



# California Regional Water Quality Control Board

## Santa Ana Region



**Matthew Rodriguez**  
Secretary for  
Environmental Protection

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**Edmund G. Brown Jr.**  
Governor

October 18, 2011

Mr. Jason Uhley  
Riverside County Flood Control and Water Conservation District  
1995 Market St.  
Riverside, CA 92501

### COMMENTS ON THE JULY 29, 2011 WATER QUALITY MANAGEMENT PLAN (WQMP)

Dear Mr. Uhley:

We have the following general and specific comments on the WQMP:

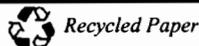
#### General Comments:

1. The document should clearly emphasize that LID BMPs and Principles must be implemented onsite, where feasible (See Provisions XII. E.2 , E.3 and G.1). Also see Comment no. 17, below.
2. The document, including the attached Road Guidance and Template need more details to demonstrate that a project meets the performance criteria for site design/LID, LID treatment control BMPs and does not pose hydrologic conditions of concern (HCOCs).
3. A revised template that incorporates the elements of the updated WQMP for project-specific WQMPs has not been submitted.

#### Specific Comments

1. Page 1, second paragraph: Please revise to state that "Any non-substantive updates to the WQMP will be provided in the annual report to the Regional Board. Substantive updates will be submitted to Regional Board staff' for review and approval prior to implementation."
2. Chapter 1, page 4, third paragraph: It states, "If your project is not a 'Priority Development project' a Project-Specific WQMP is generally not required. However, Co-Permittee staff may choose to require Project-Specific WQMPs for projects not within the categories in Table 1-1..." Please indicate that such projects are required to incorporate appropriate site design, source control and other BMPs which may or may not include treatment control BMPs (see Provision XII.D.6 of the Permit and Section 6.4.4 of the DAMP).
3. Page 7, Other Public Projects, 1<sup>st</sup> paragraph: Please revise to state, "Public projects, other than Transportation projects as discussed above, that are implemented by a Permittee **may are** required to prepare a 'Project-Specific WQMP if the project is similar in nature to the Priority Development projects described in Table 1-1..."
4. Page 20: Equations are missing for Design Capture Volume and Design Flow rate.

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5. Page 21, last sentence and first sentence on Page 22: Typing error (“principals” should be “principles”).
6. Page 27, sentence prior to the last sentence: It states, “...it is appropriate to designate 40% retention as a minimum threshold for eliminating the mandatory selection and use of a specific LID retention measure in favor of using LID Bioretention BMPs that achieve a comparable or greater level of retention for the system as a whole.” The discussion that led to this conclusion does not reflect the intent of the preferential LID retention BMPs in the permit. For example, if an infiltration system is only able to address 40% of the capture volume, a combination of additional LID BMPs lower in the hierarchy, including bioretention, may be considered to manage the balance of the design capture volume.
7. Page 30, first bullet: This limits infiltration BMPs to areas with saturated hydraulic conductivity (Ksat) equal to or greater than 1.6 inches per hour. While we agree that site conditions impart uncertainties in the Ksat values, we are not convinced that the safety factor of 2 used to calculate this Ksat factor is appropriate. Furthermore, prohibiting infiltration BMPs at Ksat between .3 and 1.6 in/hour may not be justified. Some of the uncertainties could be minimized through proper site management and engineering.
8. Pages 30-31: These pages establish an exemption for infiltration systems for Group D soils. It is not clear why soil amendment and other techniques were not discussed in this section.
9. Page 31: The determination that infiltration BMPs should not be used in fill and cut areas appears to be too restrictive as most developments have at least some cut and fill areas.
10. Page 31: It states that if harvesting and using storm water runoff would negatively impact downstream water rights, harvest and use BMPs are not required. Since the goal of LID provisions is to mimic pre-development conditions, it should not impact water rights.
11. Page 33, second bullet: The permit’s hierarchy of preferential BMPs allows partial credit for storm water harvesting.
12. Page 35, Table 2-2: Please add a footnote to define  $K_L$ . Generally residential irrigation requires several times the annual rainfall for Southern California areas. It appears that the data in Table 2-2 indicate that irrigation use of harvested water may not be practical. Please explain the table and some of the terms used in the table, such as partial capture. One way to make irrigation use of harvested water more viable is to require plants that evapo-transpire more than sod. Please consider specifying certain plants that have these characteristics to increase the viability of harvest and use of storm water. Please see the Low Impact Development Manual for Southern California, Appendix A, Bioretention Plants List.
13. Page 36, Table 2-3: Please define wet season demand and discuss how the harvest and use data in Table 2-3 was derived; assumptions used and references.

14. Page 37, first bullet: It is not clear why biotreatment is infeasible for "Portions of sites which are not being developed or redeveloped, but which must be retrofit to meet treatment requirements in accordance with the "50% rule."" Please clarify that runoff from these existing developed sites need to be addressed elsewhere if not on the existing footprint of the site not being developed.
15. Page 37, second bullet: The small site lot line to lot line exemption should not preclude the use of any LID. Features can be built into buildings such as bio-retention planters and green roofs.
16. Page 38, Table 2-4: References and the source of data for recommended effective area should be provided. Please discuss if this table also considers factors such as the use of permeable pavers, porous concrete and asphalt, etc.
17. Page 38, Footnote 2 of Table 2-4: It states, "Criteria for site design are only required to be met if the Project WQMP seeks to demonstrate that the full DCV cannot be feasibly managed on site." This footnote does not reflect the permit's intent to advance LID principles. The permit has a preferential hierarchy of LID BMPs and the permit requires maximization of use of LID BMPs.
18. Page 39: Please note that the statement, "Grade control structures are a good practice to prevent excess erosion" is debatable. For example, according to Chapter 5 of "A Primer on Stream and River Protection for the Regulator and Program Manager" restoring adequate stream meander, flood plain restoration, restoration of stream bank vegetation, restoring adequate channel depth when it has been filled and realignment of culverts are usually better than grade control structures.
19. Page 40, last sentence: Please revise, "Co-permittee **may must** use a checklist".
20. Pages 44 and 45, Infiltration Assessment: Please note that infiltration type of LID BMPs should be considered prior to harvest and use type of BMPs. Also on page 62, infiltration BMPs should precede cisterns.
21. Page 49: We suggest including a link to Low Impact Development Manual for Southern California, Appendix A for the list of plants applicable to various applications.
22. Page 51: – A template and an overall flowchart would help to put all the concepts together in a logical manner.
23. Page 53, Step 1: Please discuss any of the LID techniques specified in Section X.II.E.4 of the Permit that are not included in this section and indicate if they are addressed in other sections of this document.
24. Page 56, fourth paragraph, second sentence: "Areas addressed by LID Principles are self-mitigating and do not require mitigation measures. Further, there is no requirement for O&M inspections for these areas." Please explain why areas addressed by LID Principles do not require O&M plans.
25. Page 59, middle of the page: Information appears to be missing related to partially pervious and tributary self-retaining area.
26. Page 59, Table 4-3: Please provide a reference for information provided in this table.

27. Page 64/65, Figure 4-6 and Table 4-5: The LID BMP hierarchy specified in the Permit is not reflected here.
28. Page 66, fifth bullet: Please elaborate on the basis for prohibiting LID on private residential lots. If it is a LID BMP constructed to treat runoff from a number of residential lots, operation and maintenance could be a factor. However, a number of LID BMPs may not require regular maintenance by an entity other than the resident.
29. Page 66, Step 5: Please provide a reference for the 0.04 uniform sizing factor for bioretention BMPs.
30. Page 72, first and second bullets: Please delete proximate and replace with "all downstream" receiving waters consistent with the watershed approach. All receiving waters, not just the proximate receiving water may have to be considered when identifying pollutants of concern.
31. Page 76, Figure 4-7: The HCOC decision should be consistent with Section XII.E.9.
32. Page 82: It states that the under drain is to be connected to the storm drain. If there are no storm drains in the area, please state how the WQMP will employ such BMPs.
33. Page 82, Underground Connection to Storm Drain/Outlet Orifice, 4<sup>th</sup> item: Please explain what are cleanouts that are connected via sweeps.
34. Page 85, Item 3: Please note that other types of LID BMPs may also require operation and maintenance.
35. Exhibit B, Page 2, Column 4, Section d.2: At the end of the website address, it says "error"; please correct it.
36. Exhibit D, Page 1-3 of Transportation Project Guidance, first paragraph of Table 1-1: Please explain the statement that projects need to implement the guidance if CEQA approval has not been obtained within six months of the guidance approval. Please consider the requirements of Section XII.F.2 of the Order with respect to this timeline.
37. Exhibit D: The Transportation Project Guidance must identify potential pollutants of concern from the project and evaluate their impacts on receiving waters. If the receiving water is listed as impaired or have an adopted TMDL with an urban waste load allocation, the Guidance must address how these pollutants of concern are addressed and how the wasteload allocation is going to be met.
38. Exhibit D, Page 3-2, Minimizing Road Widths, Item b: The USEPA Municipal Handbook, Managing Wet Weather with Green Infrastructure: Green Streets provides examples of minimum widths for several cities in the U.S. Please discuss if similar alternative street design standards and details and specifications have been developed within the Permit area. Section XII.F.1 of the MS4 Permit requires development of "standard design" as part of the post-development BMP guidance for road projects.
39. Pages 3-2 and 3-3, Exhibit D: These pages identify the green streets principles for drainage swales, bioretention curb extensions and sidewalk planters, permeable

pavement, reverse parkway drains, curb cuts, sidewalk planters, permeable pavement, sidewalk trees and tree boxes, and infiltration basins. To meet the permit requirements and promote implementation of these principles, specification and standard design details must be included as required in Section XII.F.1 of the MS4 Permit.

40. Exhibit D, Page 3-2: Please consider a recommendation for sending runoff to bioretention features in median strips. Please see <ftp://ftp-fc.sc.egov.usda.gov/WSI/UrbanBMPs/water/quality/medianstripinfil.pdf> . A demonstration design involving under pavement storage for a transportation project was presented at:  
<http://www.greeninfrastructurewiki.com/page/Decatur+Street+LID+system,+Olympia>
41. Exhibit D, Page 3-3: Please consider identifying specific applications and design criteria for various types of permeable gutters including the use of plastic paver grids.
42. Exhibit D, Page 3-3: Please evaluate or explain the rationale for locating an infiltration BMP at least 20' away from the roadway.
43. Exhibit D, Page 3-6, first sentence: The statement regarding "limiting the amount of pervious surface" should be changed to "limiting the amount of impervious surface".
44. Exhibit D, Page 3-6: There are number of references to impediments to implementing LID BMPs due to existing codes and other requirements. Please note that Section XII.E.4 of the Order requires the permittees to identify those codes and requirements, including building and landscape design standards, and evaluate whether they may be barriers to LID implementation.
45. In the bioretention BMP on page BMP 3.5 in the LID Manual, please give a more detailed specification as to what is meant by nitrogen stabilized compost. Caltrans has composting specification that must meet US Composting Council specifications. The WQMP should use the same or equivalent standards. Also the design calls for 15% organic material. Please use a 30-40% compost specification. Please explain why trees are not allowed in the retention basins. The BMP page on BMP 3.1 of the LID Manual shows that the drip line of the tree must be outside the retention footprint <http://www.cabmphandbooks.com/Development.asp> shows trees in TC-32.

If you have any question regarding this matter, please contact Milasol Gaslan at [mgaslan@waterboards.ca.gov](mailto:mgaslan@waterboards.ca.gov) or (951) 782-4419 or Michael Roth at [mroth@waterboards.ca.gov](mailto:mroth@waterboards.ca.gov) or (951)320-2027.

Sincerely,



Michael J. Adackapara  
Division Chief