply [40 CFR 122.41(a)]

1. ~~The Principal~~ Each Permittee must comply with all of the terms, requirements, and conditions of this Order applicable to it. Any violation of this order constitutes a violation of the Clean Water Act, its regulations and the California Water Code, and is grounds for enforcement action, Order termination, Order revocation and reissuance or modification, denial of an application for reissuance; or a combination thereof.

2. A copy of these waste discharge specifications shall be maintained by each Permittee so as to be available during normal business hours to Permittee employees and members of the public.

3. Any discharge of wastes by any Permittee at any point(s) other than specifically described in this Order is prohibited, and constitutes a violation of the Order.

Changes suggested to clarify that violation is on a Permitte-by-Permittee basis and also to conform wording to U.S. EPA Regulations.

D. Duty to Mitigate [40 CFR 122.41 (d)]

~~The~~ Each Permittees shall take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.

Change suggested to clarify that violation is on a Permitte-by-Permittee basis.

E. Inspection and Entry [40 CFR 122.41(i)]

The Regional Board, USEPA, and other authorized representatives shall be allowed:

1. Entry upon premises where a regulated facility is located or conducted, or where records are kept under conditions of this Order;

2. Access to copy any records that are kept under the conditions of this Order;

3. To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and,

4. To photograph, sample, and monitor for the purpose of assuring compliance with this Order, or as otherwise authorized by the Clean Water Act and the California Water Code.

F. Proper Operation and Maintenance [40 CFR 122.41 (e)]

The Permittees shall at all times properly operate and maintain all facilities and systems of treatment and (and related appurtenances) that are installed or used by the Permittees to achieve compliance with this Order. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar system that are installed by a Permittee only when necessary to achieve compliance with the conditions of this Order.

G. Signatory Requirements [40 CFR 122.41(k)]

Except as otherwise provided in this Order, all applications, reports, or information submitted to the Regional Board shall be signed by the Director of Public Works, City Engineer, or authorized designee ~~under penalty of perjury~~ and certified as set forth in 40 CFR 122.22.

H. Reopener and Modification [40 CFR 122.41(f)]

1. This Order may only be modified, revoked, or reissued, prior to the expiration date, by the Regional Board, in accordance with the procedural requirements of the Water Code and Title 23 of the California Code of Regulations for the issuance of waste discharge requirements, and upon prior notice and hearing for any of the reasons set forth in 40 CFR 122.62 or, to:

   a) ~~Address changed conditions identified in the required reports or other sources deemed significant by the Regional Board~~;

   b) Incorporate applicable requirements or statewide water quality control plans adopted by the State Board or amendments to the Basin Plan;

~~c) Comply with any applicable requirements, guidelines, and/or regulations issued or approved pursuant to CWA Section 402(p); and/or,~~

~~d) Consider any other federal, or state laws or regulations that became effective after adoption of this Order.~~

The U.S. EPA Regulations provide detailed criteria for the amendment of a permit, which are not reflected in current language.

2. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

   a) Violation of any term or condition contained in this Order;

   b) Obtaining this Order by misrepresentation, or failure to disclose all relevant facts; or,

   c) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

~~3. This Order may be modified, revoked and reissued, or terminated for cause.~~

This provision is superfluous.

4. The filing of a request by the Principal Permittee for a modification, revocation and re-issuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

5. This Order may be modified to make corrections or allowances for changes in the permitted activity listed in this section, following the procedures at 40 CFR Part 122.63, if processed as a minor modification. Minor modifications may only:

   a) Correct typographical errors, or

   b) Require more frequent monitoring or reporting by the Permittee.

I. Severability

The provisions of this permit are severable; and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected.

J. Duty to Provide Information [40 CFR 122.41(h)]

The Permittees shall furnish, within a reasonable time, any information the Regional Board or USEPA may request to determine whether cause exists for

modifying, revoking and reissuing, or terminating this Order. The Permittees shall also furnish to the Regional Board, upon request, copies of records required to be kept by this Order.

K. Twenty-four Hour Reporting[1]

1. The Permittees shall report ~~any noncompliance~~ the exceedance of any narrative effluent limitations that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time any Permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

   As noted above, footnote moved into the text, and assumption made that violation effluent limit is the only circumstance requiring reporting under this provision

2. The Regional Board may waive the required written report on a case-by-case basis.

L. Bypass [40 CFR 122.41(m)][2]

Bypass (the intentional diversion of waste streams from any portion of a treatment facility) of any storm water control or BMP as provided in this Order or in the SQMP and installed by a Permittee is prohibited. The Regional Board may take enforcement action against Permittees for bypass unless:

Footnote moved in the text for clarity.

---

[1] ~~This provision applies to incidents where effluent limitations (numerical or narrative) as provided in this Order or in the Los Angeles County SQMP are exceeded, and which endanger public health or the environment.~~

[2] ~~This provision applies to the operation and maintenance of storm water controls and BMPs as provided in this Order or in the Los Angeles County SQMP.~~

1. Bypass was unavoidable to prevent loss of life, personal injury or severe property damage. (Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.);

2. There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated waste, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that could occur during normal periods of equipment downtime or preventive maintenance;

3. The Permittee submitted a notice at least ten days in advance of the need for a bypass to the Regional Board; or,

4. Permittees may allow a bypass to occur that does not cause effluent limitations to be exceeded, but only if it is for essential maintenance to assure efficient operation. In such a case, the above bypass conditions are not applicable. The Permittee shall submit notice of an unanticipated bypass as required.

M. Upset [40 CFR 122.41(n)][3]

1. A Permittee that wishes to establish the affirmative defense of an "upset" (as defined in 40 CFR 122.41(n)) in an action brought for non compliance shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   Suggest deleting the footnote and adding reference to the definition of "upset"

[3] ~~*Supra*. See footnote number 2.~~

a) An upset occurred and that the Permittee can identify the cause(s) of the upset;

b) The permitted facility was being properly operated by the time of the upset;

c) The Permittee submitted notice of the upset as required; and,

d) The Permittee complied with any remedial measures required.

2. No determination made before an action for noncompliance, such as during administrative review of claims that non-compliance was caused by an upset, is final administrative action subject to judicial review.

3. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

N. Property Rights [40 CFR 122.4(g)]

This Order does not convey any property rights of any sort, or any exclusive privilege.

O. Enforcement

1. Violation of any of the provisions of the NPDES permit or any of the provisions of this Order may subject the violator to any of the penalties described herein, or any combination thereof, at the discretion of the prosecuting authority; except that only one kind of penalties may be applied for each kind of violation. The Clean Water Act provides the following:

a) Criminal Penalties for:

(1) Negligent Violations:

The CWA provides that any person who negligently violates permit conditions implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both.

(2) Knowing Violations:

The CWA provides that any person who knowingly violates permit conditions implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

(3) Knowing Endangerment:

The CWA provides that any person who knowingly violates permit conditions implementing sections 301, 302, 307, 308,

318, or 405 of the Act and who knows at that time that he is placing another person in imminent danger of death or serious bodily injury is subject to a fine of not more than $250,000, or by imprisonment for not more than 15 years, or both.

(4) False Statement:

The CWA provides that any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed of required to be maintained under the Act or who knowingly falsifies, tampers with, or renders inaccurate, any monitoring device or method required to be maintained under the Act, shall upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years, or by both. If a conviction is for a violation committed after a first conviction of such person under this paragraph, punishment shall be by a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or by both. (See section 309(c)(4) of the Clean Water Act.)

b) Civil Penalties

The CWA provides that any person who violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed $27,500 per day for each violation.

2. The California Water Code provides that any person who violates a waste discharge requirement provision of the California Water Code is subject to civil penalties of up to $5,000 per day, $10,000 per day, or $25,000 per day of violation; or when the violation involves the discharge of pollutants, is subject to civil penalties of up to $10 per gallon per day or $25 per gallon per day of violation; or some combination thereof, depending on the violation or combination violations.

P. Need to Halt or Reduce Activity not a Defense [40 CFR 122.41(c)]

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order.

~~Q. Modifications to this Order~~

~~This Order may be modified, revoked, or reissued, prior to the expiration date as follows:~~

~~1. To address changed conditions identified in the required technical reports or other sources deemed significant by the Regional Board;~~

~~2. To incorporate applicable requirements or statewide water quality control plans adopted by the State Board, or amendments to the Basin Plan;~~

~~3. To comply with any applicable requirements, guidelines, or regulations issued or approved under Section 402(p) of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order. The Order as modified or reissued under this paragraph shall also contain any other requirements of the CWA then applicable; or,~~

~~4. Any amendments under the Clean Water Act.~~

Provision is superfluous; already covered above.

R. Regional Board Order No. 96-054 is hereby rescinded.

S. This Order expires on July 26, 2006]. The Principal Permittee must submit a Storm Water Quality Management Plan in accordance with Title 23, California Code of Regulation, not later than 180 days in advance of such date as application for reissuance of waste discharge requirements.

I, Dennis A. Dickerson, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on July 26, 2001.

_____

Dennis A. Dickerson
Executive Officer

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM

FOR

STORM WATER MANAGEMENT/URBAN RUNOFF DISCHARGES
FOR
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT,
DEPARTMENT OF PUBLIC WORKS, AND THE CITIES OF LOS ANGELES COUNTY

NPDES PERMIT NO. CAS614001 (CI 6948)

I. Program Reporting Requirements

A. Program Management

Permittees shall submit, by October 15, 2001, the Annual Storm Water Report and Assessment for the period July 1, 2000, through July 26, 2001 documenting the status of the general program up to permit reissuance and the results of analyses from the monitoring and reporting program.

The ~~Principal~~ Permittees shall submit, by October 15 of each year beginning the year 2002, an Annual Storm Water Report and Assessment documenting the status of the general program and individual tasks contained in the SQMP~~., and an integrated summary of the results of analyses from the monitoring program described under II. Monitoring Requirements.~~

The responsibility of annual reporting should not be solely that of the Principal Permittee, but that of all Permittees. The Permittees should evaluate results and analyses of programs with the guidance of the Regional Board.

The Annual Storm Water Report and Assessment shall include any proposed changes to the SQMP as approved by the Executive Advisory Committee. The Annual Storm Water Report and Assessment Report shall cover each fiscal year from July 1 through June 30. At a minimum, the annual report will include the following:

1. A comparison of program implementation results to performance standards established in this Order and in the SQMP;

2. Status of compliance with permit requirements including implementation dates for all time-specific deadlines. If permit deadlines are not met, Permittees shall report the reasons why the requirement was not met, how the requirements will be met in the future, including projected implementation date;

3. An assessment of the effectiveness of SQMP requirements to reduce storm water pollution. This assessment will be based upon the specific record-keeping information requirement in each major section of the permit, monitoring data, and any other information related to program effectiveness. Beginning in the Year 2002, to the extent that data collected in monitoring requirements included herein and existing monitoring data allows, the Principal Permittee shall include an analysis of trends, land use contributions, pollutant source identifications, BMP effectiveness, and impacts on beneficial uses;

4. An analysis of the data to identify areas of the Program coverage which cause or contribute to exceedances of water quality standards or objectives, predominate land uses in these areas, and potential sources of pollutants in those areas;

5. Discussion of the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with the waste discharge requirements.

B. Public Information and Participation Program

Programs for Residents

1. Number of storm drain inlets and designated public access points to creeks, channels, and other relevant water bodies in each Permittees' systems that are marked or posted with a no dumping message. If the requirement that 100 percent of storm drains inlets are marked/signed is not met, each Permittee shall report the reasons why, and how the requirement will be met in the future, including the implementation date.

2. Description of activities on distributing brochures, community outreach efforts, public communication efforts and educational programs in schools including an estimate of the number of impressions per year made on the general public about storm water quality via print, local TV access, local radio presentations, meetings or other appropriate media;

3. Description of the quarterly Public Outreach Strategy meetings, including percentage of Permittee attendance, effectiveness at coordinating Permittee education programs, and overall effectiveness based on Permittee evaluations. Also, a description of each Permittee's

participation in and contribution to the Public Education and Participation Program.

4. Description of activities for the Pollutant-Specific Outreach programs, including creating and distributing outreach materials to the general public and target audiences, such as schools, community groups, contractors and developers, and at appropriate counters and events.

Programs for Businesses

1. Description of the Corporate Outreach program, including the number of consultations with corporate heads of gas stations and restaurant chains and the percentage of the total.

2. Description of the Business Assistance Program, including the number of businesses that requested assistance and the number that were assisted through site visits, telephone consultations, presentations, or material distribution.

C. Programs for Industrial / Commercial Inspections

1. An annual update of the watershed-based inventory of all Industrial/Commercial sites identified as a threat to water quality. This includes all Phase I industrial facilities, motor vehicle repair shops, motor vehicle body shops, motor vehicle parts and accessories facilities, restaurants, and other facilities that contribute or have the potential to contribute to impairments of receiving waters. The inventory shall include at a minimum: facility name, site address, SIC code and narrative description of activities performed at each facility.

2. Number of restaurants, automotive businesses, industrial facilities, and other commercial facilities targeted under the program. During the past year, the number of industrial and commercial inspections conducted, the number of non-compliant sites, and the number of industrial facilities the Permittees have identified that have failed to file an NOI.

3. The percentage of targeted staff trained annually.

D. Programs for Planning and Land Development

1. Total number and percent of all development projects reviewed and conditioned to meet SUSMP requirements by category such as residential, commercial, and industrial.

~~2. Total square feet of impervious area conditioned for mitigation by development and redevelopment category.~~

The County has thousands of planning projects submitting for approval each year. It is difficult for the County to keep track of total square feet of impervious area for every single project that required for mitigation.

3. Significant date rewrite completed of General Plan with storm water considerations.

4. Percent and total number of targeted staff trained annually [100 percent].

5. Date CEQA guidelines revision completed to include storm water mitigation conditions.

6. Date BMP design and sizing technical manual completed and made available electronically.

E. Programs for Construction Sites

1. Number of construction projects requiring local SWPPPs in the past year and the percentage of projects in categories requiring submittal of a local SWPPP for which local SWPPPs were completed.

2. Number and type of enforcement actions, applicable to storm water enforcement, taken at construction sites during the past year.

3. Description of the outreach program to the construction community and assessment of its effectiveness; This assessment should include a discussion of the number of inspections, ~~site visits~~, or other meetings conducted.

   The Development Construction Program does not have a site visits requirement.

4. The percentage of targeted staff trained annually.

F. Programs for ~~Illicit Discharge and Illegal~~ Illicit Connection and Illicit Discharges Control

Throughout the permit this is referred to Illicit Connections and Illicit Discharge program. Replace Illegal Discharge with Illicit Discharge and reorder the elements to IC/ID (instead of ID/IC).

1. Annual update of the analytical tool used to manage and track illicit connections and discharges, including an evaluation of patterns and trends of illicit connections and illicit discharges in the entire storm drain system.

2. Location and length of open channels and closed storm drains that were screened by all Permittees, and the status of all suspected, confirmed, and terminated illicit connections.

3. Number of reports of illicit discharges that Permittees responded to, percentage that were identified as actual illicit discharges, and percentage of the actual illicit discharges where the incident was either cleaned up, referred to another responsible agency and/or follow up/education with the discharger was conducted.

4. Percentage of cleanup and abatement activities that occurred within 72 hours of discovery or report of a suspected illicit discharge and justification for response activities that exceeded 72 hours.

5. For groups of identified illicit discharge types where the probable causes for the discharge can be identified, report probable causes and the actions taken to prevent similar discharges from occurring;

6. Number of confirmed illicit connections identified in the past year;
   For clarification purposes only. We will report on confirmed illicit connections as opposed to suspected illicit connections.

7. Percentage of investigations that were initiated within 21 days of identification or a report of an illicit connection and justification for those that exceeded 21 days.

8. Number of illicit connections eliminated in the past year;

9. Percentage of illicit connections terminated within 180 days of identification and justification for terminations that exceeded 180 days.

10. Number and type of enforcement actions for storm water illicit discharges and/or illicit connections taken in the past year;

~~11.~~ A summary from records on illicit discharges ~~and connections~~ which includes ~~type~~ description of discharge ~~material~~, ~~type of~~ source, and ~~date of initial inspection,~~ enforcement action taken, ~~date of follow-up inspection, date of conclusion/clean up/removal/ follow up/education;~~
   Unclear of the purpose of this summary. For summaries, we should separate Illicit Connections from Illicit Discharges. Therefore I am proposing a new item 12;
   Also, a summary can not contain dates. Each incident will have its own initial date of inspection, follow up, etc. If we are to include these dates, you will end up not with a summary but with the entire database itself. Dates are already addressed in items 4, 7, and 9.

Summaries could be say from 800 incidents 400 involved oil spills 200 involved paint, etc

12. A summary from records on illicit connections which includes the number of illicit connections terminated by the issuance of a connection permit and those terminated by removal of the connection. This summary may also include a breakdown of identified illicit connections by land use.

This summary needs different comparison items than the Illicit Discharges summary. Maybe we can identify, out of so many illicit connections, how many were found in residential land use, commercial, industrial, etc. We can also summarize how the illicit connections were resolved (permitted vs physical removal)

13. The percentage of targeted employees trained annually. The percentage of targeted employees trained annually.

G. Programs for Facilities Maintenance

1. A summary which at a minimum includes the quantity, predominant types and likely sources of trash removed from catch basin inlets;

2. A summary of the total curb miles of streets swept annually and the percentage of total curb miles swept annually as a function of total curb miles;

3. The percentage of targeted staff trained annually; and,

H. Pollutants of Concern

1. A progress report on sources of pollutants of Concern, BMPs for their control, and implemented BMP effectiveness.

I. Monitoring Program Management

1. The Principal Permittee shall submit a Storm Water Monitoring Report on August 15, 2002, and annually on August 15, thereafter. The report shall include:

a) status of implementation of the monitoring program;

b) results of the monitoring program;

c) a general interpretation of the results;

d) both tabular and graphical summaries of the monitoring data obtained during the previous year;

e) an analysis of trends, land use contributions, pollutant source identifications, BMP effectiveness, and impacts on beneficial uses; and

f) suggestions for improvements to the SQMP based on the analysis.

2. The Principal Permittee shall submit, by October 15, 2001, the results of analyses from the monitoring and reporting program for the period July 1, 2000 through July 26, 2001 together with the Annual Report for the same period.

All applications, reports, or information submitted to the Regional Board shall be signed and certified pursuant to EPA regulations 40 CFR 122.41 (k). Each report shall contain the following completed declaration:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility, of a fine and imprisonment for knowing violations.

Executed on the ___ day of _____ , 20_,

at _____.

(Signature)_____(Title)_____";

Permittee submittals to the Principal Permittee shall also be signed and certified pursuant to EPA regulations 40 CFR 122.41 (k).

The Principal Permittee shall mail the original of each annual report to:

INFORMATION TECHNOLOGY
CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD - LOS ANGELES REGION
320 W. 4TH STREET, SUITE 200
LOS ANGELES, CA 90013

A copy of the annual report shall also be mailed to:

REGIONAL ADMINISTRATOR
ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco, CA 94105

II. Monitoring Requirements

The Principal Permittee shall implement the Countywide Storm Water Monitoring Program as follows.

A. Mass Emissions

1. The Principal Permittee shall monitor mass emissions from the following six mass emission stations: Ballona Creek, Malibu Creek, Los Angeles

River, San Gabriel River, Coyote Creek, and Dominguez Channel. The Principal Permittee shall monitor the first storm event and a minimum of 3 additional storm events of each season. One dry weather event per year at each mass emission station shall also be monitored.

2. Samples for mass emission station monitoring shall be taken with the same type of automatic sampler used under Order 96-054, as well as through grab sampling. The samplers shall be set to monitor storms totaling 0.25 inches or greater of rainfall. Samples taken at mass emission stations during the first storm event should be analyzed for all constituents listed in Attachment 1. The Principal Permittee may elect not to sample Volatile Organic Compounds from the list of constituents for mass emission stations.

3. ~~All samples shall be analyzed for Suspended-Sediment Concentration (SCC) and Total Suspended Solids (TSS). Particle size distribution shall also be determined, depending on the development of appropriate sample handling and analytical methods.~~

The Suspended-Sediment Concentration (SSC) and particle size distribution requirements will not be required. Total Suspended Solids (TSS) will be tested using current testing method.

4. Method detection limits for priority pollutants shall be modified, pursuant to ~~the California Toxics Rule~~ the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California. The modified method detection limits are listed in Attachment 1. If a constituent has been detected in 100 percent of samples during the last 2 years of monitoring, the Principal Permittee may continue to use the existing method detection limit until the constituent is not detected, afterwhich, the method detection limits shall be lowered to those in Attachment 1.

The reference of method detection limits will be changed from the California Toxics Rule (CTR) to the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP).

We tentatively agree to analyze water quality samples collected during the first storm of each season using SIP detection limits. Results of analyses of these samples would be used for identifying the 303(d) list pollutants of concern. The RWQCB's staff indicated that there may be a need to analyze water quality samples of more than one storm using SIP to increase the certainty of using the detected levels for establishing the 303(d) list. There is still a need to further discuss this requirement.

5. If a constituent is not detected at the method detection limit for its respective test method listed in Attachment 1 in more than 25 percent of the first ten sampling events or on a rolling basis using ten consecutive sampling events, it need not be further analyzed, with the exception of the

first storm of each season, unless the observed occurrences show high concentrations and are cause for concern.

B. Toxicity Monitoring

1. Water Column Toxicity Monitoring

The Principal Permittee shall analyze two wet weather samples and two dry weather samples from each mass emission station for toxicity per year. A minimum of one freshwater and one marine species shall be used for toxicity testing. Specifically, Ceriodaphnia dubia and sea urchin fertilization shall be used. If toxicity is not detected in either of the dry weather samples for any given mass emission station, the Principal Permittee may reduce dry weather toxicity testing to one sample per year at that station. If toxicity is not detected in either of the wet weather samples for any given mass emission station, wet weather toxicity testing may be reduced to one sample from the first storm per year at that station. Toxicity shall be defined as a 70 percent survival rate for a single test or an average of 90 percent survival for three consecutive tests.

2. Toxicity Identification Evaluations (TIE)

The Principal Permittee shall conduct Phase I TIEs on wet weather samples when two consecutive samples from the same monitoring station show toxicity and on dry weather samples when two consecutive dry weather samples from the same monitoring station show toxicity.

3. Toxicity Reduction Evaluations (TRE)

Following the identification of a toxic pollutant, the Principal Permittee shall perform a TRE for that pollutant and submit it to the Regional Board Executive Officer for approval within one year. TREs shall include procedures for investigating the causes and identifying corrective actions for toxicity problems. Specifically, the following activities shall be included in each TRE:

- Identify the causative agents of toxicity (accomplished with the TIE)
- Isolate the sources of toxicity
- Evaluate the effectiveness of toxicity control options
- Implement effective toxicity control options
- Confirm the reduction in toxicity

The Principal Permittee and Permittees are responsible for the implementation of toxicity controls in areas where they have jurisdiction

We agreed that the County should be responsible for the implementation of toxicity reduction BMPs only in the unincorporated areas.

If applicable, the Principal Permittee may use the same TRE for the same toxic pollutant in different watersheds.

During TRE development and implementation, the Principal Permittee shall continue monitoring the first storm and one dry weather event per year for toxicity at the subject station. Two years after the TRE has been approved, the Principal Permittee shall analyze two wet weather and two dry weather samples for toxicity to evaluate the effectiveness of the TRE.

The Principal Permittee shall conduct a maximum of two TREs per year and will contribute up to a maximum of $300,000 per year for TRE development, implementation and monitoring. TRE performance shall be prioritized according to the TMDL schedule (Attachment 2) and the level of toxicity present.

We agreed on a cap of $300,000 per year for TRE development, implementation and monitoring

The Principal Permittee may use sampling data from previous storm water toxicity monitoring, however, all stations must conduct regular toxicity tests on the freshwater species Ceriodaphnia dubia where it was not previously conducted. For example, toxicity monitoring activities during the 2001-2002 permit year shall occur according to Table 1.

Table 1. Toxicity Monitoring Activities for 2001-2002

Monitoring Station	***Toxicity Monitoring Activities***
Ballona Creek	Zinc TRE, Copper TRE, toxicity testing on Ceriodaphnia dubia
Malibu Creek	Toxicity testing on Ceriodaphnia dubia, reduced testing on sea urchins
Los Angeles River	Wet and dry weather TIEs, toxicity testing on Ceriodaphnia dubia
San Gabriel River	Wet weather TIE, toxicity testing on Ceriodaphnia dubia
Dominguez Channel	Toxicity monitoring
Coyote Creek	Toxicity monitoring

C. Tributary/Source Identification Monitoring

1. The Principal Permittee shall develop and implement a tributary/source identification monitoring program. At a minimum the program shall consist of station identification, monitoring, and analysis of data for a minimum total of ~~20~~ 12 tributary stations throughout the five major watersheds (Ballona Creek, Malibu Creek, Los Angeles River, San Gabriel River, and Dominguez Channel).

We agreed to form a technical group, which will include various stakeholders, to delineate a program for tributary monitoring. The group will determine the number of monitoring stations and their locations and

frequency of sampling. The RWQCB then will assign the identified monitoring stations to selected permittee including the LA County Flood Control District

2. Each tributary station shall be selected and prioritized based on the TMDL schedule (Attachment 2), and the results of monitoring summarized in the Los Angeles County Integrated Monitoring Report (Integrated Report), located on the internet at ~~http://dpw.co.la.us/epd/wq/IntTC.cfm~~ http://www.dpw.co.la.ca.us/epd/wq/IntTC.cfm, and the Land Use Model. To the extent practicable, station selections shall be representative of specific sources of pollutants identified through the Land Use Model. The Principal Permittee may develop a staggered monitoring schedule to ensure sufficient available resources. Staggered monitoring shall begin with a minimum of the ~~ten~~ (?) highest priority tributary stations. The Principal Permittee shall submit the station selections to the Regional Board Executive Officer for approval prior to the issuance of this Order.

The web address of the integrated monitoring report needs to be changed from http://dpw.co.la.us/epd/wq/IntTC.cfm to http://www.dpw.co.la.ca.us/epd/wq/IntTC.cfm.

The technical group will determine details of the staggered monitoring schedule based on the number of stations and frequency of sampling.

3. Permittees shall participate in tributary monitoring when the majority of a monitoring station subwatershed is located in their jurisdiction.

4. The Principal Permittee shall monitor the first storm event and at least 2 additional storm events during each storm season. At least one dry weather event per year will also be sampled at each station.

5. All samples for tributary stations may be taken as grab samples or with an automatic sampler. Constituents to be analyzed for each location shall include the following:

   a) Constituents on the 303(d) and TMDL lists for each receiving water

   b) Constituents that were identified in the Integrated Report as exceeding the objectives of the California Ocean Plan, the Los Angeles Basin Plan, and the California Toxics Rule

   c) Diazinon and chlorpyrifos

   d) Indicator bacteria (total and fecal coliform, streptococcus, and enterococcus)

   e) Toxic pollutants identified by TIEs at that tributary's mass emission station

6. If a constituent is not detected at the method detection limit (MDL) for its respective test method listed in Attachment 1 in more than 25 percent of the first ten sampling events or on a rolling basis using ten consecutive sampling events, it will not be further analyzed unless the observed occurrences show high concentrations and are cause for concern. The Principal Permittee will also conduct annual confirmation sampling for non-detected constituents at each station for as long as the station is monitored.

7. The Principal Permittee shall submit a report identifying sources and/or source areas of pollutants within each watershed and priority management actions as part of the fourth Annual Report.

~~D. Receiving Waters Studies~~

~~1. The Principal Permittee shall conduct a study the impacts of storm water on receiving waters. The study or studies shall achieve the following objectives:~~

~~a) Sediment Toxicity: Evaluate the extent and causes of sediment toxicity in the estuaries of each of the 5 major watersheds (Ballona Creek, Malibu Creek, Los Angeles River, San Gabriel River, and Dominguez Channel). Existing data from the "Study of the Impact of Stormwater Discharge on Santa Monica Bay" for Ballona and Malibu Creeks may be used.~~

~~b) Plume Studies: Evaluate the dispersion, fate, and transport of storm water pollutants in Dominguez Channel, Los Angeles river, and San Gabriel River.~~

~~c) Benthic Study: Assess the impacts of storm water on the marine benthic community near the mouths of the Dominguez Channel, Los Angeles River, and San Gabriel River. This shall be accomplished by determining the population and community metrics of benthic epifauna and infauna.~~

~~d) Continuation of Santa Monica Bay Study: A follow-up to the "Study of the Impact of Stormwater Discharge on Santa Monica Bay" shall be conducted to determine the persistence of storm water plumes and an estimate of the duration of exposure of swimmers to bacteria and marine life to storm water toxicants and nutrients. Chemical and oceanographic studies shall be conducted to determine the fate of storm water particles discharged into the Santa Monica Bay.~~

~~2. The Principal Permittee may meet some or all of the requirements of the Receiving Waters Studies by participating in Regional Monitoring of the Southern California Bight, organized by the Southern California Coastal Water Research Project. This shall involve contributing sufficient funding and participating on the Steering Committee to help identify study objectives, sample sites, and indicators to be measured.~~

We agreed that Receiving Waters Studies are not needed. However, there is a possibility that sediment toxicity monitoring and benthic monitoring on a regular basis will be conducted instead

E. Urban Stream Bioassessment Monitoring

1. The Principal Permittee shall develop and implement an urban stream bioassessment monitoring program. At a minimum, the program shall consist of station identification, sampling, monitoring and analysis of data for 20 bioassessment stations in order to determine the biological and physical integrity of urban streams within Los Angeles County. In addition to the urban stream bioassessment stations, three reference bioassessment stations shall be identified, sampled, monitored, and analyzed. The selection, sampling, monitoring, and analysis of bioassessment stations shall meet the following requirements and shall be compatible with the Ambient Monitoring Program being developed by the Regional Board and with the California Department of Fish and Game Bioassessment Program.

Each urban stream bioassessment station shall:

a) be located within one of the six watersheds specified in the Mass Emission Monitoring Section;

b) be representative of urban stream conditions within one of the six watersheds; and

c) Meet the physical criteria of the California Stream Bioassessment Procedure[4], or a modification thereof, approved by the Regional Board Executive Officer.

2. Reference stations shall be selected in stream reaches that are not listed as impaired on the 303(d) list and that are not representative of urban stream conditions, based on surrounding land uses and a lack of up-stream point source discharges.

3. The Principal Permittee shall submit a proposed urban stream bioassessment monitoring plan, including station selections, to the Regional Board for approval within 180 days of the date this Order is adopted.

4. Each urban stream bioassessment station shall be monitored twice annually, in May and October of each year, beginning in May 2002 for the first two years and then once a year. A minimum of three replicate samples shall be collected at each station during each sampling event.

We agreed that the bioassessment monitoring should be conducted twice a year for the first two years and then once a year

5. Sampling, laboratory, quality assurance, and analysis procedures shall follow the standardized procedures set forth in the California Department of Fish and Game's California Stream Bioassessment Procedure (CSBP). Analysis procedures shall include comparison between station mean values for various biological metrics. Sampling, laboratory, quality assurance, and analytical procedures shall follow the standardized "Non-point Source Bioassessment Sampling Procedures" for professional bioassessment as set forth in the CSBP. Results of the Urban Stream Bioassessment Monitoring shall be reported annually as part of the Annual Storm Water Monitoring Report. Results shall include:

a) All ~~physical, chemical and~~ biological data collected in the assessment;

Physical and chemical data collection should not be required in the bioassessment monitoring

[4] California Stream Bioassessment Procedure (Protocol Brief for Biological and Physical/Habitat Assessment in Wadeable Streams), California Department of Fish and Game - Aquatic Bioassessment Laboratory, May 1999. Located at www.dfg.ca.gov/cabw/protocols.html.

b) Photographic documentation of assessment and reference stations;

c) Documentation of quality assurance and control procedures;

d) Analysis that shall include calculation of the metrics used in the CSBP;

e) Comparison of mean biological and habitat assessment metric values between assessment and reference stations;

f) Electronic data formatted to the California Department of Fish and Game Aquatic Bioassessment Laboratory for inclusion in the Statewide Access Bioassessment Database.

6. A professional environmental laboratory shall perform all sampling, laboratory, quality assurance, and analytical procedures.

~~F. Bacteria~~

~~The Principal Permittee and the City of Los Angeles shall participate in the Southern California Coastal Waters Research Project's development and calibration of water quality models in an effort to characterize the presence and persistence of indicator bacteria in dry and wet weather. This includes participation in the Beach Water Quality Workgroup and coordinating results of AB 411 monitoring with storm water management activities.~~

We agreed that bacteria monitoring should not be required.

~~G. Trash Monitoring~~

~~Permittees shall participate in the development of a baseline trash monitoring program with the respective Permittees, pursuant to the Los Angeles River and Ballona Creek trash TMDLs. The Principal Permittee is encouraged to implement the program in the watersheds that are not presently listed on the 303(d) list for impairment for trash.~~

We requested that this requirement be removed from the permit since the TMDL regulations have not been finalized. The Regional Board will make changes to the trash TMDL language requirement used in the draft permit to account for the fact the TMDL regulation has not been finalized.

H. Natural Stream Study

The Principal Permittee and Permittees ~~in the Malibu Watershed~~ (?) shall participate in, or seek funding to conduct, a study of the impacts of development and peak flow on erosion and habitat in natural stream channels in the Malibu Creek watershed.

There is a possibility that a natural stream study will be conducted in the Santa Clara Watershed instead of the Malibu Watershed.

I. BMP Effectiveness Study

The Principal Permittee shall conduct or participate in studies to evaluate the effectiveness of structural and treatment control storm water best management practices. The objectives of this study shall include the following:

- Monitor the reduction of pollutants of concern in storm water (including, but not limited to: trash, suspended sediment, pathogen indicators, nutrients, heavy metals, and oil and grease) from a minimum of three different BMPs that have been properly installed within the year preceding monitoring. Monitoring shall be continued until the effectiveness of the BMP can be determined.
- Evaluate the requirements, feasibility and cost of maintenance for each BMP.
- Develop recommendations for appropriate BMPs for the reduction of pollutants of concern in storm water in Los Angeles County.

The Principal Permittee may participate in the Santa Monica Bay Restoration Foundation's proposed study, "Performance Evaluation of Structural BMPs for Storm water Pollution Control in the Santa Monica Bay Watershed" to meet this requirement. Participation includes collaboration and resource contribution to expand the scope of the proposed study.

* Shoreline Monitoring

We agreed that shoreline monitoring, if it is added to the MS4 permit, would be the sole responsibility of the City of Los Angeles.

J. Standard Monitoring Provisions

1. The Principal Permittee shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the Report of Waste Discharge and application for this Order, for a period of at least five (5) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Regional Board or EPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge.

   Records of monitoring information shall include:

a) The date, exact place, and time of sampling or measurements;

b) The individual(s) who performed the sampling or measurements;

c) The date(s) analyses were performed;

d) The individual(s) who performed the analyses;

e) The analytical techniques or methods used; and,

f) The results of such analyses.

2. All sampling, sample preservation, and analyses must be conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in this Order.

3. All chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by an appropriate governmental regulatory agency.

4. If no flow occurred during the reporting period, the monitoring report shall so state.

5. For any analyses performed for which no procedure is specified in the EPA guidelines or in this Monitoring and Reporting Program, the constituent or parameter analyzed and the method or procedure used must be specified in the monitoring report.

6. Whenever feasible, all MDLs shall be less than California Toxic Rule and Ocean Plan standards. If this is not feasible, the Principal Permittee shall use analytical methods with the lowest MDL.

~~7. All samples shall be analyzed for SSC and TSS, until the Regional Board Executive Officer determines the most accurate method to quantify concentrations of suspended solid-phase material in surface waters.~~

The SSC analysis will not be required. TSS will be tested using current testing method.

8. The Regional Board Executive Officer or the Regional Board, consistent with 40 CFR 122.41, may approve changes to the Monitoring and Reporting Program, after providing the opportunity for public comment, either:

   a) By petition of the Principal Permittee or by petition of interested parties after the submittal of the Annual Monitoring Program Report. Such petition shall be filed not later than 60 days after the Annual Monitoring Program Report submittal date, or

   b) As deemed necessary by the Regional Board Executive Officer following notice to the Principal Permittee.

ATTACHMENT 1

LIST OF CONSTITUENTS IN MONITORING PROGRAM
AND ASSOCIATED DETECTION LIMITS

CONSTITUENTS	USEPA METHOD	DETECTION LIMIT
Conventional Pollutants		(mg/L)
Oil and Grease	413.2	1
Total Phenols	420.1	0.1
Cyanide	335.2	0.01
pH	150.1	0 - 14
Temperature		None
Dissolved Oxygen	---	Sensitivity to 5 mg/L
Bacteria		
Total Coliform	9221B	<20mpn/100ml
Fecal Coliform	9221B	<20mpn/100ml
Fecal Streptococcus	9221B	<20mpn/100ml
General		(mg/L)
Dissolved Phosphorus	300	0.05
Total Phosphorus	300	0.05
Turbidity	180.1	0.1NTU
Suspended-Sediment Concentration		2
Total Suspended Solids	160.2	2
Total Dissolved Solids	160.1	2
Volatile Suspended Solids	160.4	2
Total Organic Carbon	415.1	1

Total Petroleum Hydrocarbon	418.1	1
Biochemical Oxygen Demand	405.1	2
Chemical Oxygen Demand	410.4	20-900
Total Ammonia-Nitrogen	350.2	0.1
Total Kjeldahl Nitrogen	351.2	0.1
Nitrate-Nitrite	4110	0.1
Alkalinity	310.1	2
Specific Conductance	120.1	1umho/cm
Total Hardness	130.2	2
MBAS	425.1	<0.5
Chloride	4110	2
Fluoride	4110	0.1
Sulfate	4110	2

CONSTITUENTS	USEPA METHOD	DETECTION LIMIT
Metals (Total and Soluble)		**(µg/L)**
Aluminum	202.1	100
Antimony	204.2	0.5*
Arsenic	206.2	1*
Barium	208.2	100
Beryllium	210.2	0.5*
Boron	212.3	250
Cadmium	213.2	.25*
Calcium	215.2	200
Chromium	218.2	0.5*
Copper	219.2	0.5*
Hex. Chromium	7196	5*
Iron	236.2	100
Lead	239.2	0.5*
Magnesium	242.1	200
Manganese	243.2	30
Mercury	245.1	0.2*
Nickel	249.2	1*
Potassium	258.1	100
Selenium	270.2	1*
Silver	272.2	.25*
Sodium	273.1	50
Thallium	279.2	1*
Zinc	289.2	1*
Semivolatile Organic Compounds		**(µg/L)**
Acids	**8250**	
Benzoic Acid	8250	<5

Benzyl Alcohol	8250	<5
2-Chlorophenol	8250	<2
2, 4-Dichlorophenol	8250	1*
2, 6-Dichlorophenol	8250	<2
4-Dimetylphenol	8250	<2
4, 6-Dinitro-2-metylphenol	8250	<3
2,4-Dinitrophenol	8250	<3
2-Methylphenol	8250	<3
4-Methylphenol	8250	<3
2-Nitrophenol	8250	<3
4-Nitrophenol	8250	<3
4-Chloro-3-methylphenol	8250	1*
Pentachlorophenol	8250	1*
Phenol	8250	<1
2,3,4,6-Tetrachlorophenol	8250	<1
2,4,5-Trichlorophenol	8250	<1
2,4,6-Trichlorophenol	8250	<1

CONSTITUENTS	USEPA METHOD	DETECTION LIMIT
Base/Neutral	**8250**	**(µg/L)**
Acenapthene	8250	<0.5
Acenapthylene	8250	0.2*
Acetophenone-	8250	<3
Aniline	8250	<3
Anthracene	8250	2.0*
4-Aminobiphenyl	8250	<3
Benzidine	8250	<3
Benzo(a)anthracene	8250	<1
4-Chloroaniline	8250	<1
1-Chloronapthalene	8250	<1
p-Dimethylaminoazobenzene	8250	<3
7,12-Dimethylbenz(a)-anthracene	8250	<1
a-,a-Dimethylphenethylamine	8250	<3
Benzo(a)pyrene	8250	<1
Benzo(b)flouranthene	8250	<1
Benzo(k)flouranthene	8250	<1
Chlordane	8250	<1
Bis(2-chloroethoxy)methane	8250	<1
Bis(2-chlorisopropyl)ether	8250	<1
Bis(2-chloroethyl)ether	8250	<1
Bis(2-ethylhexyl)phtalate	8250	<3
4-Bromophenyl phenyl ether	8250	<1
Butyl benzyl phthalate	8250	<3
2-Chloronapthalene	8250	<1
4-Chlorophenyl phenyl ether	8250	<1
Chrysene	8250	<1

Dibenz(a,j)acridine	8250	<3
Dibenz(a,h)anthracene	8250	0.1*
1, 3-Dichlorobenzene	8250	<0.5
1, 4-Dichlorobenzene	8250	<0.5
1, 2-Dichlorobenzene	8250	<0.5
3, 3-Dichlorobenzidine	8250	<3
Diethylphthalate	8250	<0.5
Dimethylphthalate	8250	<0.5
Di-n-butylphthalate	8250	<3
2,4-Dinitrotoluene	8250	<0.5
2, 6-Dinitrotoluene	8250	<0.5
Diphenylamine	8250	<3
1, 2-Diphenylhydrazine	8250	1*
Di-n-octylphtalate	8250	<3
Ethyl methanesulfonate	8250	<3
Fluoranthene	8250	.05*
Fluorene	8250	0.1*

CONSTITUENTS	USEPA METHOD	DETECTION LIMIT
Base/Neutral (continued)	**8250**	**(µg/L)**
Hexachlorobenzene	8250	<0.5
Hexachlorobutadiene	8250	<1
Hexachlorocyclopentadiene	8250	<3
Hexachloroethane	8250	<1
Indeno(1, 2, 3-cd)pyrene	8250	0.05*
Isophorone	8250	<0.5
3-Methylcholanthrene	8250	<3
Methyl methanesulfonate	8250	<3
Napthalene	8250	0.2*
1-Napthylamine	8250	<3
2-Napthylamine	8250	<3
2-Nitroaniline	8250	<3
3-Nitroaniline	8250	<3
4-Nitroaniline	8250	<3
Nitrobenzene	8250	<0.5
N-Nitroso-di-n-butylamine	8250	<3
N-Nitrosodimethylamine	8250	<3
N-Nitrosodiphenylamine	8250	1*
N-Nitroso-di-N-propylamine	8250	<1
N-Nitrosopiperidine	8250	<3
Pentachlorobenzene	8250	<3
Phenacitin	8250	<3
Phenanthrene	8250	0.05*
2-Picoline	8250	<3
Pronamide	8250	<5
Pyrene	8250	0.05*

5-Tetrachlorobenzene	8250	<3
1, 2, 4,-Trichlorobenzene	8250	<0.5
Pesticides	**608**	**µg/L**
Aldrin	608	0.005*
alpha-BHC	608	0.05
beta-BHC	608	0.05
delta-BHC	608	0.05
gamma-BHC (Lindane)	608	0.05
Carbofuran	531.1	<5
Chlordane	608	0.05
4, 4'-DDD	608	0.05*
4, 4'-DDE	608	0.05*
4, 4'-DDT	608	0.01*
Benzaton	515.1	<2
Dieldrin	608	0.01*
Endosulfan I	608	<0.1
Endosulfan II	608	<0.1
Endosulfan sulfate	608	0.05*
Endrin	608	0.01*
Endrin aldehyde	608	0.01*
Glyphosate	547	<.5
Heptachlor	608	0.01*

CONSTITUENTS	USEPA METHOD	DETECTION LIMIT
Pesticides (continued)	**8250**	**(µg/L)**
Heptachlor epoxide	608	0.01*
Methoxychlor	608	<0.5
Toxaphene	608	0.5*
2,4-D	515.1	<0.02
2,4,5-TP-SILVEX	515.1	<0.2
Polychlorinated Biphenyls	**608**	**(µg/l)**
Aroclor-1016	608	0.5*
Aroclor-1221	608	0.5*
Aroclor-1232	608	0.5*
Aroclor-1242	608	0.5*
Aroclor-1248	608	0.5*
Aroclor-1254	608	0.5*
Aroclor-1260	608	0.5*
Herbicides		**(µg/L)**
Diazinon		0.01

Chlorpyrifos		0.05
Diuron		1
Malathion		1
Prometryn	507	2
Atrazine	507	2
Simazine	507	<2
Cyanazine	507	2
Molinate	507	<.01
Thiobencarb	507	<.1

Volatile Organic Compounds (VOCs)	**8240A**	**(µg/L)**
Acetonitrile	8240A	10.0
Acrolein	8240A	2*
Acrylonitrile	8240A	0.5
Benzene	8240A	0.5
Bromoform	8240A	0.5
2-Butanone	8240A	10.0
Carbon Disulfide	8240A	10.0
Carbon Tetrachloride	8240A	0.5
Chlorobenzene	8240A	0.5
Chlorodibronmethane	8240A	0.5
Chloroethane	8240A	0.5
2-Chloroethyl vinyl ether	8240A	1.0
Chloroform	8240A	0.5
Dibromomethane	8240A	0.5
1,2-Dibromo-3Chloropropane	8240A	<.01
1, 4-Dichloro-2-butene	8240A	10.0
Dichlorobromomethane	8240A	0.5
Dichlorodifluoromethane	8240A	0.5
1, 1-Dichloroethane	8240A	0.5
1, 2-Dichloroethane	8240A	0.5
1, 1-Dichloroethene	8240A	0.5

CONSTITUENT	**USEPA METHOD**	**DETECTION LIMIT**
VOCs (continued)	**8240A**	**(µg/L)**
trans-1, 2-Dichloroethene	8240A	0.5
1, 2-Dichloropropane	8240A	0.5
cis-1, 3-Dichloropropene	8240A	0.5
trans-1, 3-Dichloropropene	8240A	0.5
Ethanol	8240A	10.0
Ethylbenzene	8240A	0.5*
Ethylene Dibromide	8240A	<.01
Ethylene Oxide	8240A	10.0
Ethyl Metcrylate	8240A	0.5
2-Hexanone	8240A	5.0
Iodomethane	8240A	0.5

Methyl Bromide	8240A	5.0
Methyl Chloride	8240A	5.0
Methylene Chloride	8240A	1.0
4-Methyl-2-pentanone	8240A	5.0
Styrene	8240A	0.5
1, 1, 2,2-Tetrachloroethane	8240A	0.5
Tetrachloroethane	8240	0.5
Toluene	8240A	0.5*
Trichlorofluoromethane	8240A	1.0
1, 2,3-Trichloropropane	8240A	0.5
Trichloroethene	8240A	0.5
1, 1, 1-Trichloroethane	8240A	1.0
1, 1,2-Trichloroethane	8240A	1.0
1,1,2-Trichloro- 1,2,2 triflluoroethane	8240A	<.5
Vinyl acetate	8240A	5.0
Vinyl chloride	8240A	0.5
Xylene (Total)	8240A	0.5

*** Method Detection Limits have been decreased pursuant to the California Toxics Rule**

Attachment 2

Total maximum Daily Loads Scheduled for Implementation in Los Angeles County Watershed Within 5 Years

Waterbody	*TMDL*	*Consent Decree Year*
Malibu	Coliform	2002
Malibu	Nutrients	2002
Malibu Creek Lakes and Tributaries	Metals	
Ballona Creek	Trash	2001
Ballona Creek	Coliform	2006
Ballona Creek	Historic Pesticides	2004
Ballona Creek	Metals	2004
Dominguez Channel/LA Harbor	Coliform	2002
Los Angeles River	Trash	2001
Los Angeles River	Nutrients	2001
Los Angeles River	Coliform	2001
Los Angeles River	Chlorpyrifos	2006
Los Angeles River	Metals	2004
San Gabriel River	Nutrients	2003
San Gabriel River	Coliform	
San Gabriel River	Metals	2006
San Gabriel Lakes	Coliform	
Santa Monica Bay Beaches	Coliform	2002
Santa Monica Bay Beaches	Metals	2004
Santa Monica Bay Beaches	Chlordane	2006