Submitted by U.S. Mail and electronic mail

May 15, 2009

Board and Executive Director
California Regional Water Quality Control Board
San Diego Region 9
9174 Sky Park Court, Suite 100
San Diego, CA 92123

RE: Tentative Order No. R9-2009-0002
NPDES NO. CAS0108740

Waste Discharge Requirements for Discharges of Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watershed of the County of Orange, The Incorporated Cities of Orange County, and The Orange County Flood Control District Within the San Diego Region

The members of the community of South Laguna represented by the South Laguna Civic Association, established in 1946, recognizes urban runoff from dry weather flows continues to be discharged through regional storm drain systems permitted exclusively to convey rain water. The Aliso Watershed is listed by CWA Section 303(d) as Impaired Waters for "Pacific Ocean Toxicity, Phosphorus, Bacterial Indicators, Benzo[b]flouranthene, Dieldrin and Sediment Toxicity".

Chronic illegal discharges from MS4 storm drains by Copermitees contribute in excess of 5,000,000 gallons each day of polluted urban runoff to knowingly and negligently perpetuate a significant public health and safety nuisance at Aliso Beach in South Laguna, Laguna Beach, California. Marine life and critical habitat in locally protected coastal receiving waters and Environmentally Sensitive Areas (ESA) remain degraded by elevated flows of abandoned imported water which constitutes the primary source of dry weather polluted urban runoff.

The SLCA joins other environmental organizations and responsible citizen groups demanding immediate cessation of illegal MS4 Discharges to creek and coastal receiving waters and adoption of Low Impact Development (LID) Standards for all new development and redevelopment projects along with other Recommended Actions as previously submitted.

MS4 DISCHARGE CHARACTERISTICS

According to the SDRWQCB website:

1. Urban runoff contains "waste", as defined in the California Water Code (CWC), and pollutants that adversely affect the quality of the waters of the State. The discharge of urban runoff from an MS4 is a "discharge of pollutants from a point source" into waters of the U.S. as defined in the CWA.

2. The most common categories of pollutants in urban runoff include total suspended solids, sediment (due to anthropogenic activities); pathogens (e.g., bacteria, viruses, protozoa); heavy metals (e.g., copper, lead, zinc and cadmium); petroleum products and polynuclear aromatic hydrocarbons; synthetic organics (e.g., pesticides, herbicides, and PCBs); nutrients (e.g., nitrogen and phosphorus fertilizers), oxygen demanding substances (decaying vegetation, animal waste), detergents, and trash.

3. The discharge of pollutants and/or increased flows from MS4s may cause or threaten to cause the concentration of pollutants to exceed applicable receiving water quality objectives and impair or threaten to impair designated beneficial uses resulting in a condition of pollution (i.e., unreasonable impairment of water quality for designated beneficial uses), contamination, or nuisance.

4. Pollutants in urban runoff can threaten and adversely affect human health. Human illnesses have been clearly linked to recreating near storm drains flowing to coastal waters. Also, urban runoff pollutants in receiving waters can bioaccumulate in the tissues of invertebrates and fish, which may be eventually consumed by humans.

5. Urban runoff discharges from MS4s often contain pollutants that cause toxicity to aquatic organisms (i.e., adverse responses of organisms to chemicals or physical agents ranging from mortality to physiological responses such as impaired reproduction or growth anomalies). Toxic pollutants impact the overall quality of aquatic systems and beneficial uses of receiving waters.

6. The Copermittees discharge urban runoff into lakes, drinking water reservoirs, rivers, streams, creeks, bays, estuaries, coastal lagoons, the Pacific Ocean, and tributaries thereto within one of the eleven hydrologic units (San Juan Hydrologic Unit) comprising the San Diego Region as shown in Tables 2a and 2b. Some of the receiving water bodies have been designated as impaired by the Regional Board and the United States Environmental Protection Agency (USEPA) in 2006 pursuant to CWA section 303(d). Also shown in the Tables are the watershed management areas (WMAs) as defined in the Regional Board report, Watershed Management Approach, January 2002.

7.The Copermittees' water quality monitoring data submitted to date documents

persistent violations of Basin Plan water quality objectives for various urban runoff related pollutants (fecal coliform bacteria, total suspended solids, turbidity, metals, etc.) at various watershed monitoring stations. Persistent toxicity has also been observed at some watershed monitoring stations. In addition, bioassessment data indicates that the majority of urbanized receiving waters have Poor to Very Poor Index of Biotic Integrity ratings. In sum, the above findings indicate that urban runoff discharges are causing or contributing to water quality impairments, and are a leading cause of such impairments in Orange County.

8. When natural vegetated pervious ground cover is converted to impervious surfaces such as paved highways, streets, rooftops, and parking lots, the natural absorption and infiltration abilities of the land are lost. Therefore, runoff leaving a developed urban area is significantly greater in runoff volume, velocity, and peak flow rate than pre-development runoff from the same area. Runoff durations can also increase as a result of flood control and other efforts to control peak flow rates. Increased volume, velocity, rate, and duration of runoff greatly accelerate the erosion of downstream natural channels. Significant declines in the biological integrity and physical habitat of streams and other receiving waters have been found to occur with as little as a 3-5% conversion from natural to impervious surfaces. The increased runoff characteristics from new development must be controlled to protect against increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.

9. Urban development creates new pollution sources as human population density increases and brings with it proportionately higher levels of car emissions, car maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, trash, etc. which can either be washed or directly dumped into the MS4. As a result, the runoff leaving the developed urban area is significantly greater in pollutant load than the pre-development runoff from the same area. These increased pollutant loads must be controlled to protect downstream receiving water quality.

10. Development and urbanization especially threaten environmentally sensitive areas (ESAs), such as water bodies designated as supporting a RARE beneficial use (supporting rare, threatened or endangered species) and CWA 303(d)-impaired water bodies. Such areas have a much lower capacity to withstand pollutant shocks than might be acceptable in other areas. In essence, development that is ordinarily insignificant in its impact on the environment may become significant in a particularly sensitive environment. Therefore, additional control to reduce pollutants from new and existing development may be necessary for areas adjacent to or discharging directly to an ESA.

11. Although dependent on several factors, the risks typically associated with properly managed infiltration of runoff (especially from residential land use areas) are not significant. The risks associated with infiltration can be managed by many techniques, including (1) designing landscape drainage features that promote infiltration of runoff, but do not “inject” runoff (injection bypasses the natural processes of filtering and transformation that occur in the soil); (2) taking reasonable steps to prevent the illegal disposal of wastes; (3) protecting footings and foundations; and (4) ensuring that each drainage feature is adequately maintained in perpetuity.

14. Non-storm water (dry weather) discharge is not considered a storm water (wet weather) discharge and therefore is not subject to regulation to the Maximum Extent Practicable (MEP) from CWA 402(p)(3)(B)(iii), which is explicitly for "Municipal and Industrial *Stormwater Discharges* (emphasis added)". Non-storm water discharges, per CWA 402(p)(3)(B)(ii) are to be effectively prohibited unless specifically exempted. Exempted discharges identified as a source of pollutants are required to be *addressed* (emphasis added) through prohibition. Dry weather non-storm water discharges have been shown to contribute significant levels of pollutants and flow in arid, urban Southern California watersheds. The Copermittees have identified landscape irrigation, irrigation water and lawn water, previously exempted discharges, as a source of pollutants and conveyance of pollutants to waters of the United States. Landscape irrigation is distinct from agricultural irrigation as it is primarily for discretionary ornamental purposes and therefore should not be exempt.

Reference: http://www.waterboards.ca.gov/rwqcb9/rb9board/Apr07/4-11-07%20items/item%209/EOSR%20SD2%20-%20Tentative%20Order%20R9-2007-0002%20with%20attach%20and%20monitoring.pdf

By the preceding SDRWQCB analysis, the Aliso Watershed remains non-compliant with basic MS4 protocols and Copermitees persist in a 20 year pattern of disregard for the Rules and Regulations of the SDRWQCB. ESA habitats designated by the California Department of Fish and Game (December 2004) impacted by the degraded Aliso Watershed include the Aliso Creek Estuary, South Laguna Beach Marine Park (established 1968) and Niguel State Marine Park (established 1971).

Legal Points and Authorities

The California Water Act, Article 4, Chapter 3, Section 60310(e) of Title 22, California Code of Regulations states "Any irrigation runoff shall be confined……" Moreover:

> Section 13142.5. In addition to any other policies established pursuant to this division, the policies of the state with respect to water quality as it relates to the coastal marine environment are that: (a) Wastewater discharges shall be treated to protect present and future beneficial uses, and, where feasible, to restore past beneficial uses of the receiving waters. Highest priority shall be given to improving or eliminating discharges that adversely affect any of the following:
>
> (1) Wetlands, estuaries, and other biologically sensitive sites.
> (2) Areas important for water contact sports.
> (3) Areas that produce shellfish for human consumption.
> (4) Ocean areas subject to massive waste discharge. Ocean chemistry and mixing processes, marine life conditions, other present or proposed outfalls in the vicinity, and relevant aspects of areawide waste treatment management plans and programs, but not of convenience to the discharger, shall for the purposes of this section, be considered in determining the effects of such discharges. Toxic and hard-to-treat substances should

be pretreated at the source if such substances would be incompatible with effective and economical treatment in municipal treatment plants.

The Aliso Watershed incorporates all of the above high priority elements as it includes:

(1) Aliso Estuary Tidewater Goby Habitat as inventoried in 1978 by the City of Laguna Beach,
(2) Popular free diving, snorkeling, surfing and the Annual Aliso Beach World Skimboarding Championship,
(3) Abalone and Mussel Shellfish Grounds,
(4) The immediate oceanographic cell is subject to massive waste discharge and areawide waste treatment programs accumulating toxic substances associated with the daily discharge of over 5,000,000 gallons of urban runoff and, only 1 ½ mile offshore, 12 to 15 million gallons of secondary treated sewage water for a cumulative total of 20,000,000 gallons each day of wastewater contamination (Over 7 Billion Gallons Annually).

The proposed Draft MS4 Permit is inappropriate and improper in that it violates laws and regulations pertaining to enforcement of Cleanup and Abatement Orders (California Water Code Section 13304); the SWRCB Water Quality Enforcement Policy (February 19, 2002; pages 3,4,11,26, 39,42); the Porter-Cologne Clean Water Act; and is a discriminatory violation of the State of California definition governing Environmental Justice (Government Code Section 65040.12 and Public Resources Code Section 72000).

Low Impact Development

While immediate interventions with a sense of the imperative are urgently in need of support from the SDRWQCB and other regulatory agencies, new developments and redevelopments including residential remodels can benefit from incorporation of Low Impact Development (LID) Standards and Strategies. Immediate, short term interventions coupled with LID Standards can restore the natural semi-arid ecology of the Aliso Watershed.

"Rooftops to Rivers" discusses techniques specific cities have implemented and examples of LID-type ordinances around the country(See: www.nrdc.org/ Rooftops to Rivers)

- City of Santa Monica, California - defines "new development," to which specific storm water runoff control requirements apply, as "any construction project that (a) results in improvements to fifty percent or greater of the square footage of a building, (b) creates or adds at least five thousand square feet of impervious surfaces, or (c) creates or adds fifty percent or more of impervious surfaces." (Santa Monica Municipal Code, Chapter 7.10.030(d)(3));

- Contra Costa County, California – applies storm water runoff control requirements to "new and redevelopment projects that create 10,000 square feet or more of impervious area." (RWQCB, San Francisco Bay Region, Contra Costa Countywide NPDES Municipal Stormwater Permit Amendment Order No. R2-

2003-0022 (amending Order No. 989-058, NPDES Permit No. CAS0029912) at pp. 9-10 (lowering previous one-acre threshold for the application of performance standards effective August 15, 2006);

- State of New Jersey - defines "major development," to which specific storm water runoff control requirements apply, as "any development that ultimately provides for disturbing one or more acres of land or increasing impervious surface by one-quarter acre or more." (New Jersey Stormwater Rules, N.J.A.C. § 7:8-1.2);

- State of Washington – applies numeric storm water treatment requirements to any project adding 5,000 square feet or more of new impervious surface. (Phase I Municipal Stormwater NPDES General Permit (Draft Feb. 15, 2006) Appendix I (Minimum Technical Requirements for New Development and Redevelopment), at pp. 7, 8, 20);

- State of Maryland – requires storm water management plans for any development that disturbs 5,000 square feet or greater. (Maryland Code, Title 26, Subtitle 17, Chapter 2, §5B; see also Maryland Model Stormwater Management Ordinance (July 2000) at pp. 2, 5, 8);

- City of Portland, Oregon – employs "a citywide pollution reduction requirement for all development projects with over 500 square feet of impervious development footprint area, and all existing sites that propose to create new off-site stormwater discharges." (Stormwater Management Manual (adopted July 1, 1999; updated September 1, 2004) Chapter 1.5.2 (Pollution Reduction Requirements) at p.1-25);

- Stafford County, Virginia – uses an exemption approach under which low impact development practices apply to all development except a) mining/oil & gas operations; b) agriculture; c) *linear development projects that are less than 1-acre, insignificant increases in peak flow, and no flooding or downstream erosion problems*; d) single family not part of a subdivision; e) structure ancillary to single-family homes; and e) "land development projects that disturb less than two thousand five hundred (2,500) square feet of land." (Stafford County Muni. Code § 25.5-1(f).)

(Reference: Michelle Mehta, Project Attorney, Natural Resources Defense Council)

The public, residents of Laguna Beach and visitors from around Orange County and beyond deserve the highest standards from the SDRWQCB to protect us and future generations from urban runoff pollution. California must lead the way towards implementing timely solutions and wise, low impact development as we move forward.

Recommended Actions

1. The pattern of negligence and waste characterizing systematic failed measures by Copermitees demands intervention by the SDRWCB to institute Cleanup and Abatement measures aimed at numerical reductions of contaminated flow rates in a prompt, specific timetable at known inland MS4 facility "point sources".

2. To encourage compliance with basic water quality protection measures, mandatory citations must be issues against Copermitees for creating and perpetuating an attractive public nuisance by knowingly allowing inland dry weather MS4 discharges to accumulate and pollute a coastal estuarine wetland, Aliso Beach and the South Laguna Beach State Marine Park.

Illegal breaching of natural beach sand berm
to create attractive public nuisance

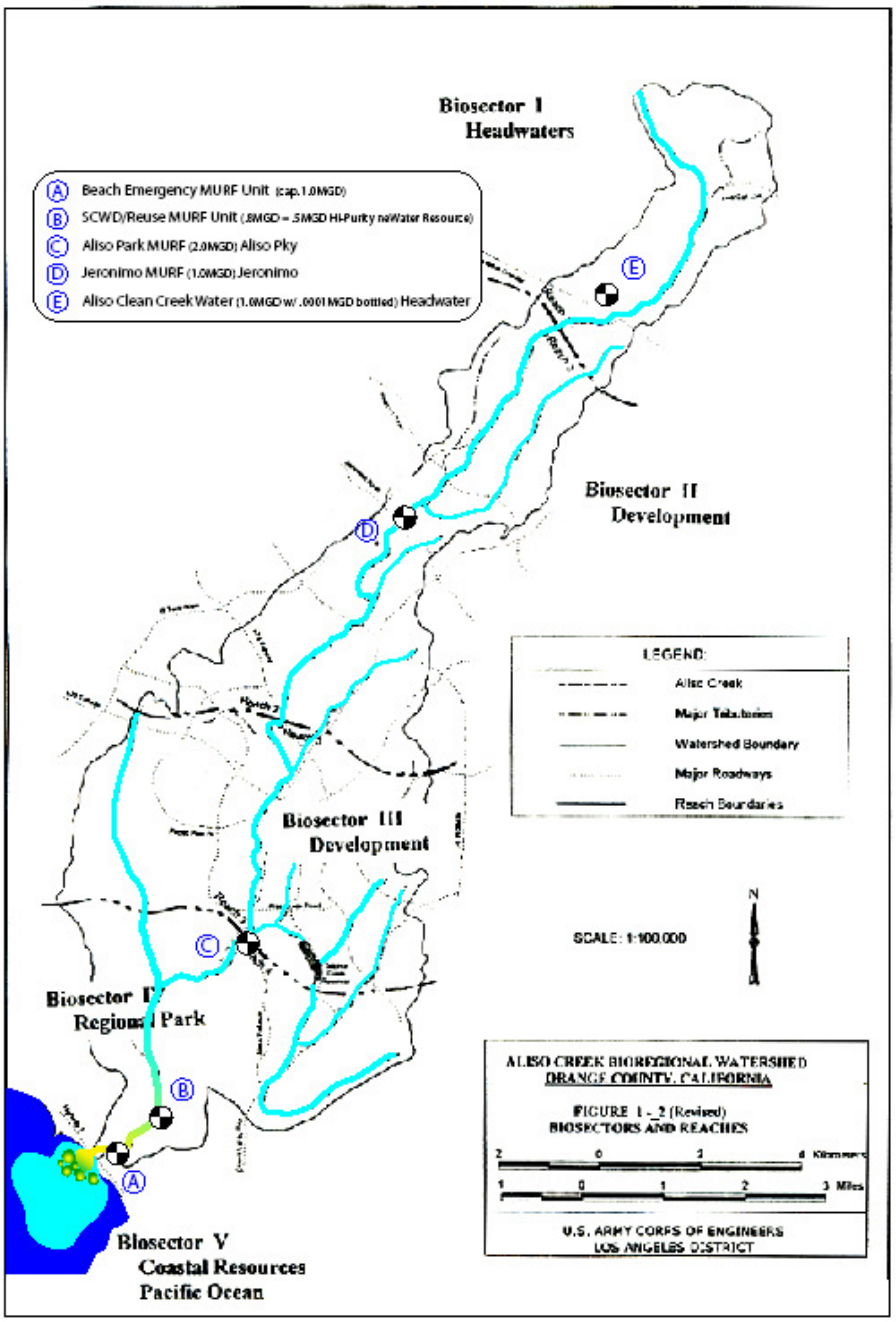
3. SDRWQCB interventions can include:

    - Diversions to inland SOCWA facilities for treatment and reuse as reclaimed water. The City of Laguna Beach received SDRWQCB Approvals for 13 dry weather/first flush diversions to the Coastal Treatment Plant for beneficial reuse as reclaimed water. The Aliso Watershed, as the largest watershed in the City, has yet to receive approvals for any diversions. The inconsistent application of regulatory actions raises issues of fairness and legal propriety. The Aliso

Watershed must target proximate historic natural flow regimes to achieve any reasonable restoration of the habitat: creeks, canyons, coast and ocean.

- Strategic capture of MS4 discharges for filtration and local beneficial reuse until Copermitees demonstrate measurable results over the next 3 to 10 years capable of removing dry weather urban runoff for beneficial reuse and water/energy conservation mandates.

Aliso Bioregional Watershed



- Immediate fines levied against offending subwatersheds, cities, homeowner associations, golf courses and others with elevated dry season discharge rates detected during monitoring activities at known point sources

- Fines levied against offending inland water districts for failing to control urban runoff (i.e." imported water byproduct") through monitoring, punitive pricing structure and more aggressive recycled water programs

4. During the current permit period, Copermitees have failed to achieve measurable reductions in MS4 discharges. SDRWQCB must exercise authority and assume control over the present, clearly defective watershed management programs. Private subcontractor services can be retained with stipulations for numerical reductions of flows and constituents within time certain performance parameters. Funds for such services can be recovered by reallocating funds presently wasted by failed Copermitee watershed management practices.

5. Relative to Low Impact Development (LID):

   A. Expand the definition of "Priority Development Project" to include all new development and redevelopment projects.
   B. Adopt a standard of 3% maximum allowable Effective Impervious Area (EIA) in all Priority Development Projects and Redevelopment Projects
   C. Identify all LID BMPs as the principle storm drain management strategy for development and redevelopment projects
   D. Require a three month timeline for Copermitees to develop guidelines for LID strategies

6. As mitigation for a pattern of failed watershed management programs that flood creek and coastal waters, Copermitees should be directed to restore the Aliso Coastal Estuary Wetlands to 1970 water levels for the reintroduction of the federally listed tidewater goby (designated "Potential Reintroduction Site" – US Fish and Wildlife Service, South Coast Recovery Unit: Sub-Unit SC 1 (Eastern Half), 2005).

7. In support of recommended action C.2., revise timeframes to require **e**ach Copermittee, beginning no later than the First not 3rd year following adoption of this Order, shall begin the non-storm water dry weather numeric effluent monitoring as described in Attachment E of the Order.

8. Relative to item E.1. f., Utilize aggressive enforcement mechanisms to require compliance with Copermittee storm water ordinances, permits, contracts, or orders; To save municipal funds for staff enforcement, provide rewards and bountys to citizen monitors for information leading to identification of prohibited runoff discharges to MS4 infrastructure.

9. Treatment BMP Review: The Copermittees must review and update the BMPs that are listed in their local SUSMPs as options for treatment control during the first year of implementation of this Order. At a minimum, the update must include removal of obsolete

or ineffective BMPs and replacement with LID BMPs that can be used for treatment, such as bioretention cells, bioretention swales, cisterns, etc. Promote cisterns networks in hydrologic sub units scaled to receive all dry weather flows, first flush events and peak flows to measurably reduce creek erosion and to create a local water supply for beneficial reuse and mandated water conservation purposes.

Throughout the Order, water quantity is rarely mentioned or given adequate consideration as it relates to transportation of pollutants and erosion of local receiving waters.

Conclusion

Twenty years and $20 million represents too much time and too much money wasted on mismanagement of dry weather urban runoff pollution contaminating Aliso Creek, Aliso Beach and the South Laguna Beach State Marine Park. According to Stream Gage Information (Appendix D, Aliso Creek Watershed Chapter), "Data consisting of periodic discharge measurements was measured at one site on Aliso Creek between the years of 1932 and 2002….Historically (pre-urbanization), Aliso Creek was an ephemeral creek".

Water quality laws and regulations are not intended to be implemented for the convenience of Copermitees, inland Water Districts and their cohorts among the Residential Development and Building Industries. Dry weather MS4 discharges are directly attributable to the collective practices of these entities and constitutes an industrial wastewater byproduct from known point sources.

Arguments to perpetuate and allow ongoing water pollution based upon "Maximum Extent Practicable", while being a scientifically imprecise concept, does not on balance take into account "practical" protection of irreplaceable coastal wetlands and ocean resources unnecessarily flooded by dry weather MS4 discharges. Nor does this argument account for the "unpractical" and costly poisoning of local sea mammals, birds and humans with water borne illnesses.

The San Diego Watershed Treatment System, supervised by the Santa Ana Regional Water Quality Control Board, demonstrates the effectiveness of strategic interventions sited among known inland point sources. Removing harmful dry weather urban runoff water quality constituents and elevated flows is possible through aggressive leadership by Regional Boards.

The South Laguna Civic Association appreciates the efforts by the San Diego Regional Water Quality Control Board to consider the enormous impacts of uncontrolled MS4 dry weather urban runoff pollution before approving a genuinely effective MS4 Permit Program for the Aliso Watershed.

Respectfully submitted,

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REFERENCE NOTES

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION TENTATIVE ORDER NO. R9-2008-0001
NPDES NO. CAS0108740

WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES OF URBAN RUNOFF FROM THE MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s) DRAINING THE WATERSHEDS OF THE COUNTY OF ORANGE,
THE INCORPORATED CITIES OF ORANGE COUNTY, AND THE ORANGE COUNTY FLOOD CONTROL

From the SDRWQCB Staff Report:

7. The Copermittees' water quality monitoring data submitted to date documents **persistent violations of Basin Plan water quality objectives** for various urban runoff related pollutants (fecal coliform bacteria, total suspended solids, turbidity, metals, etc.) at various watershed monitoring stations. Persistent toxicity has also been observed at some watershed monitoring stations. In addition, bioassessment data indicates that the majority of urbanized receiving waters have **Poor to Very Poor Index of Biotic Integrity** ratings. In sum, the above findings indicate that urban runoff discharges are causing or contributing to water quality impairments, and are a leading cause of such impairments in Orange County.

10. Development and urbanization especially threaten environmentally sensitive areas (ESAs), such as water bodies designated as supporting a **RARE beneficial use** (supporting rare, threatened or endangered species) and **CWA 303(d)-impaired water bodies**. Such areas have a much lower capacity to withstand pollutant shocks than might be acceptable in other areas. In essence, development that is ordinarily insignificant in its impact on the environment may become significant in a particularly sensitive environment. Therefore, additional control to **reduce pollutants from** new and **existing development** may be necessary for areas adjacent to or discharging directly to an ESA.

http://www.waterboards.ca.gov/sandiego/water_issues/programs/stormwater/docs/oc_permit/update121207/2008_0001tentative.pdf

Absent evidence to the contrary*, this continual assessment, revision, and improvement of urban runoff management program implementation is expected to ultimately achieve compliance with water quality standards in the Region. **The contrary evidence is Co-permitee violations of standards suggests enforcement and fines may be necessary to achieve compliance.*

b. The Copermittees have generally been implementing the jurisdictional urban runoff management programs required pursuant to Order No. 2002-01 since February 13, 2003**. However, urban runoff discharges continue to cause or contribute to violations of water quality standards.**

f. Urban runoff needs to be addressed during the three major phases of urban development (planning, construction, and **use**) in order to reduce the discharge of pollutants to the MEP and protect receiving waters. Urban development which is not guided by water quality planning policies and principles can unnecessarily result in increased pollutant load discharges, flow rates, and flow durations which can impact receiving water beneficial uses. Construction sites without adequate BMP implementation result in sediment runoff rates which greatly exceed natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters. **Existing urban development generates substantial pollutant loads which are discharged in urban runoff to receiving waters.**

c. Use of Low-Impact Development (LID) site design BMPs at new development projects can be an effective means for minimizing the impact of urban runoff discharges from the development projects on receiving waters. LID is a site design strategy with a goal of maintaining or replicating the pre-development hydrologic regime through the use of design techniques. LID site design BMPs help preserve and restore the natural hydrologic cycle of the site, allowing for filtration and infiltration which can greatly reduce the volume, peak flow rate, velocity, and pollutant loads of urban runoff. *What about LID for existing development?*

Aliso Pollutants of Concern

Toxicity
Phosphorus
Bacterial indicators
Benzo[b]flouranthene
Dieldrin
Sediment toxicity

Dieldrin is a chlorinated hydrocarbon originally produced in 1948 by J. Hyman & Co, Denver, as an insecticide. The molecule has a ring structure based on naphthalene.

Dieldrin is closely related to aldrin which itself breaks down to form dieldrin. Aldrin is not toxic to insects, it is oxidised in the insect to form dieldrin which is the active compound. Both dieldrin and aldrin are named after the Diels-Alder reaction which is used to form aldrin from a mixture of norbornadiene and hexachlorocyclopentadiene.

Originally developed in the 1940s as an alternative to DDT, dieldrin proved to be a highly effective insecticide and was very widely used during the 1950s to early 1970s. Endrin is a stereoisomer of dieldrin.

However, it is an extremely persistent organic pollutant, it does not easily break down. Furthermore it tends to biomagnify as it is passed along the food chain. Long-term exposure has proven toxic to a very wide range of animals including humans, far greater than to the original insect targets. For this reason it is now banned in most of the world.

It has been linked to health problems such as Parkinson's, Breast Cancer, and immune, reproductive, and nervous system damage. It can also adversly affect testicular descent in the fetus if a pregnant woman is exposed to Dieldrin.

What is Benzo[a]Pyrene?

Benzo[a]pyrene is a five ring Polycyclic aromatic hydrocarbon (PAH) found in small (<1 m) combustion-generated respirable particles collected from such sources as motor vehicle exhaust, smoke from residential wood combustion, fly ash from coal-fired power plants (not in California), and other combustion related processes. As a class, PAHs have a characteristic structure of fused aromatic rings. Benzo[a]pyrene comprises less than five percent of the total amount of PAHs present in the atmosphere. The International Agency for Research on Cancer (IARC) considers benzo[a]pyrene a known animal carcinogen and a probable human carcinogen (Group 2A). Benzo[a]pyrene has been evaluated by the ARB and OEHHA under the state law AB 1807.

(BENZENE STRUCTURE MISSING)

Benzo[a]pyrene

Why was Benzo[a]Pyrene Evaluated as a TAC?

The staffs of the ARB and the OEHHA have reviewed the available scientific evidence on the presence of benzo[a]pyrene in the atmosphere of California and its potential adverse effects on public health. The ARB staff has determined that benzo[a]pyrene is emitted from a variety of sources, can be detected in the ambient air throughout California, and is highly mobile in the environment.

The United States Environmental Protection Agency (U.S. EPA) classified benzo[a]pyrene as a "possible human carcinogen" (Group B2) and the IARC classified benzo[a]pyrene as a "probable human carcinogen" (Group 2A). Benzo[a]pyrene is part of a larger group of complex mixtures (soots, tars and oils) designated by IARC as Group 1 known human carcinogens. Although there are several studies in which benzo[a]pyrene was measured as an indication of exposure to the mixture of compounds in soots, tars, and oils, the epidemiological data were considered inadequate to evaluate the carcinogenicity of benzo[a]pyrene itself. The OEHHA staff have concluded that at ambient concentrations, benzo[a]pyrene may cause or contribute to

an increase in mortality or serious illness and may therefore pose a potential hazard to human health.

What are the Sources of Benzo[a]pyrene?

Although there are natural sources of benzo[a]pyrene emissions (e.g., volcanic activity), anthropogenic sources are the most important to air pollution. Benzo[a]pyrene is a product of incomplete combustion and its major sources in California are vegetative materials burning, mobile sources, rubber tire wear, residential combustion of wood, and combustion of coal. Vegetative materials and other waste burning is responsible for the majority of statewide benzo[a]pyrene emissions from stationary sources. Vehicles that are not equipped with catalytic converters are the major source of benzo[a]pyrene emissions from mobile sources. Diesel exhaust is currently being considered for identification under the state law AB 1807.

The major indoor sources of airborne benzo[a]pyrene are residential wood combustion and tobacco smoking. The operation of combustion appliances can also contribute to indoor levels.

Elevated lung cancer rates among women in rural china have been attributed to emissions from their coal-fired stoves (Mumford *et al*.,1987;Alder and Fischer,1994). Studies of populations occupationally exposed to diesel emissions data suggest that there is an association between this exposure and lung cancer (Roger,1987; Sharma and Patil, 1992a; Chow *et al*., 2001). The carcinogenic activity of diesel emissions has also been demonstrated in rats (BCMELP, 1993; CEPA.,1994). In the late, Whitby and coworkers synthesized numerous measurements at atmospheric particle size distributions to describe the distribution of particle sizes in atmospheric aerosols (Seinfeld ,1986). Atmospheric particles are grouped into ultrafine, fine and coarse size modes. Sources of Polycyclic aromatic hydrocarbons (PAHs) in the urban atmosphere of industrialized countries include automobiles, re-suspended soils, refineries and power plants (Roger *et al*., 1991;

Phosphorus is a component of DNA, RNA, ATP, and also the phospholipids which form all cell membranes. It is thus an essential element for all living cells. The most important commercial use of phosphorus-based chemicals is the production of fertilizers.

Phosphorus compounds are also widely used in explosives, nerve agents, friction matches, fireworks, pesticides, toothpaste and detergents.

The aquatic plant nutrients, nitrogen (N) and phosphorus (P) compounds, are of potential concern in urban stormwater runoff due to their ability to stimulate excessive growth of aquatic plants in receiving waters. The eutrophication (fertilization) of a waterbody can be significantly detrimental to water quality-related beneficial uses. It was found in the 1970s that urban stormwater runoff contains about 100 times the total concentrations of phosphorus that are typically derived from stormwater runoff from forested areas, and about 10 times the amounts contributed from many agricultural areas. It was also found then that substantial portions of the

nitrogen and phosphorus components are in particulate forms that are not available to support aquatic plant growth.

As with most other chemical constituents in urban stormwater runoff, the total concentrations of a constituent, such as nitrogen or phosphorus, is an unreliable indicator of potential water quality problems. Sufficient work has been done, however, on the available forms of phosphorus found in this runoff to be able to estimate the quantities of algal-available P in a runoff water. Normally, this is equal to the soluble orthophosphate plus about 20 percent of the particulate phosphorus.

Some groups are calling for a ban on the use of lawn fertilizers in urban areas in an effort to try to reduce the phosphorus content of urban stormwater runoff. As in the case of other chemical constituents in such runoff, site-specific studies have to be conducted to determine whether controlling the phosphorus to a certain extent will have a significant effect on the water quality-related beneficial uses of the receiving water. It has been found that to change the degree of eutrophication of a waterbody to a perceptible amount, it is necessary to reduce the quantity of algal-available P entering the waterbody by about 25 percent. It is unlikely that curtailing the use of lawn fertilizers will have a significant impact on most waterbodies since such fertilizers represent a small part of the total phosphorus load in urban runoff. Further, except for some urban lakes which essentially receive only this type of runoff, it will be unlikely that reducing the amounts of nitrogen and phosphorus will significantly improve the eutrophication-related quality of waterbodies.

Runoff Toxicity

Since it is not possible to reliably predict, using chemical measurements, whether a chemical constituent in stormwater runoff is toxic to aquatic life in receiving waters, the use of aquatic life toxicity tests is beginning to be more widely practiced. These tests can be used to determine whether the regulated as well as the unregulated chemicals in runoff present a potentially significant threat to aquatic life due to toxicity. Caution, however, must be exercised in the interpretation of results. The toxicity tests typically used significantly overestimate the actual toxicity since their duration provides longer exposure to aquatic organisms than they normally are exposed to in receiving waters. Ordinarily, the runoff is rapidly diluted, with an associated loss of toxicity. The aquatic life toxicity tests of the type available today should only be used as a screen for potential toxicity. They should not be used as a direct regulatory limit. If toxicity is found, then site specific investigations should be conducted to confirm the information.

Total metals loads may be of concern as a cause of sediment toxicity.

Over longer time frames, cumulative metals discharges are of concern in embayments and possibly fresh water waterbodies because metals may associate with sediment and accumulate in bottom sediments, where they may contribute to sediment toxicity and associated ecosystem impacts. A mass-based approach may be more sensitive to this kind of impact and less sensitive to short term, ambient toxicity effects.

Submitted by U.S. Mail and electronic mail

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RE: Tentative Order No. R9-2007-0002 NPDES, No. CAS0108740
Supplemental Comments

The members of the community of South Laguna represented by the South Laguna Civic Association, established in 1946, recognizes urban runoff is directly the result of dry weather flows. SLCA objects to the continued discharge of urban runoff through Copermitees regional storm drain systems. In doing so, Copermitees knowingly and willfully create and sustain ocean pollution in our coastal village.

California Water Code, Division 7, Sections 13000 & 13529.2 prohibit the "minor discharge of recycled water" and asserts "the use of potable" for irrigation "is a waste". Section 13142.5, moreover, provides specific protections for water quality and the coastal marine environment.

> Section 13142.5: In addition to any other policies established pursuant to this division, the policies of the state with respect to water quality as it relates to the coastal marine environment are that: (a) Wastewater discharges shall be treated to protect present and future beneficial uses, and, where feasible, to restore past beneficial uses of the receiving waters. Highest priority shall be given to improving or eliminating discharges that adversely affect any of the following:
>
> (1) Wetlands, estuaries, and other biologically sensitive sites.
> (2) Areas important for water contact sports.
> (3) Areas that produce shellfish for human consumption.
> (4) Ocean areas subject to massive waste discharge.
>
> Ocean chemistry and mixing processes, marine life conditions, other present or proposed outfalls in the vicinity, and relevant aspects of area wide waste treatment management plans and programs, but not of convenience to the discharger, shall for the purposes of this section, be considered in determining the effects of such discharges. Toxic and hard-to-treat substances should be pretreated at the source if such substances would be incompatible with effective and economical treatment in municipal

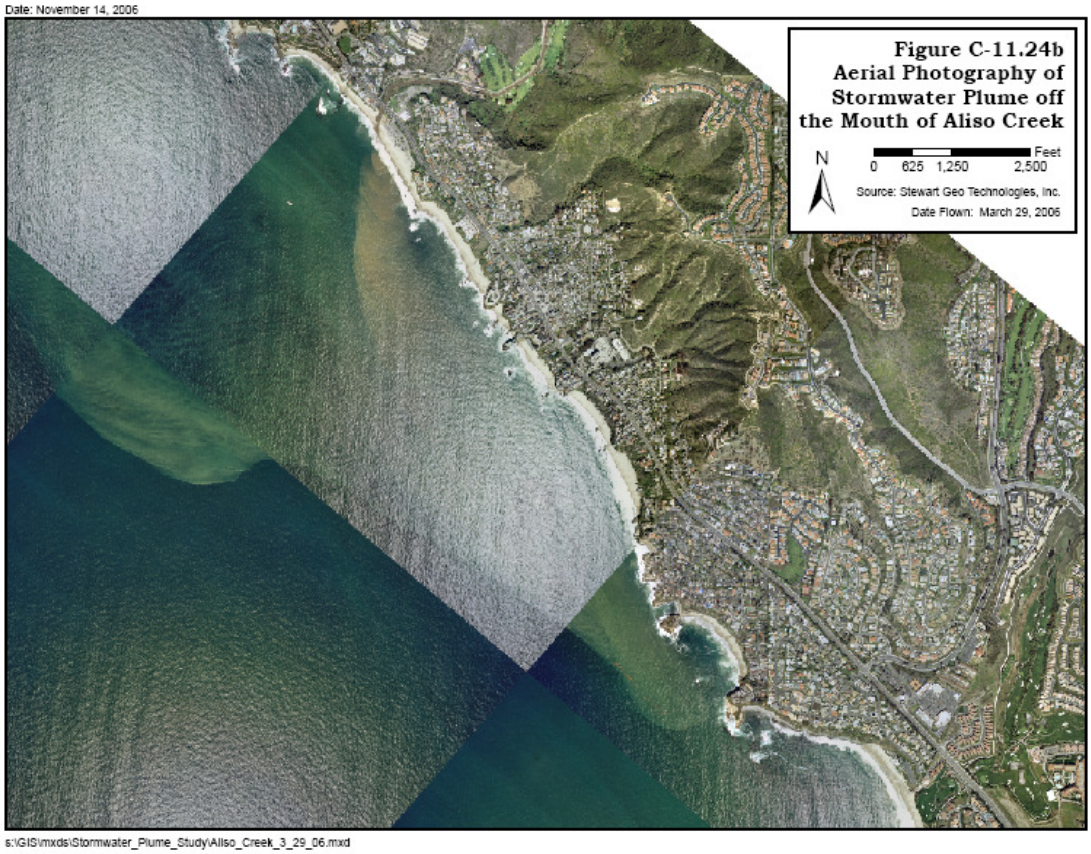
treatment plants."

Clean Water Act, Article 4, Chapter 3, Section 60310(e) of Title 22, California Code of Regulations requires " any irrigation water shall be confined…". "Waste includes sewage and any and all substances associated with human habitation or human origin", such as, urban runoff. The California Constitution (Section 2, Article X) mandates "All waters of the State be put to beneficial use".

Taken together, these laws and regulations provide a framework to challenge the present practices of Copermitees to illegally utilize the MS4 System to discharge irrigation runoff originating from recycled or potable water supplies.

Clearly, the majority of residential development projects and associated commercial and municipal facilities in the Aliso Watershed have seriously defective runoff management programs. Mandated "Best Management Practices" over the past twenty years have made water quality in creek and coastal receiving waters worse. Throughout the watershed, development runoff detention basins and retention basins are improperly maintained and fail to capture dry season flows or storm events as designed, engineered and installed. In this respect, most Development Conditions of Approval are presently non-compliant.

The Cooperies have expended in excess of $20 million over the past 15 years to unsuccessfully address the water pollution problems associated with urban runoff. This enormous waste of limited taxpayer revenues suggests the need for more aggressive regulatory actions by the SDRWQCB to cleanup and abate urban runoff flows in this particular watershed. Indeed, present practices by Copermitees to abuse the MS4 system have led to an exponential increase of toxic flows to coastal receiving waters to peak levels of 6,000,000 million gallons per day from earlier levels of 0 to 1 million gallons per day.



As the above aerial photo illustrates, the Aliso Watershed Urban Runoff Ocean Plume, indicated by the green algae bloom, extends more than one mile offshore into the South Laguna Beach State Marine Park, established in 1968, southerly to Three Arch Bay. Copermitees and the SDRWQCB routinely omit mapping and monitoring of the toxic ocean plume in contravention to State mandates to protect and preserve coastal receiving waters for beneficial use. This program deficiency intentionally masks the full impacts of urban runoff pollution to the detriment of the health and safety of residents of South Laguna and visitors to the area.

Water Quantity: A New Determinant Water Quality Variable

As the science of urban runoff evolves, traditional concerns for water quality are beginning to consider the role of water flow rates or "*water quantity*" in mobilizing, transporting and distributing a variety of pollution constituents. Whether the source of contamination is pet fecal matter, herbicides, pesticides or automotive residues, water quality is influenced by the amount of water present to transport contaminates into natural watershed resources including creek, riparian, wetland, estuarine, tidepool and nearshore coastal habitats.

Water Quality or Water Quantity

Every molecule of water has an affinity to bond. As water becomes mobile urban runoff, it will attempt to bond to harmful herbicide residues, pesticides, fertilizers, automobile exhaust particulate matter and a toxic spectrum of chemicals. When urban runoff reaches natural creeks, streams, and rivers, contaminated water will also bond to soil thereby increasing streambank erosion and coastal sedimentation.

The "sediment transport quotient" of water, which constitutes urban runoff, is satisfied when each molecule of water achieves bonding stasis. More water entering the urban runoff flow rate will require increased bonding opportunities and, in the case of natural settings, more soil erosion leading to distressed if not completely dysfunctional natural habitats.

What are some of the known effects of elevated urban runoff flows? At the extreme, elevated urban runoff flows can literally flood at entire habitat and community. High flows in deforested terrain are responsible for surficial slope failures and deadly mudslides. Among ecologically oriented restoration projects in a semi-arid setting such as the Aliso Watershed, elevated flows contribute to stream bank erosion exposing and undermining the vast root network of ancient oaks and sycamores. This eliminates natural shade cover that would otherwise insure lower creekwater temperatures and, hence, less algae and bacterial growth.

Elevated flows influence the breath, depth and duration of contact between urban runoff and established resources of streambed and stream bank sediment, foliage, wildlife habitats and infrastructure (i.e. bridges, subterranean sewer lines, pipes, etc.).

Hydromodification by development engineers to create and sustain large quantities of summer nuisance flows saturate and soften stream banks. Saturated soil, in turn, promotes development of harmful root fungus to weaken crucial stands of trees and vegetation. When annual storm events do occur, these pre-saturated areas rapidly collapse to accelerate "head-cutting" and carve wider, steeper stream banks to undermine the root structure of protective tree cover.

Ecology Now

The popular use of terms like "ecological" and "ecosystem" to describe restoration efforts has lead to some confusion and inappropriate projects. Ecology "deals with the relationship between living organisms and their environment". By environment, there is an implication of a natural setting rather than an artificially created habitat. Every "natural" environment is water dependent. Too little water will dehydrate resources leading to extinction. Likewise, too much water will literally drown plant and animal life. A credible ecological approach must therefore define the natural water conditions and adjust flows to best replicate ideal, natural flow rates.

In the case of the Aliso Watershed, historical records from 1960 or earlier can be used to quantify monthly flow rates in this definitive semi-arid ecology. From pre-development baseline data, restoration efforts can proceed to calibrate project flow rates to approximate historical flow levels. In some instances, a given restoration effort may seek to mitigate loss of habitat due to development by increasing aquatic resources. A "proximate natural flow rate" to contribute an additional 10% beyond historic creek flows will achieve the twin goals of ecological creek stabilization and mitigation measures to add water resources that promote the welfare of animal

species in the area. A balanced formula of water quantity levels can be monitored to sustain genuine semi-arid ecological restoration.

"New Water" Resources

While wetland restoration projects can successfully metabolize water quality contaminates and even reduce some water quantity flow rates through evapotransporation at a given site, post project flows or "tailing water" will continue to deteriorate sensitive downstream aquatic habitats. Post project flows are gaining credibility in producing relatively clean water but are unable to significantly reduce overall watershed flow rates. Consequently, localized Army Corp of Engineer Section 206 aquatic habitat restoration projects may actually aggravate and contribute to regional, downstream deterioration.

As the previous discussion notes, water quantity impacts observed within a given restoration site often apply to the same features among downstream, post project settings. Accelerated erosion and stream bank destabilization downstream will inevitably impact natural coastal estuaries dependent on low creekwater inputs. Elevated downstream flows are also responsible for transporting sediment and contaminates to beach, tidepool and nearshore settings. Silt deposition functions to seal and "smother" estuary creek sandbeds to inhibit seepage and groundwater recharge while spawning stagnate, bacteria laden ponds. Sedimentation also blankets critical rock substrata along nearshore coastal habitats with adverse consequences for sealife and the ability of kelp to anchor holdfasts necessary for their survival. The downstream and coastal threats to public health and safety coupled with impacts to local economies are obvious.

As elevated urban post project flows accumulate, naturally protective beach sand berms are flooded and breached to discharge silt and sediment into tidepool habitats with devastating consequences. Likewise, post project flows create a "freshwater lense" effect to elevate nearshore seawater temperatures and salinity while feeding toxic algae or "red tide" blooms rendering ancient kelp forests to extinction. For these many reasons, excess post project urban runoff water that will negatively impact and erode downstream settings is recently being reframed as a potential, feasible source for irrigation and groundwater recharging strategies.

Public Policy Implications

Fragmented governance can lead to unintended consequences for downstream aquatic restoration projects. Coastal wetland recovery, a major priority for state and federal agencies, is impossible in the presence of continuous flows of elevated water quantities, i.e., a combination of non-native urban runoff from upstream restoration tailing water mixed with traditional known point sources among stormdrains at inland residential, recreational, municipal and commercial developments.

A genuinely ecological approach will incorporate strategies, techniques and technologies in a "Bioregional Watershed Management Program" (see attached) to scientifically account for all ecological and social ecological variables influencing the overall health of a region. Key to a bioregional program is accurate baseline mapping of flow rates throughout the watershed as well as above, below and within a targeted Section 206 aquatic habitat restoration project site. Likewise, watershed creek flow rates and water quantities at strategic monitoring stations from

the headwaters to golf courses to the beach and ocean urban runoff plume will track and reveal negative aquatic habitat impacts and potential restoration sites.

Applying the efficacious foundations of the recycling paradigm to a bioregional watershed program suggests a number of direct and in-direct benefits to water harvesting strategies. Downstream impacts, as noted, are dramatically reduced when Section 206 post project tailing waters are harvested and redeployed for beneficial reuse opportunities. The costs to polish this new source of local water are mitigated through resale as reclaimed water for irrigation and other uses as mandated by the Porter Cologne Act (e.g., dual plumbing in commercial and municipal buildings for toilets and air conditioners, irrigation, internal and external fire sprinkler systems, local emergency/crisis water supplies, etc.). A four-step water purification process at the Orange County Water District uses microfiltration, reverse osmosis, ultraviolet light and natural filtration. Recent scales of efficiencies fueled by an increased demand for water filtration technologies has created compact fleets of Mobilized Urban Runoff Filtration (MURF) Units capable of 96 hour deployment to capture, harvest, filter and redistribute up to 1 MGD to protect creeks and coasts from urban runoff pollution.

Additional economic benefits are acquired by electrical credits on the regional power grid. As noted by OCWD Board President Philip Anthony, "water purification uses one-half the energy required to bring water here from Northern California" or the Colorado River. Incentives and subsidies from the Metropolitan Water District, grants from the State Water Resources Control Board and numerous coastal conservancy groups and wetland mitigation banks can support initial three-year pilot demonstration projects to launch and refine sustainable, long-term urban runoff harvesting projects across the country and around the world.

Public agencies collaborating with progressive, ecologically oriented engineers, dedicated environmental groups and the emerging water filtration industry are harvesting urban runoff to locally produce reclaimed and even potable water supplies. Decentralized neighborhood cisterns capture storm water and dry weather urban runoff flows to create local sources of water and ease cumulative runoff pressure on the creeks and coast of a given area. Each new project generates significant, verifiable field data to advance bioregional watershed management programs and beneficial reuse opportunities. Regulatory agencies are wise to support these creative initiatives as water quantity assumes a key determinant role in successful water quality endeavors.

Actions by the SDRWQCB must adhere to the precautionary principle in protecting coastal communities from upstream water quality and water quantity impacts arising from the illegal use by Copermitees of MS4 infrastructure to convey dry weather flows to the coast.

<u>Recommended Actions</u>

1. The pattern of negligence and waste characterizing systematic failed measures by Copermitees demands intervention by the SDRWCB to institute Cleanup and Abatement measures aimed at numerical reductions of contaminated flow rates in a prompt, specific timetable at known inland MS4 facilities.

2. Issue citations against Copermitees for creating and perpetuating an attractive

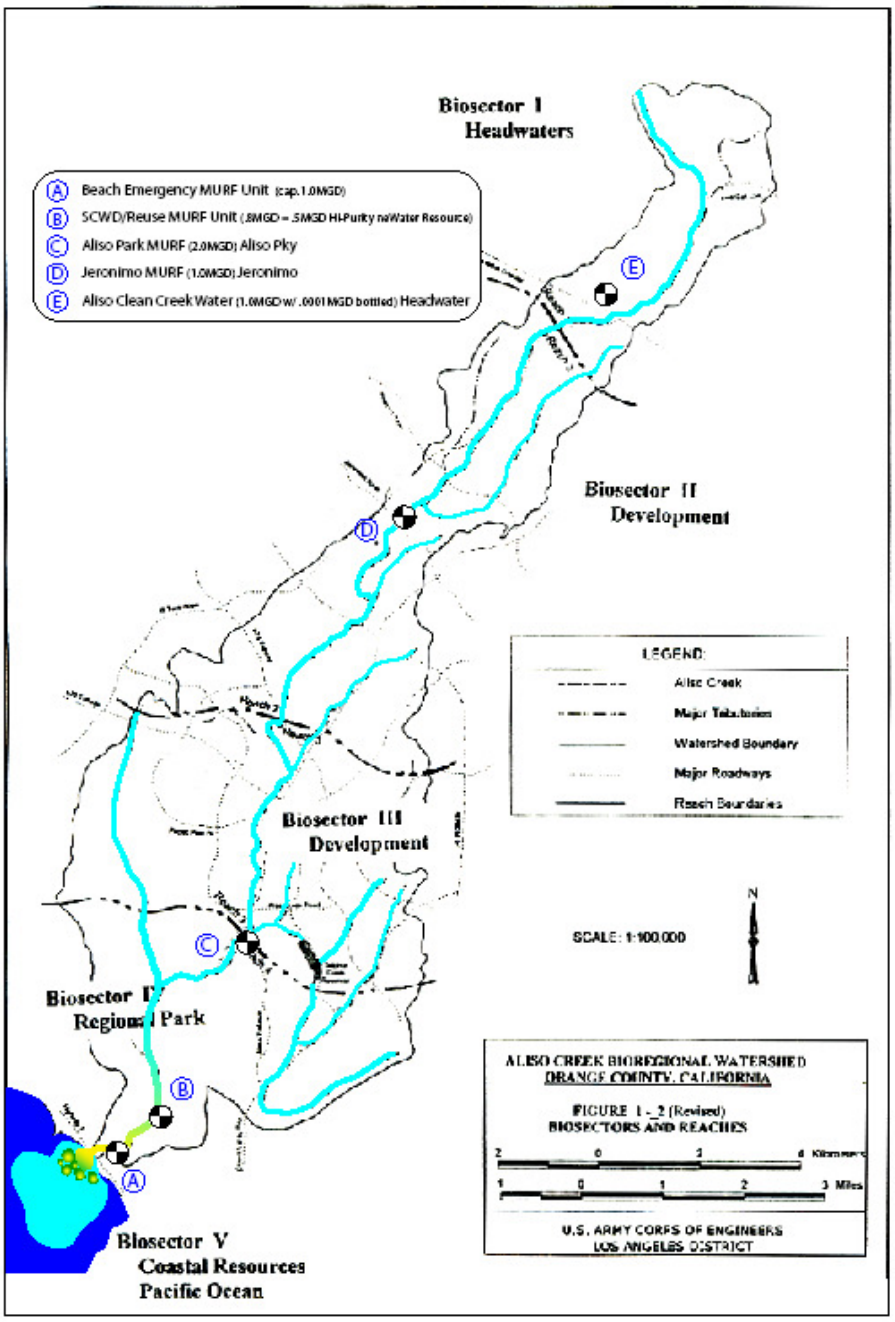
public nuisance by knowingly allowing inland dry weather MS4 discharges to accumulate and pollute a coastal estuarine wetland, Aliso Beach and the South Laguna State Marine Park.

Illegal breaching of natural beach sand berm to create attractive public nuisance

3. SDRWQCB interventions can include:

    - Diversions to inland SOCWA facilities for treatment and reuse as reclaimed water

    - Strategic capture of MS4 discharges for filtration and local beneficial reuse until Copermitees demonstrate measurable results over the next 3 to 10 years capable of removing dry weather urban runoff.



- Fines levied against offending subwatershed, cities, homeowner associations, golf courses and others with elevated dry season discharge rates detected during monitoring activities

- Fines levied against offending inland water districts for failing to control urban runoff (i.e." imported water byproduct") through monitoring, punitive pricing structure and more aggressive recycled water programs

4. During the permit period, Copermitees have failed to achieve measurable reductions in MS4 discharges. SDRWQCB must exercise authority and assume control over the present, clearly defective watershed management programs. Private subcontractor services can be retained with stipulations for numerical reductions of flows and constituents within time certain performance parameters. Funds for such services can be recovered by reallocating funds presently wasted by failed Copermitee watershed management practices.

5. As mitigation for a pattern of failed watershed management programs that flood creek and coastal waters, Copermitees should be directed to restore the Aliso Coastal Estuary Wetlands to 1970 water levels for the reintroduction of the federally listed tidewater goby.

Conclusion

Twenty years and $20 million represents too much time and too much money wasted on mismanagement of dry weather urban runoff pollution contaminating Aliso Creek, Aliso Beach and the South Laguna State Marine Refuge. Water quality laws and regulations are not intended to be implemented for the convenience of Copermitees and their cohorts among the Residential Development and Building Industries. Dry weather MS4 discharges are directly attributable to the collective practices of these entities and constitute an industrial wastewater byproduct.

Arguments to perpetuate and allow ongoing water pollution based upon "Maximum Extent Practicable", while being a scientifically imprecise concept, does not on balance take into account "practical" protection of irreplaceable coastal wetlands and ocean resources unnecessarily flooded by dry weather MS4 discharges. Nor does this argument account for the "unpractical" and costly poisoning of local sea mammals, birds and humans with water borne illnesses.

The San Diego Watershed Treatment System, supervised by the Santa Ana Regional Water Quality Control Board, demonstrates the effectiveness of strategic interventions sited among known inland point sources. Removing harmful dry weather urban runoff water quality constituents and elevated flows is possible through aggressive leadership by Regional Boards.

The South Laguna Civic Association appreciates the efforts by the San Diego Regional Water Quality Control Board to consider the enormous impacts of uncontrolled MS4 dry weather urban runoff pollution before approving a genuinely effective MS4 Storm Drain Permit Program for the Aliso Watershed.

Respectfully submitted,

Michael Beanan, Director
South Laguna Civic Association