

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

STAFF REPORT FOR REGULAR MEETING OF JULY 12, 2013
Prepared on June 3, 2013

ITEM NUMBER: 18

SUBJECT: Draft Resolution R3-2013-0032

STAFF CONTACT: Dominic Roques 805/542-4780 or droques@waterboards.ca.gov

KEY INFORMATION:

Location: Multiple Municipalities throughout the Central Coast Region
Type of Discharge: Municipal stormwater
Disposal Method: Discharge to surface and groundwater
Existing Orders: NPDES General Permit for the Discharge of Storm Water from Small
Municipal Separate Storm Sewer Systems, Order No. 2013-0001

THIS ACTION: Approve Draft Resolution R3-2013-0032

I. SUMMARY

Water Board staff recommends re-approval of the Post-Construction Stormwater Management Requirements for Development Projects (Post-Construction Requirements) originally approved by the Central Coast Water Board on September 6, 2012. Water Board staff has modified the Post-Construction Requirements and these changes are proposed in Draft Resolution R3-2013-0032, which re-approves the Post-Construction Requirements.

The purpose for the proposed changes is two-fold. First, since the Central Coast Water Board approved the Post-Construction Requirements on September 6, 2012, the State Water Board subsequently re-issued the State-wide Phase II Municipal General Stormwater Permit, which provides the authority for post-construction requirements in municipal stormwater programs. For procedural reasons having to do with the language of Resolution R3-2012-0025 which enacted the Post-Construction Requirements, the new Statewide Phase II General Permit requires the Central Coast Water Board to re-adopt its Post-Construction Requirements to allow for their implementation under the permit.

Second, the proposed changes modify a Regulated Project's path to compliance with the Post-Construction Requirements' runoff retention requirements by removing a multiplier and providing an alternative for calculating the size of structural Stormwater Control Measures. Making this change will clarify the runoff retention requirements, reduce the amount of runoff that must be retained, and facilitate successful implementation.

Also, based on Public Comment on Draft Resolution R3-2013-0032, Central Coast Water Board staff proposes a six-month delay to start implementing the Post-Construction Requirements. Public Comment also prompted Water Board staff to expand the discussion of the basis for the requirements (see Staff Responses to Comments, Attachment 4), and to make minor revisions to the requirements to improve clarity.

Upon adoption of Resolution R3-2012-0025 in September 2012, the Central Coast Water Board directed staff to continue working with stakeholders to identify and resolve potential obstacles to implementation of the Post-Construction Requirements. Water Board staff then worked with stakeholders to address the multiplier issue and arrive at an acceptable alternative for calculating the size of structural Stormwater Control Measures. This alternative is now included as a proposed modification to the Post-Construction Requirements, demonstrating a success for Water Board staff's engagement with stakeholders. Water Board staff plans to continue working with stakeholders to assess other issues related to implementation of the Post-Construction Requirements, to determine if further modifications should be pursued. Concurrent with these efforts, Water Board staff also plans to continue assisting municipalities with implementation through staff's direct compliance assistance to Permittees and through the Central Coast Water Board's support of the Central Coast LID Initiative.

Water Board staff recommends the Central Coast Water Board adopt Resolution R3-2013-0032 approving the Post-Construction Requirements including the modifications described above.

II. BACKGROUND

A. NPDES Permit Context for Post-Construction Requirements

Until July 1, 2013, Central Coast municipalities are regulated under the State Water Board National Pollutant Discharge Elimination System (NPDES) General Permit for the Discharge of Storm Water

from Small Municipal Separate Storm Sewer Systems (MS4s), Order No. 2003-0005-DWQ (Phase II Municipal General Permit), which the State Board adopted on April 30, 2003. Central Coast municipalities obtained coverage under the Phase II Municipal General Permit when the Central Coast Water Board or its Executive Officer approved their Storm Water Management Plans (SWMPs). The Central Coast Water Board Executive Officer required specific conditions for MS4s' SWMPs pursuant to the federal Clean Water Act and the Phase II Municipal General Permit.

Commencing July 1, 2013, Central Coast municipalities are regulated under the new Phase II Municipal General Permit, Order No. 2013-0001-DWQ, adopted by the State Water Board on February 5, 2013. Both the new and old Phase II Municipal General Permits require regulated small MS4s to address stormwater runoff from development and redevelopment projects through post-construction stormwater management requirements. The State Board's new Phase II Municipal General Permit specifically authorizes Regional Boards to adopt their own post-construction requirements, which are the subject of this item. Although the Central Coast Water Board adopted its own Post-Construction Requirements on September 6, 2012, the new State Board Phase II permit necessitates that the Central Coast Water Board re-adopt its Post-Construction Requirements.

B. The Joint Effort to Develop Post-Construction Requirements

On August 4, 2009 the Central Coast Water Board Executive Officer notified municipalities of the option to participate in the Central Coast Joint Effort for developing post-construction stormwater criteria as a means to meet commitments in the municipalities' SWMPs to develop, adopt and implement hydromodification control criteria. Phase II municipalities agreeing to participate in the Joint Effort submitted a written declaration of their intent to meet the terms of participation. The Phase I City of Salinas also committed to participation in the Joint Effort, as did two University of California campuses.

Prior to the Joint Effort, information on the local characteristics of Central Coast watersheds was inadequate for municipalities to develop Post-Construction Requirements that protect watershed processes from stormwater management impacts so that beneficial uses of receiving waters are maintained and, where applicable, restored. In an effort to financially assist the municipalities, the Central Coast Water Board secured funds from the State Water Resources Control Board's Cleanup and Abatement Account to support development of hydromodification control criteria and related Post-Construction Requirements. These funds were used to establish an expert team of scientists to characterize the Central Coast region's watersheds and help create a methodology for developing Post-Construction Requirements based on that characterization.

Based on the methodology developed through the Joint Effort, Water Board staff proposed Post-Construction Requirements in Resolution R3-2012-0025. The Technical Support Document for Post-Construction Stormwater Management Requirements, an attachment to the Resolution, provided the rationale and explanation for the Post-Construction Requirements.

In response to significant public comment and feedback from stakeholders, and in acknowledgement of the economic conditions faced by municipalities in the Region, Water Board staff modified the proposed requirements. Many municipalities confront strained fiscal circumstances and the demise of their Redevelopment Agencies while facing other State requirements to provide housing and implement climate action plans. The revised Post-Construction Requirements constituted the minimum requirements needed to protect water quality from stormwater impacts caused by development, while giving special accommodation to infill and redevelopment projects that often provide their own environmental benefit and are a priority for municipalities across the Central Coast striving to stimulate economic recovery. The Post-

Construction Requirements incorporated both flexibility and environmental accountability, and as such were a reasonable initial effort within the Central Coast Region to address the adverse impacts to waters associated with new and redevelopment.

The Central Coast Water Board unanimously approved Resolution R3-2012-0025 on September 6, 2012 and allowed Permittees until September 6, 2013 to begin implementing the Post-Construction Requirements.

C. Objective of Central Coast Post-Construction Requirements

The primary objective of the Post-Construction Requirements is to prevent water quality and beneficial use impacts resulting from stormwater management at development projects on the Central Coast. The requirements are applied by Permittees when approving and/or issuing permits for applicable development projects. The Post-Construction Requirements emphasize protecting and, where degraded, restoring key watershed processes to create and sustain linkages between hydrology, channel geomorphology, pollutant reduction, and biological health necessary for healthy watersheds. Maintenance and restoration of watershed processes impacted by stormwater management is necessary to protect water quality and beneficial uses.

The Post-Construction Requirements retain the essential elements of a strategy that Water Board staff developed with substantial stakeholder involvement over the past four years. This strategy avoids a “one-size-fits-all” approach in response to a clear message from municipalities early on that such an approach was not acceptable. The strategy emphasizes protection of areas that are less disturbed over urban areas with existing impacts, and applies requirements more rigorously to new development as compared with redevelopment in existing urban areas. This strategy is designed to address the full suite of watershed processes affected by urban stormwater, including surface runoff, groundwater recharge, and the chemical and biological role of soil and vegetation in filtering runoff. The strategy is grounded in science so is well suited to address the full range of stresses on beneficial uses where stormwater plays a role, and points clearly to a need for managing runoff volume on development projects in most parts of the Central Coast. The volume-based approach to stormwater management is strongly endorsed by the nation’s leading science and policy experts and is being embraced by engineering practitioners as well.

With a focus on the goal of runoff volume control, the Post-Construction Requirements identify Low Impact Development (LID) as an essential tool for post-construction stormwater management and require its use where feasible. LID is expected to be a viable strategy to reduce runoff volumes in the majority of projects in the Central Coast. However, the Post-Construction Requirements allow municipalities to adjust the application of the requirements where LID is technically infeasible.

D. Stakeholder Involvement

With its first approval of the Post-Construction Requirements on September 6, 2012, the Central Coast Water Board directed Water Board staff to continue the successful stakeholder process Water Board staff had conducted up to that time. The Central Coast Water Board’s objective was to continue the process of communicating with municipalities regarding implementation of the Post-Construction Requirements to understand the challenges municipalities are facing in implementing the requirements, and to identify areas where Water Board staff can assist municipalities with implementation.

Water Board staff’s stakeholder process includes a stakeholder review team, associated subcommittees, and reporting back to the Central Coast Water Board. This process is currently underway, and has already resulted in identification of an adjustment to the Post-Construction

Requirements that would increase flexibility implementing the requirements, potentially providing benefits to municipalities and developers.

The Post-Construction Requirements are a product of Water Board staff's continued engagement with stakeholders through both structured and less formal opportunities for involvement. The history of stakeholder involvement is chronicled in Attachment 5 to this staff report. Water Board staff believes this significant effort to engage stakeholders from very early discussions on how to develop post-construction requirements for the Central Coast, up to the current recommendation to approve Resolution R3-2013-0032, has yielded the most reasonable, feasible and understandable starting point for implementation. This effort also resulted in great benefit to Central Coast municipalities by financing development of the Post-Construction Requirements. The Central Coast Water Board's financial assistance to the effort stands in contrast to how post-construction requirements have been developed for municipalities in other regions, where Permittees have had to finance costly studies to develop numeric criteria.

III. Revisions to September 6, 2012 Resolution R3-2012-0025

Resolution R3-2013-0032 is a re-adoption, with limited revisions, of the September 6, 2012 Resolution R3-2012-0025 which originally approved the Post-Construction Requirements. The revisions include: changes to the method for sizing Stormwater Control Measures; changes to achieve consistency with the new Phase II General Permit; and an assortment of minor revisions to improve clarity. Proposed Resolution R3-2013-0032 would replace Resolution R3-2012-0025 and would allow the Executive Officer to approve any non-substantive changes subsequent to adoption.

A. Replace Multiplier Used in Sizing Retention Facilities

Attachment D of the Post-Construction Requirements approved in Resolution R3-2012-0025 included a detailed method for sizing structural Stormwater Control Measures to retain runoff on site. The method relied on a multiplier of 1.963 to determine Retention Volume, which a Stormwater Control Measure, or facility, would then be sized to hold. Working with stakeholders, Water Board staff identified alternative calculation methods to achieve similar water quality treatment and watershed process protection. As such, Water Board staff recommends a modification to the Post-Construction Requirements to allow municipalities to use alternative sizing methods. This change reduces on-site retention volume compared to the previous method and directly responds to Central Coast municipalities' most significant comments on the Post-Construction Requirements. Furthermore, it demonstrates implementation and success of Central Coast Water Board's direction to Water Board staff and stakeholders to work together to improve implementation of the requirements.

The proposed changes to the Post-Construction Requirements included in Draft Resolution R3-2013-0032 eliminate the 1.963 multiplier and allow for facility sizing by one of two methods when project applicants opt to use event-based approaches: Simple Method, and Routing Method (see pages 30-34 in Draft Resolution R3-2013-0032, Attachment 1: Post-Construction Requirements and pages 24, 25 and 53 in Attachment 2: Technical Support Document).

The Simple Method is a direct calculation of facility size based on the runoff volume generated by a single 85th or 95th percentile 24-hr rainfall event, whichever applies; use of 85th vs. 95th percentile depends on the Watershed Management Zone in which the project is located. The calculated runoff volume is the resulting facility design volume, or, Capture Volume of the facility.

The Routing Method uses hydrograph analysis to determine the Stormwater Control Measure Capture Volume needed to retain the runoff generated by the 85th or 95th percentile 24-hr rainfall event, whichever applies. In this method, the Stormwater Control Measure Capture Volume is based on both the rate of flow from tributary areas into the Stormwater Control Measure, and the rate of flow out of the Stormwater Control Measure through infiltration into soils during the rainfall event. The Stormwater Control Measure must be designed such that a single 95th or 85th percentile 24-hr rainfall event will not overflow the Stormwater Control Measure. Application of the Routing Method results in stormwater retention facilities that are smaller than those sized using the Simple Method.

The Permittee can also allow project applicants to use a locally/regionally calibrated continuous simulation-based model to improve hydrologic analysis and Stormwater Control Measure sizing. However, the Post-Construction Requirements do not allow continuous simulation modeling for estimating pre-development runoff in lieu of the proxy runoff values from 85th and 95th percentile 24-hr rain events as determined by Watershed Management Zone.

For consistency, these proposed changes to Attachment D of the Post-Construction Requirements require related changes to Section B.4.d.v. and B.4.d.vi. of the Post-Construction Requirements, since these sections reference the hydrologic analysis and sizing methods in Attachment D (see pages 10 and 11 in Draft Resolution R3-2013-0032, Attachment 1: Post-Construction Requirements).

B. Revisions for Consistency with Phase II General Permit

Draft Resolution R3-2013-0032 includes revisions that ensure consistency with the Phase II Municipal General Permit. Specific language in Resolution R3-2012-0025 must be revised because the language: refers to the old Phase II Municipal General Permit, Order No. 2003-0005-DWQ instead of the new Phase II Municipal General Permit, Order No. 2013-0001-DWQ; cites the section numbers for post construction requirements from the old Phase II Municipal General Permit instead of the new; and describes implementation via Storm Water Management Plans as in Order No. 2003-0005-DWQ instead of through Guidance Documents as required in the new Phase II Municipal General Permit. Draft Resolution R3-2013-0032 also includes a finding that three Central Coast communities, newly designated by the Phase II Municipal General Permit as Traditional MS4s, are subject to the Post-Construction Requirements. These are the communities of Gonzales, Greenfield and Guadalupe. Water Board staff proposes allowing these communities additional time, until July of 2014, to begin implementation.

C. Other Minor Revisions for Clarification and to Facilitate Implementation

Water Board staff also proposes changes to Section B.4.e concerning off-site mitigation (see page 11 in Draft Resolution R3-2013-0032, Attachment 1: Post-Construction Requirements). These changes do not alter the intent of Section B.4.e., but rather clarify the option to dedicate an area equal to ten percent of a site's equivalent impervious area where a project can demonstrate that it is technically infeasible to fully achieve retention requirements on-site. For consistency, changes are also proposed in the first paragraph of Attachment E, which references the ten percent adjustment (see page 35, Draft Resolution R3-2013-0032, Attachment 1: Post-Construction Requirements).

Water Board staff proposes an additional revision to Attachment E of the Post-Construction Requirements. Attachment E included an error that Water Board staff corrected by removing *permeable pavement* from the list of surfaces excluded from the category of pervious tributary surfaces (see page 35 in Draft Resolution R3-2013-0032, Attachment 1: Post-Construction

Requirements). Water Board staff unintentionally included permeable pavement in this category in the Post-Construction Requirements approved September 6, 2012.

Revisions to the Technical Support Document were also necessary to present supporting information for removing the multiplier from Post-Construction Requirements Attachment D described above. These changes are found on pages 24 and 25, and in a new Attachment G of Draft Resolution R3-2013-0032, Attachment 2: Technical Support Document.

Draft Resolution R3-2013-0032 also adds a finding allowing the Central Coast Water Board Executive Officer to make non-substantive changes to the Post-Construction Requirements that do not alter their intent. Water Board staff proposes this change to provide flexibility in implementing the Post-Construction Requirements.

All of the above proposed changes and other minor, non-substantive revisions are identified in tracked changes in Attachment 1. For ease in reviewing the Post-Construction Requirements, a version with changes accepted is also provided in Attachment 2.

IV. PUBLIC COMMENT

From April 8 to May 10, 2013, Water Board staff made available for public review Draft Resolution R3-2013-0032. Based on comments received from the public, Water Board staff revised Draft Resolution R3-2013-0032 (Section V, below). This Staff Report includes two attachments relating to Public Comments, including the written comments themselves (Attachment 3) and Staff Response to Public Comment Received (Attachment 4).

A. Key Issues Raised by Public

A few key issues emerge from the 135 pages of public comment received on proposed Resolution R3-2013-0032. In general, these issues are not new and in many cases simply restate comments made when the Post-Construction Requirements were first approved with adoption of Resolution R3-2012-0025. Water Board staff's responses to issues raised previously remain a part of the record of adoption of Resolution R3-2012-0025. Fully one-third of the pages of comment letters received on Draft Resolution R3-2013-0032 were submitted by attorneys for one Permittee, the City of Goleta. These comments present most of the arguments included in the City's petition of Resolution R3-2012-0025. Two comment letters are strongly supportive of the proposed requirements, and most Permittees indicated a readiness to proceed with implementation, provided they are granted some additional time to prepare. A summary of key issues and Water Board staff's responses is provided below. For Water Board staff's complete response to these key issues see Attachment 4, Staff Response to Public Comment.

Issue: Request to Delay Implementation

Public Comment:

While some comments urged the Central Coast Water Board to maintain the September 6, 2013 schedule to begin implementation approved in Resolution R3-2012-0025, comments from Permittees propose various time frames for delaying implementation, ranging from four months to a year. One comment letter (Central Coast MS4s – 1), signed by a majority of affected Permittees, requests a six-month delay. This request was supported by the Permittees' schedules for various phases of preparation for implementation (see Attachment 3 for comment letter and attached schedules).

Water Board Staff Response:

Water Board staff recognizes the value in providing Permittees additional time to prepare and proposes a six-month extension of the September 6, 2013 implementation deadline for the Post-Construction Requirements. The new proposed deadline for implementation is March 6, 2014. Water Board staff has revised the Draft Resolution and Post-Construction Requirements to reflect this extension. A full year extension of the date to commence implementation is not warranted given the fact that a majority of Permittees have indicated readiness to commence sooner and because several past delays have already been granted. Additional delay in implementation will result in further impact to water quality and beneficial uses as development projects that fail to properly mitigate these impacts are constructed. The impacts of urbanization on water quality are long-lasting, if not permanent, and they alter the full range of watershed processes that support beneficial uses.

Issue: Retention Requirements are Not Supported

Public Comment:

The Runoff Retention Performance Requirement lacks supporting evidence as an approach to hydromodification control and fails to bridge the analytical gap between the raw evidence and the ultimate decision.

Water Board Staff Response:

Water Board staff includes ample evidence in the record supporting adoption of the proposed Runoff Retention requirements:

- Water Board staff based final selection of runoff retention criteria on a robust evaluation of a wide range of criteria used to manage urban runoff throughout the United States. The document, Development and Implementation of Hydromodification Control Methodology: Support for Selection of Criteria, was presented to the Joint Effort Review Team (JERT), discussed by the JERT, and summarized in the Technical Support Document included in the proposed Post-Construction Requirements first made available for public comment on May 14, 2012.
- Water Board staff presented evidence of the effectiveness of the Post-Construction Requirements' approach to hydromodification control, including an independent analysis of the effect of the Post-Construction Requirements' combined approach of runoff retention (Performance Requirement No. 3) and peak management (Performance Requirement No. 4) on flow duration, which determined comparable levels of protection could be achieved with the combined approach.
- Water Board staff presented a critical line of evidence bridging the analytical gap between raw evidence and the Post-Construction Requirements in the linkage analysis found in Technical Support Document, Attachment E: Methods and Findings of the Joint Effort. The Linkage Analysis is the characterization of the relationships between disturbance, dominant watershed processes, and receiving-water conditions.

Furthermore, the Post-Construction Requirements invoke Watershed Management Zones to provide an objective for stormwater management (e.g., retain runoff, treat runoff, control runoff peak discharge), while through other provisions the Post-Construction Requirements allow flexibility in how specific requirements apply to sites within a particular Watershed Management Zones. The Post-Construction Requirements address soil variability, for example, by providing a path to compliance, including both on- and off-site options, for individual sites where soil conditions limit infiltration. The Post-Construction Requirements provide reasonable alternatives to strict adherence to volumetric retention requirements on-site where conditions vary from the broader condition throughout the Watershed Management Zones in which projects are located.

Issue: The Requirement to Retain Runoff from the 95th Percentile 24-hr Rain Event Can Exceed Predevelopment Retention Conditions

Public Comment:

The 95th percentile 24-hr runoff retention requirement exceeds the runoff retention that would occur under predevelopment conditions for many sites, particularly sites with soils with low infiltration potential. A result of applying the requirement on these sites would be the oversizing of retention facilities. Site-specific modeling of predevelopment runoff is a preferred approach to estimating the site's potential for retention and would result in appropriately sized facilities.

Water Board Staff Response:

The occurrence of oversizing is expected to be very low because the Post-Construction Requirements allow for ample reductions of retention volumes generated by the 85th and 95th percentile 24-hr rain events. For example, the Post-Construction Requirements allow reductions of required retention volumes by requiring only 50 percent of runoff from replaced surfaces to be retained. This results in smaller retention facilities potentially undersized for matching actual predevelopment conditions. In designated Urban Sustainability Areas, retention requirements for replaced impervious surfaces are further reduced to that of the pre-project condition. Additionally, where technical infeasibility of retaining the full retention volume on a particular site is demonstrated, a regulated project can instead dedicate ten percent of its equivalent impervious surface area to retention-based structural control measures, or pursue off-site mitigation.

The Post-Construction Requirements are intended to protect and, to the extent reasonable, restore the watershed processes that occurred before development on and around individual project sites within a watershed. Requiring retention of the 95th percentile rain event is a proxy for actual predevelopment conditions of an entire Watershed Management Zone. Individual project sites in a Watershed Management Zone requiring retention may be more or less permeable than surrounding areas due to normal variation in soil conditions. However, the Post-Construction Requirements would require all sites to achieve retention (not necessarily through infiltration and not where technically infeasible) consistent with the predevelopment conditions of the entire Watershed Management Zones. This is a reasonable approach that is protective of water quality because:

- a) In the pre-developed condition runoff from sites with poor natural permeability traveled via overland flow and interflow to: areas where infiltration was possible adjacent to the site; areas on- and off-site with capacity for depressional storage, evapotranspiration, and very slow infiltration; to vegetated areas capable of storage and evapotranspiration. Only after all these routes were exhausted, did remaining runoff reach a surface receiving water.
- b) In the currently urbanized context of most projects, runoff can no longer go to these intermediate places and is instead routed directly to and through a conveyance system (MS4) engineered to efficiently deliver runoff to a receiving water. In such cases, when runoff is not retained on site, the watershed processes of the Watershed Management Zone are not maintained, which leads to increased pollutant discharges and impacts to water quality and beneficial uses.
- c) Consequently, with the natural offsite retention of predevelopment runoff no longer available, runoff retention on- or off-site is an appropriate way to mitigate for the increased volume from development projects otherwise destined for the receiving water.

Site-specific estimates of predevelopment runoff can be made using continuous simulation modeling. However, these models ask only what is possible on an individual site and as such, ignore the watershed context in which that site is being developed. It is in that larger context that the cumulative effect of many actions on many individual sites manifests. Ignoring information about hydrologic response of the larger watershed context, and relying exclusively

on modeled estimates of individual site conditions to dictate management actions, will perpetuate the cumulative effects of urbanization on water quality. This is not only Water Board staff's position, but that of the National Research Council of the National Academy of Sciences, the USEPA, and the preponderance of peer-reviewed literature as summarized in the Joint Effort Literature Review.

Also, Water Board staff finds that continuous simulation analysis is not a satisfactory substitute for the proxies used in the Post-Construction Requirements because consistent and well calibrated application of continuous simulation modeling is virtually impossible to ensure at this time. Staff bases this finding on two factors: 1) absent an agreed upon set of input variables, individual modelers are left to their professional opinion as to what values to use for important variables such as depression storage, evapotranspiration, and soil infiltration rate; and 2) data on reference conditions, which are important in calibrating continuous simulation models to ensure greater certainty surrounding the estimate of predevelopment conditions, are not available.

Water Board staff finds the Post-Construction Requirements achieve the appropriate balance at this time in the Central Coast Region. They a) rely on a rainfall depth proxy (85th or 95th percentile 24-hr rain event), b) do not require costly continuous simulation modeling, c) provide a straightforward and cost-effective facility sizing method, and then d) allow various adjustments based on site constraints.

Issue: The 85th Percentile 24-Hr Rainfall Standard is a More Appropriate Criterion

Public Comment:

Design criteria for water quality control BMPs are typically set to coincide with the "knee of the curve," or the point of inflection in a curve relating detention facility size to number of rain events captured. For points on the curve past this inflection point, or knee, the magnitude of the event (and corresponding cost of facilities) increases more rapidly than the number of events captured. The knee has been estimated to correspond approximately to the 85th percentile 24-hr rain event. Targeting storms larger than this will produce volume detention gains but at considerable incremental cost (See Attachment 4, Comment CASQA – 3).

Water Board Staff Response

Water Board staff finds in some areas of the region (Watershed Management Zones 5, 6, 8, and 9), the 85th percentile 24-hr storm event is an appropriate volume retention objective for addressing a range of water quality objectives such as runoff treatment, groundwater recharge, and stream erosion prevention. However, other areas of the Central Coast are more infiltrative, including alluvial areas typically overlying groundwater basins. Applying the 85th percentile storm event uniformly as the criterion for runoff retention would ignore this variability of hydrologic conditions in the Central Coast; potentially cause undue burden to projects in areas not suitable for retention; and result in incomplete mitigation of project impacts in areas where higher amounts of retention were typical of predevelopment conditions.

While the 85th percentile 24-hr rain event objective is roughly equivalent to capturing 80 percent of annual runoff volume, Water Board staff found and presented evidence in the Technical Support Document that areas in the Central Coast Region (Watershed Management Zones 1, 2, and portions of 4, 7, and 10 overlying groundwater basins) retained (infiltrated, evapotranspired, or routed to subsurface flow) higher percentages of runoff volume in predevelopment conditions. So, keeping the retention objective at 85th percentile would not adequately manage (reduce) runoff volume from impervious surfaces constructed in these areas. For these areas, a 95th percentile objective is an appropriate proxy for the

predevelopment condition, and where it cannot be achieved because of technical infeasibility, the Post-Construction Requirements present alternative compliance options.

Importantly, the 85th Percentile criterion was developed to address runoff *treatment*, not runoff *retention*. Because the criterion is predicated on a treat and release concept for managing runoff, Water Board staff finds the 85th percentile criterion has no inherent validity as a criterion for runoff retention. Water Board staff also finds the basis for the 85th percentile criterion in the knee of the curve argument is in need of review and update some 22 years since it was developed and 13 years since State Board Order 2000-0011 invoked it in establishing design criterion for water quality treatment facilities. At a minimum, an appropriate amount of caution is required in using it to substantiate a design standard and in most municipal stormwater permits in the State, retention based LID is also required to improve the effectiveness of facilities designed per the 85th percentile criterion.

Issue: Technical Infeasibility

Public Comment:

The Central Coast Water Board has included no findings to explain how the 95th percentile 24-hour rainfall retention requirement is technically feasible for the localities in which it is being applied.

Water Board Staff Response

The findings explain how the retention requirement is technically feasible in conditions typical of the localities in which it would be applied in the Central Coast (see discussion on p. 24-26 in Technical Support Document, "Feasibility of Achieving Retention" as well as Attachments D and G of Technical Support Document). Water Board staff presents evidence from other localities with similar conditions (e.g., Hydrologic Soil Group Type D soils) that retaining the 95th percentile 24-hr runoff is feasible.

Water Board staff recognizes there will be circumstances in which it is not feasible to retain all runoff from the 95th percentile 24-hr rain event and we have included alternative compliance options. Potential causes of technical infeasibility are understood; they are identified in the Post-Construction Requirements; and they are consistent with the categories of infeasibility identified in other municipal stormwater permits throughout California. The Post-Construction Requirements specifically address technical infeasibility caused by space constraints in redevelopment projects. Space limitations are known to cause technical obstacles to retaining large runoff volumes. To improve the feasibility of retaining runoff in redevelopment projects, which typically involve the replacement of existing impervious surfaces, the Post-Construction Requirements provide a 50 percent reduction of the retention requirement for runoff generated by replaced impervious surfaces. For qualifying projects within designated Urban Sustainability Areas, runoff retention requirements for replaced surfaces are further reduced to simply matching pre-project retention. Furthermore, in those circumstances where a project can demonstrate that meeting the retention requirement is in fact technically infeasible, the Post-Construction Requirements provide the option of dedicating ten percent of the equivalent impervious surface area of the site to retention-based Stormwater Control Measures, or of pursuing off-site compliance. To illustrate how a project complies with the runoff retention requirements, a draft flow chart is included in Attachment 6.

Issue: Economic Infeasibility

Public Comment:

The Central Coast Water Board has included no findings to explain how the requirement is economically feasible.

Water Board Staff Response

The record supporting the September 6, 2012 adoption of Resolution R3-2012-0025 approving the Post-Construction Requirements includes substantial discussion of economic feasibility. Water Board staff included some of the same information in response to the issue raised in this comment period. However, Water Board staff included additional information on the cost of infiltration facilities that was not available previously. Based on available information, Water Board staff finds facilities that function through infiltration are cost-effective and economically feasible, and therefore consistent with the MEP standard.

B. Opportunity to Comment Orally on July 12, 2013 Resolution

The Central Coast Water Board will provide an opportunity for oral comments on Draft Resolution R3-2013-0032 at the hearing scheduled for July 12, 2013 in Watsonville, CA.

V. CHANGES TO APRIL 8, 2013 DRAFT RESOLUTION R3-2013-0032

Water Board Staff Response to Comment (Attachment 4), includes discussion of changes staff made as a result of Public Comment received on the April 8, 2013 Draft Resolution, including several minor revisions for clarification suggested in the comments.

The only significant change is in response to the Permittees' request to delay implementation. The Joint Effort was designed to be completed over a two-year period. However, since the Central Coast Water Board Executive Officer's 2009 notification to municipalities of the option to participate in the Joint Effort, the project's timeline has been extended multiple times. The extensions have benefitted from and responded to the stakeholder process, but they have also delayed implementation of Post-Construction Requirements for new and redevelopment, thereby preventing implementation of necessary water quality protection. At its March 15, 2012 Board Meeting, the Central Coast Water Board responded to requests from municipalities for more time to review the proposed requirements and granted an extension to the schedule for bringing this item to the Central Coast Water Board for approval from July 12, 2012 to September 6, 2012. Nevertheless, Water Board staff recognizes the value in providing Permittees additional time to prepare and proposes a six-month extension of the September 6, 2013 implementation deadline for the Post-Construction Requirements.

The following list summarizes relatively minor changes Water Board staff made to the Post-Construction Requirements:

- Edited Section C.3.a. to clarify the intent of Urban Sustainability Areas.
- Clarified that use of Site Design measures in Section B.4.d.ii., Runoff Reduction measures in Performance Requirement No.1, and undisturbed and natural landscape areas discussed in Section B.4.d.iv. should be maximized to the extent feasible before resorting to Structural Stormwater Control Measures to comply with Performance Requirement No. 3. (Section B.4.d.i.)
- Added measures to demonstrate equivalent effectiveness of biofiltration treatment systems, thereby clarifying what "as effective as" means.
- Removed the reporting requirement for pollutant and flow reduction analysis (Section F.2.e.i), since the requirements for offsite compliance do not include an analysis of pollutant loading.
- Deleted references to the Runoff Retention and Peak Management Performance Requirements in Sections B.1.c and B.1.d, because Sections B.4 and B.5 already address which portions of a Regulated Project site must adhere to the Runoff Retention and Peak Management requirements; and moved requirements related to Site Design and Water

Quality Treatment Performance Requirements to the individual requirements in Sections B.2.a and B.3.b, respectively.

- Added schedule for Central Coast Water Board review and approval of proposals for Watershed or Regional Plans.
- Added “drought-tolerant, or LID appropriate” in describing vegetation in areas that may be considered self-treating (Section B.4.d.iv. and definitions for Self-Treating Areas and Tributary Area in Attachment C).
- Revised the definition for Equivalent Impervious Surface Area to include a reference to Attachment E.
- Refined how the term, “tributary area” is used to provide further clarification (changed all references to Tributary Area in Section B.4, Glossary, and Attachment D to “Retention Tributary Area”).

Revisions to the April 8, 2013 Draft Resolution are marked in underline and strikeout format in Attachment 1. A ‘track changes accepted,’ version of the Post-Construction Requirements is provided in Attachment 2 to improve legibility of the final proposal.

VI. RECOMMENDATION

Draft Resolution R3-2013-0032 will establish post-construction stormwater management requirements for development on the Central Coast. The Resolution contains the minimum requirements necessary to reduce pollutants in stormwater discharges to the Maximum Extent Practicable and to protect water quality and beneficial uses, including the achievement of water quality standards. The Resolution addresses the specific contribution to water quality problems caused by development by establishing provisions designed to reduce pollutants, achieve water quality standards, and protect and restore watershed processes impacted by stormwater management.

Water Board staff presents Draft Resolution R3-2013-0032 as an appropriate starting point for managing post-construction stormwater for new and redevelopment projects in the Central Coast.

Water Board staff recommends that the Central Coast Water Board adopt Draft Resolution R3-2013-0032.

VII. ATTACHMENTS

1. Draft Resolution R3-2013-0032 (April 8, 2013 track changes version)
 - a. Resolution Attachment 1: Post-Construction Requirements (track changes version)
 - b. Resolution Attachment 2: Technical Support Document for Post-Construction Requirements (track changes version)
2. Post-Construction Requirements (track changes accepted)
3. Public Comment Letters Received on April 8, 2013 Draft Resolution R3-2013-0032 (link)
4. Staff Response to Public Comment Received on April 8, 2013 Draft Resolution (link)
5. Key Milestones and History of the Central Coast Joint Effort
6. Draft Flow Chart for Projects Required to Meet Runoff Retention Performance Requirement