

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF FEBRUARY 2, 2012

Prepared on January 10, 2012

ITEM NUMBER: 21

SUBJECT: Revision of Waste Discharge Requirements, Reissuance of National Pollutant Discharge Elimination System Permit No. CA0049981 for the City of Salinas Municipal Storm Water Discharges, Monterey County, Order No. R3-2012-0005

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KEY INFORMATION

Location: Salinas, California

Type of Discharge: Municipal stormwater

Disposal Method: Surface water discharge at multiple locations to the Reclamation Ditch, Gabilan Creek, Natividad Creek, and Santa Rita Creek; and at one location to the Salinas River

Existing Orders: Waste Discharge Requirements Order No. R3-2004-0135

This Action: Adopt Draft Municipal Stormwater Order (Draft Order) No. R3-2012-0005

I. SUMMARY

The City of Salinas (City) owns and operates a municipal separate storm sewer system (MS4). As such, the City is required by the federal Clean Water Act to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges to Waters of the U.S. from its MS4. The Central Coast Water Board initially issued municipal stormwater Order No. 99-087 (NPDES Permit No. CA0049981) to the City. The Central Coast Water Board renewed that Order with changes through adoption of existing Order No. R3-2004-0135 in March, 2005. Existing Order No. R3-2004-0135 was due for renewal in 2010. Staff recommends that the Central Coast Water Board adopt this Draft Order No. R3-2012-0005.

The Draft Order addresses the City's contribution to water quality problems in the Salinas Valley. Urban stormwater is recognized as a leading source of water quality degradation on the Central Coast and throughout California. The City's stormwater discharges have been identified as contributing to water quality impairments. The City's stormwater discharges ultimately flow to Monterey Bay, a federally recognized marine sanctuary of national significance, as well as to Moss Landing Harbor, Elkhorn Slough, and the Salinas River National Wildlife Refuge. The State of California has designated Elkhorn Slough as an ecological reserve; the federal government has included its tidal waters within the Monterey Bay National Marine Sanctuary and established a National Estuarine Research Reserve on its eastern shore.

Additionally, the City is the largest municipality in the Central Coast Region and is actively urbanizing, with plans for significant new development. Typical development patterns and procedures have degraded or threaten to degrade beneficial uses of water. Such development increases runoff flow rate, volume, and duration, hence impacting important watershed processes that support beneficial uses, such as downstream flow regimes, stream channel stability, and groundwater recharge.

The Draft Order is designed to reduce the City's discharge of stormwater pollutants to the maximum extent practicable (MEP), and to protect water quality and beneficial uses, including achievement of water quality standards. The Draft Order incorporates provisions currently contained in existing Order No. R3-2004-0135 and the City's Stormwater Management Plan (SWMP) into a single document.

The City's municipal stormwater discharges have been under permit since 1999. Much of the Draft Order is not new, since the City has been implementing a stormwater program since 1999. Changes to the City's permit, in 2005 and in the Draft Order, constitute incremental development of the City's stormwater program intended to achieve the next step in pollutant reduction and water quality and beneficial use protection. This is consistent with federal stormwater regulations, which require ongoing improvement in municipal stormwater programs until water quality standards are achieved.

This Staff Report discusses the goals, priorities and rationale for the proposed Draft Order. Staff also presents the current water quality and regulatory conditions for the City to provide the context in which staff proposes this Draft Order. The Staff Report also discusses key issues and comments on the Draft Order, changes to the Draft Order in response to comments, and provides a comparison between the existing Order and the Draft Order. The Attachments contain specific information and are referred to at various points throughout the Staff Report. The remainder of the Staff Report is organized as follows:

- II. DISCUSSION
- III. KEY ISSUES AND COMMENTS
- IV. CHANGES TO DRAFT ORDER NO. R3-2012-0005 IN RESPONSE TO COMMENTS
- V. DEVELOPMENT OF DRAFT ORDER NO. R3-2012-0005
- VI. COMPARISON OF DRAFT ORDER NO. R3-2012-0005 AND EXISTING ORDER NO. R3-2004-0135
- VII. STATUS OF COMPLIANCE WITH THE EXISTING ORDER NO. R3-2004-0135
- VIII. RECOMMENDATION
- IX. ATTACHMENTS
 - 1. Map of City of Salinas Permit Coverage area and Receiving Waters (shows the 2009 incorporated area of the City and receiving waters)
 - 2. Comments and Responses
 - a. Key Issues and Comments (the key comments received during the public comment period)
 - b. City of Salinas General Comments Received on Draft Order No. R3-2012-0005 and Staff Response (comments on the Draft Order submitted by the City, with staff responses)
 - c. City of Salinas Specific Draft Order Language Comments Received on Draft Order No. R3-2012-0005 and Staff Response
 - d. City of Salinas Supplemental Comments Received on Draft Order No. R3-2012-0005 and Staff Response
 - e. Public Comments Received on Draft Order No. R3-2012-0005 and Staff Response (comments on the Draft Order submitted by others, with staff responses)
 - 3. Changes to Draft Order No. R3-2012-0005 in Response to Comments (changes made to the Draft Order based on comments from the City and others)
 - 4. Status of Compliance with Existing Order No. R3-2004-0135
 - 5. Comparison of Draft Order No. R3-2012-0005 and existing Order No. R3-2004-0135 (lists and describes the changes in the Draft Order compared to the existing Order)
 - 6. Draft Order No. R3-2012-0005 (the Draft Order in its entirety)
 - 7. Fact Sheet for Draft Order No. R3-2012-0005 (provides background and rationale for the Draft Order Findings and Provisions)

II. DISCUSSION

A. Goals and Priorities

The goals for this Draft Order include:

1. Alignment with the Central Coast Water Board Vision of Healthy Watersheds, specifically the goals of properly managed land, healthy aquatic habitat and clean groundwater;
2. Protection and improvement of receiving water quality and beneficial uses from the impacts of urban stormwater discharges;
3. Commencement of long-term watershed-based stormwater management to prevent permanent impacts to beneficial uses caused by alteration of watershed processes resulting from typical urban development patterns, procedures, and stormwater management;

4. Determination of program effectiveness and achievement of tangible results through a combination of Best Management Practice (BMP) assessment and water quality monitoring; and
5. Increased specificity of Draft Order language and requirements to improve understanding of expectations and Draft Order enforceability.

This Draft Order requires the City of Salinas (City) to reduce the discharge of pollutants in stormwater discharges to the maximum extent practicable (MEP) and to protect water quality and beneficial uses, including achievement of receiving water quality standards. This Draft Order contains effectiveness assessment measures, including water quality monitoring, detailed BMP assessment requirements, and water quality action levels, designed to provide information about the effectiveness of the City's efforts to reduce pollutant discharges, protect water quality and beneficial uses, and achieve receiving water quality standards. In addition, this Draft Order contains requirements to identify dominant watershed processes affected by stormwater management and develop control measures to protect and restore those processes to prevent degradation of beneficial uses. Assessing watershed processes will inform development and stormwater management decisions, and identify measures for protecting and restoring watershed processes that the City will implement in subsequent permit terms to comply with water quality standards and protect beneficial uses.

B. Setting – The City of Salinas

Physical Situation

[Note: The following Physical Situation discussion is a summary of Sections IV.A.1 and IV.A.4.a of the Fact Sheet for Draft Order No. R3-2012-0005 (Attachment 7 to this Staff Report). See Sections IV.A.1 and IV.A.4.a of the Fact Sheet for Draft Order No. R3-2012-0005 for a more detailed discussion of the City's physical setting.]

See Map of the City's Permit Coverage Area and Receiving Waters (Attachment 1 to this Staff Report). The City is situated in northern Salinas Valley in Monterey County, approximately ten miles east of the Pacific Ocean and adjacent to the Salinas River. Stormwater runoff is generated from various land uses in the Permit Coverage Area and discharges into the Reclamation Ditch and the Salinas River. Four major creeks and several minor tributaries pass through the Salinas area and receive stormwater discharges from the Permit Coverage Area northeast of and adjacent to Highway 101.

Urban development occurs primarily in a corridor along the Salinas River. The City is the largest community in the Salinas River Watershed, with a population of 145,032 in an area of 23.2 square miles. Approximately 50 percent of the population in the Salinas River Valley resides in the City. The City is located in the alluvial plain of the Salinas River, and has been built partially on drained marshland associated with historic Carr Lake. Therefore the City has mixed soils, some of which possess limited permeability.

Current non-urban land use in the vicinity of the City is primarily agricultural. As a result, agriculture is a significant source of pollutants and receiving water discharges in the watershed. Agricultural sources of pollution that originate in stormwater runoff from agricultural lands outside the Permit Coverage Area are also conveyed into the Permit Coverage Area from upstream through the Reclamation Ditch and the streams that run from upstream and then through the City. This Draft Order recognizes that the City is not the only source of pollutants to

waters, and the Central Coast Water Board is actively regulating agricultural lands, other municipalities, and other activities and discharges to hold all dischargers responsible for their contribution to water quality conditions.

Water Quality Issues

[Note: The following Water Quality Issues discussion is a summary of Sections IV.A.3-4 of the Fact Sheet for Draft Order No. R3-2012-0005 (Attachment 7 to this Staff Report). See Sections IV.A.3-4 of the Fact Sheet for Draft Order No. R3-2012-0005 for a more detailed discussion of water quality issues in the City and its watersheds.]

Data from the Central Coast Ambient Monitoring Program (CCAMP) indicate that stormwater discharges from the Permit Coverage Area are or may be significant sources of the following pollutants causing water quality impairment in the Reclamation Ditch: nitrate/nitrite as N, ammonia as N (total and unionized), orthophosphate as P, fecal coliform, total coliform, E. coli, oxygen (dissolved and saturation), chloride, and sodium. Stormwater discharges are or may also be significant sources of nitrate/nitrite as N, orthophosphate as P, ammonia as N (total), chlorophyll a, fecal coliform, total coliform, E. coli, total dissolved solids, boron (dissolved), chloride, and Sodium in the Salinas River. [For additional information on these topics, see discussions for Findings 24 and 69 in Section XI of the Fact Sheet for Draft Order No. R3-2012-0005 (Attachment 7 of this Staff Report).]

As delineated on the Clean Water Act Section 303(d) List of Impaired Waters, 2010, the waters receiving discharges from the City's MS4 are specifically impaired for various pollutants, including nitrate, ammonia (unionized), enterococcus, E. coli, fecal coliform, pH, temperature, sodium, chloride, copper, PCBs, total dissolved solids, low dissolved oxygen, organics, pesticides, Toxaphene, sediment toxicity, and turbidity. The 303(d) list indicates urban runoff as a likely source for impairments by the following pollutants: ammonia (unionized), fecal coliform, E. coli, enterococcus, low dissolved oxygen, nitrate, sediment toxicity, turbidity, pH, temperature, chlorpyrifos, copper, diazinon, priority organics, and pesticides. In addition, the City has been identified as responsible party in the Lower Salinas River Fecal Coliform TMDL.

Trash is also a persistent pollutant in the City's MS4 and the receiving waters, particularly in the Reclamation Ditch and at the discharge from the pump station to the Salinas River. Central Coast Ambient Monitoring Program (CCAMP) staff has documented trash deposits in these areas in all seasons. [For additional information on this topic, see discussions for Findings 65 and 66 in Section XI of the Fact Sheet for Draft Order No. R3-2012-0005 (Attachment 7 of this Staff Report).]

The City recently annexed a large area of land, commonly called the Future Growth Area. It consists of approximately 2,388 gross acres and is planned for development, including up to 11,485 total dwelling units and 3.992 million square feet of commercial/retail/mixed use and public/semi-public uses. Urban development of this magnitude has the potential to cause changes in stormwater runoff conditions that can affect watershed processes, resulting in increased impacts to beneficial uses in receiving waters if adequate stormwater controls are not applied.

Agriculture is a significant source of pollutants and receiving water degradation in waters which receive discharges from the City's municipal separate storm sewer system (MS4). Agricultural runoff from outside the Permit Coverage Area is conveyed into the Permit Coverage Area from

upstream through the Reclamation Ditch and the streams that run from upstream and then through the City. Vehicles from agricultural facilities track sediment onto streets in the Permit Coverage Area. Agricultural processing within the Permit coverage has the potential for pollutant and illicit discharges that are characteristic of agricultural processing activities.

III. KEY ISSUES AND COMMENTS

A. Explanation of Comments and Responses

Central Coast Water Board staff received comments on the Draft Order from twelve parties in addition to the City, and these comments were provided in a variety of forms, including emails, letters, and an edited version of the entire Draft Order with comments interjected frequently throughout. To address the variety of comment forms and simplify reporting on the comments and responses, Central Coast Water Board staff structured comment responses in this Staff Report in the following ways:

- Identified the key issues in the City's comments and provided comprehensive responses to them in a summary document (Issues are summarized and listed below and responses are in Key Issues and Comments (Attachment 2.a to this Staff Report)).
- Used cross references extensively in its responses to City comments. The cross references link to separate comments, contained in separate comment documents. These cross references reduce the length of the documents and the amount of repetition in responses to similar comments, and guide readers to responses that include additional information relevant to the comment at hand. To aid readers in locating information that has been cross-referenced, each response has been individually numbered. Each cross-reference includes the specific document name and response number that is being referenced.
- Populated the cross references with the relevant text being referenced in the first comment response document, City of Salinas General Comments Received on Draft Order No. R3-2012-0005 and Staff Response (Attachment 2.b to this Staff Report). As a result, it is possible to read City of Salinas General Comments Received on Draft Order No. R3-2012-0005 and Staff Response (Attachment 2.b to this Staff Report) without needing to refer to any other comment response document.

Central Coast Water Board staff received comments from the City in several forms:

- Email received on November 3, 2011;
- Email received on November 18, 2011;
- Email received on November 30, 2011, in response to Central Coast Water Board staff questions related to earlier City comments on the Draft Order;
- Draft Order in track changes format with comments inserted throughout the Draft Order text [including a list of comments on the Monitoring and Reporting Program in Attachment D of Draft Order No. R3-2012-0005 (Attachment 6 to this Staff Report)];
- Additional set of comments from the City's consultant referred to as "supplemental" comments.

The City's comments were numerous, prepared by multiple people, repetitive, and similar comments appeared multiple times in multiple locations. As a result, the comment response documents are lengthy because Central Coast Water Board staff attempted to reply comprehensively.

Central Coast Water Board staff grouped all the City's email comments and their responses in a single document. Central Coast Water Board staff added the City's comments on the Monitoring and Reporting Program in Attachment D of Draft Order No. R3-2012-0005 (Attachment 6 to this Staff Report) to this single document as well. All of these comments and responses are included in the City of Salinas General Comments Received on Draft Order No. R3-2012-0005 and Staff Responses (Attachment 2.b to this Staff Report).

For the City's edits to the Draft Order in track changes format, with the City's comments inserted throughout the Draft Order's text, Central Coast Water Board staff inserted responses, immediately following the City's edits comments, within the text submitted by the City. These comments and responses are included in the City of Salinas Specific Language Comments Received on Draft Order No. R3-2012-0005 and Staff Response (Attachment 2.c to this Staff Report).

The City also submitted, under the same cover as the Draft Order in track changes format, a separate supplemental general comments document, prepared by the City's consultant at the request of, and in coordination with, City staff. Central Coast Water Board staff numbered these comments and included them, and responses to them, in City of Salinas Supplemental Comments Received on Draft Order No. R3-2012-0005 and Staff Response (Attachment 2.d to this Staff Report).

Central Coast Water Board staff grouped the comments in letters from members of the public together into a single document, Public Comments Received on Draft Order No. R3-2012-0005 and Staff Response (Attachment 2.e to this Staff Report). In addition to the City, the following parties submitted comments on the Draft Order:

- Robin Lee
- Norm Groot , Executive Director, Monterey County Farm Bureau
- Bobby Latino, Planning Technician, City of Salinas
- Paul Michel, Superintendent, Monterey Bay National Marine Sanctuary
- David Smith, Manager USEPA NPDES Permits Office
- J. Michael Wadsworth Architecture & Planning
- Michael L. Waxer, President, American Institute of Architects, Monterey Bay Chapter
- Tom Carvey, President/CEO, Salinas Valley Chamber of Commerce
- Lynne Steele
- Irma Gowin
- Brian Finegan, Attorney at Law, Salinas Future Growth Area Owners/Developers
- Bobby Latino, Planning Technician, City of Salinas
- Gordon Avery

B. Key Issues and Comments Discussion

The key issues raised in the comments include:

- The implementation details of the Stormwater Management Plan should not be integrated into the Draft Order
- The extent of the City's MS4 and the City's responsibility for discharges the City does not control needs clarification
- The City's responsibility and authority related to agricultural discharges needs clarification
- The Draft Order is too prescriptive

- The Draft Order does not provide enough specificity or information
- The Draft Order creates an unfunded mandate
- The City has not had time to review and does not understand the requirements
- The standard of “maximum extent practicable” is too broad and makes the City vulnerable to on-going changes to management practices and costs of implementing the practices
- The cost of implementation is too high
- The timeframes are inadequate and too many things are required too soon
- The Draft Order creates an unlevel playing field with neighboring smaller communities subject to different stormwater requirements
- The new development and redevelopment standards are unreasonable
- The requirements for information management systems are unreasonable
- The Executive Officer authority to modify the Draft Order or stormwater management plan is too broad

Key Issues and Comments (Attachment 2.a to this Staff Report) provides 1) a summary of the comments that raise the above key issues, and 2) comprehensive Central Coast Water Board staff responses to each key issue raised.

IV. CHANGES TO DRAFT ORDER NO. R3-2012-0005 IN RESPONSE TO COMMENTS

On November 3, 2011, the City and other interested parties submitted comments on the Draft Order. Central Coast Water Board staff has reviewed all the submitted comments and incorporated changes into Fact Sheet for Draft Order No. R3-2012-0005 where appropriate. Central Coast Water Board staff modified the Draft Order in response to comments in places where staff found that the suggested modification would provide clarity to the requirements or improve the effectiveness of the Draft Order. Also, in response to overall comments about the workload associated with the Draft Order, Central Coast Water Board staff lessened the magnitude of some requirements or provided more time. Central Coast Water Board staff has also provided detailed responses to the City’s and other interested parties’ comments and questions in the responses to comments. See the Key Issues and Comments document (Attachment 2.a of this Staff Report) for more specific information on comments and responses.

Following is a summary list of significant modifications made to the Draft Order in response to comments. A more detailed list is contained in Changes to Draft Order No. R3-2012-0005 in Response to Comments (Attachment 3 to this Staff Report). In addition, Draft Order R3-2012-0005 (Attachment 6 to this Staff Report) shows changes made to the Draft Order in redline and strikeout format.

- Extended some timelines
- Provided the City with more flexibility in some places
- Modified some definitions
- Added a requirement to make documents submitted to the Central Coast Water Board available to the public
- Replaced ‘Salinas Reclamation Ditch’ with ‘Reclamation Ditch’
- Removed requirements related to drainage structures maintained by others
- Clarified the City’s responsibility to ensure or prevent specific outcomes
- Incorporated the Lower Salinas River Watershed Fecal Coliform TMDL

- Clarified Discharge Prohibitions, Effluent Limitations, and Receiving Water Limitations
- Added irrigation water, individual residential car washing, and landscape irrigation to the list of allowable non-stormwater discharges
- Modified requirements for the management of incidental runoff
- Modified items required to be included in the information management system
- Modified municipal inventory requirements
- Modified maintenance requirements for catch basins
- Modified street sweeping requirements
- Modified municipal inspection requirements
- Modified commercial and industrial inventory requirements
- Modified minimum commercial and industrial BMP requirements
- Modified commercial and industrial inspection requirements
- Removed requirement to train staff not employed by the City
- Modified illicit discharge detection and elimination inventory and mapping requirements
- Modified requirements for storm drain inlet signage
- Added requirement to develop a plan to reduce incidental runoff
- Modified source control BMPs requirements for new development and redevelopment
- Clarified the role of the Central Coast Water Board Joint Effort for Hydromodification Control regarding new development and redevelopment
- Modified treatment BMP requirements for new development and redevelopment
- Clarified the City's responsibility for construction sites in the Permit Coverage Area
- Clarified the riparian habitat protection requirements
- Modified requirements for items to be included on the California Environmental Quality Act checklist
- Modified retrofit requirements
- Modified lists of facilities covered by trash reduction requirements
- Modified trash reduction ordinance requirements
- Modified monitoring requirements
- Reduced some monitoring requirements
- Modified Action Level requirements
- Modified Trash Assessment requirements
- Clarified objectives of watershed characterization requirements

V. DEVELOPMENT OF DRAFT ORDER No. R3-2012-0005

[Note: The following Development of Draft Order No. R3-2012-0005 discussion is a summary of Sections IV.C-D of the Fact Sheet for Draft Order No. R3-2012-0005 (Attachment 7 to this Staff Report). See Sections IV.C-D of the Fact Sheet for Draft Order No. R3-2012-0005 for a more detailed discussion of the development of the Draft Order.]

A. Background

The City's stormwater discharges have been permitted for over ten years and subject to two Orders. During these previous two permitting cycles, the City developed many of the implementation details and incorporated them into its Stormwater Management Plan (SWMP), which was then submitted to the Central Coast Water Board for review and approval. The Orders themselves were relatively simple documents that referred to the SWMPs for

implementation details. The Draft Order now includes many of the implementation details previously housed in the SWMP.

The City is identified by federal regulations as a Phase I municipality (those with populations of at least 100,000). State and federal law require more intensive stormwater management in Phase I municipalities. The City is the only Phase I municipality in the Central Coast Region. Requirements contained in this Draft Order are consistent with federal regulations for Phase I municipalities and with other Phase I permits throughout California, and are more intensive than those applied to other municipalities in the Salinas Valley at this time. Much of the Draft Order is not new, since the City has been implementing a stormwater program since 1999. Changes to the City's permit, in 2005 and in the Draft Order, constitute incremental development of the City's stormwater program intended to achieve the next step in pollutant reduction and water quality and beneficial use protection. This is consistent with federal stormwater regulations, which require ongoing improvement in municipal stormwater programs until water quality standards are achieved.

B. Development of the Draft Order

The Draft Order represents the next iterative step in stormwater requirements and includes increased specificity; a blend of water quality monitoring and BMP assessment for evaluating program effectiveness; and commencement of a watershed-based approach to stormwater management. This iterative advance, beyond the current reliance on implementation of BMPs as presumptive evidence of compliance, is a reasonable and necessary step to achieve compliance with water quality standards and protection of beneficial uses over time.

Increased Specificity

In previous Orders, the majority of the detailed actions to be implemented by the City were contained in the SWMP and the SWDS, which were separate from the Order and incorporated by reference. By contrast, this Draft Order incorporates many of the details of the SWMP, including specific compliance milestones, directly into the language of the Draft Order. The Draft Order includes more specificity in the requirements to develop, perform, and track stormwater management actions at specific levels of implementation, and to determine if the effectiveness of each action is sufficient to achieve compliance with the Draft Order.

The Draft Order includes requirements for the following components:

- Municipal Maintenance;
- Commercial and Industrial;
- Residential;
- Illicit Discharge Detection and Elimination;
- New Development and Redevelopment;
- Construction Site Management
- Development Planning and Stormwater Retrofits;
- Public Education and Public Involvement;
- Trash Load Reduction;
- Total Maximum Daily Loads (TMDLs);
- Monitoring, Effectiveness Assessment, and Program Improvement; and
- Watershed Characterization.

The City is required to update its SWMP and to submit specific components of the SWMP to the Central Coast Water Board Executive Officer for approval. In contrast with previous Orders, the entire SWMP is not required to be submitted for approval. This is because Central Coast Water Board staff improved the specificity of Draft Order language to provide the City with clear direction on necessary changes to the BMPs described in the SWMP. Section XII.D of the Fact Sheet for Draft Order No. R3-2012-0005 (Attachment 7 to this Staff Report) provides further discussion of the need for a SWMP.

The increased specificity of Draft Order language addresses several problems that accompanied implementation of the existing Order No. R3-2004-0135. The previous approach, whereby Order language directed the City to first develop and incorporate BMPs into a SWMP, then to submit the SWMP to the Central Coast Water Board for approval, required two distinct procedural efforts by both the City and Central Coast Water Board staff. As a result, the effort and time expended on procedural matters associated with approving the SWMP (and SWDS) were cumbersome and hindered program implementation. For example, approval of some aspects of the SWMP required multiple Central Coast Water Board meetings. By increasing specificity in the language describing what is required and how it is measured, this Draft Order limits the resources expended on SWMP development and approval.

Additionally, language in the existing Order No. R3-2004-0135 provided only limited performance criteria for BMPs. While selecting appropriate performance criteria (e.g., measurable goals, numeric targets, and action levels) remains a significant challenge in stormwater permitting, discrete information on outcomes is necessary to evaluate compliance with a technology-based standard such as MEP. In the absence of information about the degree and effectiveness of implementation, it is not reasonable to continue assuming compliance from implementation of management measures. The existing Order No. R3-2004-0135 thus presented challenges in demonstrating compliance to both the City and Central Coast Water Board staff.

To address this problem, this Draft Order introduces significant improvements in requiring the use of performance criteria and provides specific performance measures in the language itself. Though the majority of this language is in Draft Order Provision P – Monitoring, Effectiveness Assessment, and Program Improvement [See Draft Order No. R3-2012-0005 (Attachment 6 for this Staff Report)], Central Coast Water Board staff included more specific language on what is required and how to demonstrate implementation in all other Draft Order Provisions. Important improvements in specifying what to report will also greatly assist compliance determination.

Evaluating Effectiveness- Water Quality Monitoring and BMP Assessment

This Draft Order is an iterative step beyond the existing Order No. R3-2004-0135 in that it establishes a balanced approach to assessing stormwater management program effectiveness at achieving tangible results. Conventional effectiveness assessment has relied on water quality data obtained through receiving water monitoring to determine the effectiveness of stormwater management actions at protecting water quality. However, the link between stormwater management actions and receiving water quality is not fully understood. As a result, municipal stormwater program managers conduct actions they believe to be effective, but are challenged to demonstrate tangible results of these actions in terms of water quality improvements. Without quantitative information about the effectiveness of stormwater management actions, program managers have not been able to demonstrate the effectiveness of stormwater management efforts, invest resources in activities known to be most effective, or

identify modifications that will improve program effectiveness. Nor have program managers been able to justify reductions in effort or expenditure on the basis of effectiveness evaluations (i.e., reducing effort and/or expenditure on activities shown to be ineffective).

The City has experienced the same challenges in the management of its own stormwater program. To date, the City has assessed the effectiveness of its stormwater management actions through water quality monitoring, verification that the City has completed required activities, and simple accounting of the results of some stormwater management actions. Monitoring data has identified some consistent pollutants in urban discharges and receiving waters, but the monitoring data has been inadequate for discerning the effectiveness of the City's program or improvements in receiving water quality conditions.¹ Exceedances of water quality standards at both background (upstream) and receiving water (downstream) sites has made it difficult to reliably discern the City's contribution to receiving water quality problems, compared to contributions from other water quality inputs.² A corollary of this difficulty is that the monitoring data has also not been able to show improvements in receiving water quality resulting from the City's stormwater management actions. The City's verification and accounting assessments have also not provided sufficient information about the effectiveness of the City's stormwater management actions at reducing pollutants in stormwater discharges and protecting water quality [For additional information about this topic, see discussion for Finding 70 in Section XI of the Fact Sheet for Draft Order No. R3-2012-0005 (Attachment 7 of this Staff Report).] Without reliable information on the link between stormwater management activities and receiving water quality, the City has not been able to identify needed BMP modifications, program deficiencies, priorities for activities or expenditures, or justify reductions in effort or expenditure on activities that have been demonstrated to be ineffective or unnecessary.

The Draft Order addresses the challenge of demonstrating tangible results and the incomplete understanding of the links between stormwater management actions and receiving water quality through a blend of detailed BMP effectiveness assessment measures, stormwater discharge action levels, and long-term water quality trend monitoring of stormwater discharges and receiving waters. The Draft Order incorporates this range of effectiveness assessment methodologies for several reasons. First, since different BMPs lend themselves to different assessment methodologies, using a range of methodologies enables the City to apply the appropriate methodology to different BMPs at the appropriate scale. Second, the effectiveness assessment requirements allow for quantitative measurement of a wider range of BMPs. Third, the range of methodologies will provide more information about the links between BMPs and receiving water quality that will be useful in designing requirements in subsequent Orders.

The Draft Order establishes detailed effectiveness measures for specific BMPs that are designed to quantify the results of stormwater management activities, assess their effectiveness at reducing pollutant loads, and identify modifications that can improve their effectiveness. The Draft Order emphasizes measurement of pollutant load reduction because of the link between pollutant load reduction and water quality protection. The Draft Order assumes that reducing pollutant loads has a positive effect on receiving water quality, and that quantitative demonstration of pollutant load reductions is a demonstration of water quality protection. [See

¹ City of Salinas. *2009-2010 Annual Report: Urban Watershed Management Program. Permit No: CA0049981, Order: R3-2004-0135*, 24 February 2011, p. 9-31.

² In its 2009-2010 Annual Report, the City states: "Given the occurrence of exceedances of water quality objectives at background sites that confound the interpretation of impacts from Salinas stormwater at receiving water sites, few conclusions can be drawn regarding the influence of Salinas stormwater discharges on receiving waters." *ibid.*

Provision P.1 of Draft Order No. R3-2012-0005 (Attachment 6 to this Staff Report) and discussion for Provision P in Section XII.P of the Fact Sheet for Draft Order No. R3-2012-0005 (Attachment 7 of this Staff Report) for requirements and additional information related to BMP effectiveness measures.]

The blend of effectiveness assessment methodologies contained in the Draft Order is designed to obtain the needed information in a manner that is efficient in terms of both effort and cost. Detailed BMP effectiveness measures have been included on the basis of their capacity to provide quantitative information simply and inexpensively. Monitoring sites have been limited to the number needed for obtaining needed information. Not only does this minimal and results-based approach allow the City to avoid expending funds and effort unnecessarily, it also allows the City to focus effort and funds on stormwater activities identified as most effective and/or most needed.

Watershed-Based Approach to Stormwater Management

The Draft Order includes requirements to begin the long-term process of watershed-based stormwater management. Watershed-based stormwater management is an iterative step forward and is necessary to more realistically assure compliance with water quality standards and protection of beneficial uses over time. Watershed-based stormwater management is necessary to prevent and restore permanent adverse impacts to receiving waters caused by alteration of watershed processes resulting from conventional stormwater management and development planning. These impacts are difficult, if not impossible, to reverse once they occur. The Draft Order requires the initial step in this process, watershed characterization.

The process of watershed characterization is the identification and understanding of receiving water, urban infrastructure, and landscape conditions that affect how stormwater runoff interacts with watershed functions. The purpose of the watershed characterization is to help guide stormwater management decisions. The Draft Order focuses on characterization of the most basic, useful, and important watershed processes relevant to stormwater.

Watershed processes include the following:

- Surface Runoff – Runoff volume, rate, duration, and surface storage;
- Groundwater Recharge and Discharge – Infiltration to support baseflow and interflow to wetlands and surface waters, and deep vertical infiltration to groundwater;
- Sediment Processes – Hillslope (rilling, gulying, sheetwash, creep, and other mass movements); riparian (bank erosion); and channel (fluvial transport and deposition) processes;
- Chemical Processes – Chemical attenuation through sequestration, degradation, and rate of chemical delivery to receiving waters; and
- Evapotranspiration – The return of water to the atmosphere from the soil and soil surface by direct drying and the respiration of plants.

The Draft Order requires the initial steps for commencing a watershed-based approach in its requirements for Watershed Characterization in Provision Q of Draft Order No. R3-2012-0005 (Attachment 6 to this Staff Report). By delineating the Urban Subwatersheds throughout the Permit Coverage Area, then collecting and managing information as indicated in all the Draft Order Provisions on the basis of these subwatersheds, the City will establish the foundation for watershed-based stormwater management.

Finally, at the conclusion of the term of the Draft Order, the City is required to conduct an analysis to determine necessary improvements to its stormwater management and development planning so that future stormwater management decisions and development practices protect and restore watershed processes and beneficial uses. The City will rate its Urban Subwatersheds relative to the risk of impact and alteration of watershed processes, and then develop measurable goals for improving program implementation and effectiveness. These program improvements will be the foundation of a watershed-based approach to stormwater management in the subsequent Order.

“Stormwater cannot be adequately managed on a piecemeal basis due to the complexity of both the hydrologic and pollutant processes and their effect on habitat and stream quality.”

With this statement and many that follow, a recent report on managing stormwater in the United States prepared by the National Research Council (NRC) for the United States Environmental Protection Agency (USEPA),³ argues for a comprehensive strategy to address stormwater impacts at a variety of scales and to curb the development patterns that create excess imperviousness and other anthropogenic disturbances to watershed processes. Beyond the site-level, stormwater impacts are linked to the overall pattern of development in a watershed, including its location and form. The NRC report promotes a watershed-based approach to stormwater management to move beyond the piecemeal approach and address both site and watershed scales.

Figure 1 in Section IV.D.3 of the Fact Sheet for Draft Order No. R3-2012-0005 (Attachment 7 of this Staff Report) illustrates how this Draft Order’s components fit together and affect and inform one another to result in a program that achieves watershed-based stormwater management objectives more effectively over time. The diagram demonstrates the iterative nature of this Draft Order and a holistic approach to stormwater management. Each diagram component is identified numerically and described in detail in text following the figure.

VI. COMPARISON OF DRAFT ORDER NO. R3-2012-0005 AND EXISTING ORDER NO. R3-2004-0135

Many of the requirements of the proposed Draft Order are consistent with the previous existing Order No. 2004-0135. The SWMP and the SWDS are required by, and are an enforceable part of, existing Order No. R3-2004-0135. As a result, requirements contained in the SWMP and the SWDS are part of existing Order R3-2004-0135 and are included as such in the comparison of Draft Order No. R3-2012-0005 with existing Order No. R3-2004-0135.

The Comparison of Draft Order No. R3-2012-0005 and existing Order No. R3-2004-0135 (Attachment 5 of this Staff Report) lists and describes the changes in the Draft Order compared to the existing Order, using the following categories:

- Requirements in existing Order R3-2004-0135 that have been reduced or eliminated in the Draft Order;
- New requirements in the Draft Order that are not contained in existing Order No. R3-2004-0135;

³ *Urban Stormwater Management in the United States*. Washington, D.C.: National Research Council, National Academies Press, 2008. Web. 16 August 2011. p. 8. <www.epa.gov/npdes/pubs/nrc_stormwaterreport.pdf>.

- Requirements in existing Order R3-2004-0135 that have been modified in the Draft Order; and
- Requirements in the Draft Order that are similar to requirements contained in existing Order No. R3-2004-0135.

VII. STATUS OF COMPLIANCE WITH EXISTING ORDER NO. R3-2004-0135

During 2006 through 2008, Central Coast Water Board staff issued several Notices of Violation of existing Order No. R3-2004-0135 to the City and provided the Central Coast Water Board with a series of status reports about the violations.

Central Coast Water Board staff audited the City's compliance with existing Order No. R3-2004-0135 in 2011. In 2003, USEPA and Central Coast Water Board staff audited the City's compliance with its first Order No. 99-087. In addition, USEPA performed stormwater inspections of industrial facilities during Salinas 2007 and 2010.

Central Coast Water Board staff used the information gathered during the audits and inspections, the City's compliance history, and the challenges the Central Coast Water Board has had determining compliance with other municipal stormwater permits, conducted through reviews of stormwater program annual reports, inspections and audits in writing the Draft Order. Status of Compliance with Existing Order (Attachment 4 of this Staff Report) describes the City's compliance history in more detail.

VIII. RECOMMENDATION

Draft Order No. R3-2012-0135 requires the City reduce the discharge of pollutants in stormwater discharges to the MEP and to protect water quality and beneficial uses, including achievement of water quality standards. The Draft Order addresses the City's contribution to water quality problems in the Salinas Valley by establishing provisions designed to reduce pollutants, achieve water quality standards, protect and restore watershed processes, and demonstrate tangible results in water quality improvement. The Draft Order contains stormwater management requirements related to municipal facilities and operations, residential areas, construction activities, commercial and industrial facilities and operations, and new development. The Draft Order also requires the first steps of watershed-based stormwater management.

The Draft Order represents the next iterative step in stormwater requirements for the City to achieve the MEP standard and receiving water quality standards. Much of the Draft Order is not new, since the City has been implementing a stormwater program since 1999. Changes in the Draft Order constitute incremental development of the City's stormwater program intended to achieve the next step in pollutant reduction and water quality and beneficial use protection.

Staff recommends that the Central Coast Water Board adopt Draft Order No. R3-2012-0135.

IX. ATTACHMENTS

1. Map of City of Salinas Permit Coverage Area and Receiving Waters
2. Comments and Responses

- a. Key Issues and Comments
 - b. City of Salinas General Comments Received on Draft Order No. R3-2012-0005 and Staff Response
 - c. City of Salinas Specific Draft Order Language Comments Received on Draft Order No. R3-2012-0005 and Staff Response
 - d. City of Salinas Supplemental Comments Received on Draft Order No. R3-2012-0005 and Staff Response
 - e. Public Comments Received on Draft Order No. R3-2012-0005 and Staff Response
3. Changes to Draft Order No. R3-2012-0005 in Response to Comments
 4. Status of Compliance with Existing Order No. R3-2004-0135
 5. Comparison of Draft Order No. R3-2012-0005 and existing Order No. R3-2004-0135
 6. Draft Order No. R3-2012-0005, including the following attachments:
 - Attachment A - Acronyms
 - Attachment B - Definitions
 - Attachment C - Trash Generation Rates
 - Attachment D - Monitoring and Reporting Program
 - Attachment E - LID Design Steps
 - Attachment F - Salinas Existing Urban Subwatersheds
 - Attachment G - Inspection Ratings
 - Attachment H - Qualifying Retrofit Projects
 - Attachment I - Standard Provisions
 - Attachment J - Modifications to Stormwater Development Standards: Initial Flow Control Criteria
 - Attachment K - Summary of milestones/deadlines
 7. Fact Sheet for Draft Order No. R3-2012-0005

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