

## **Appendix K-2: Project Specific Water Quality Management Plan**

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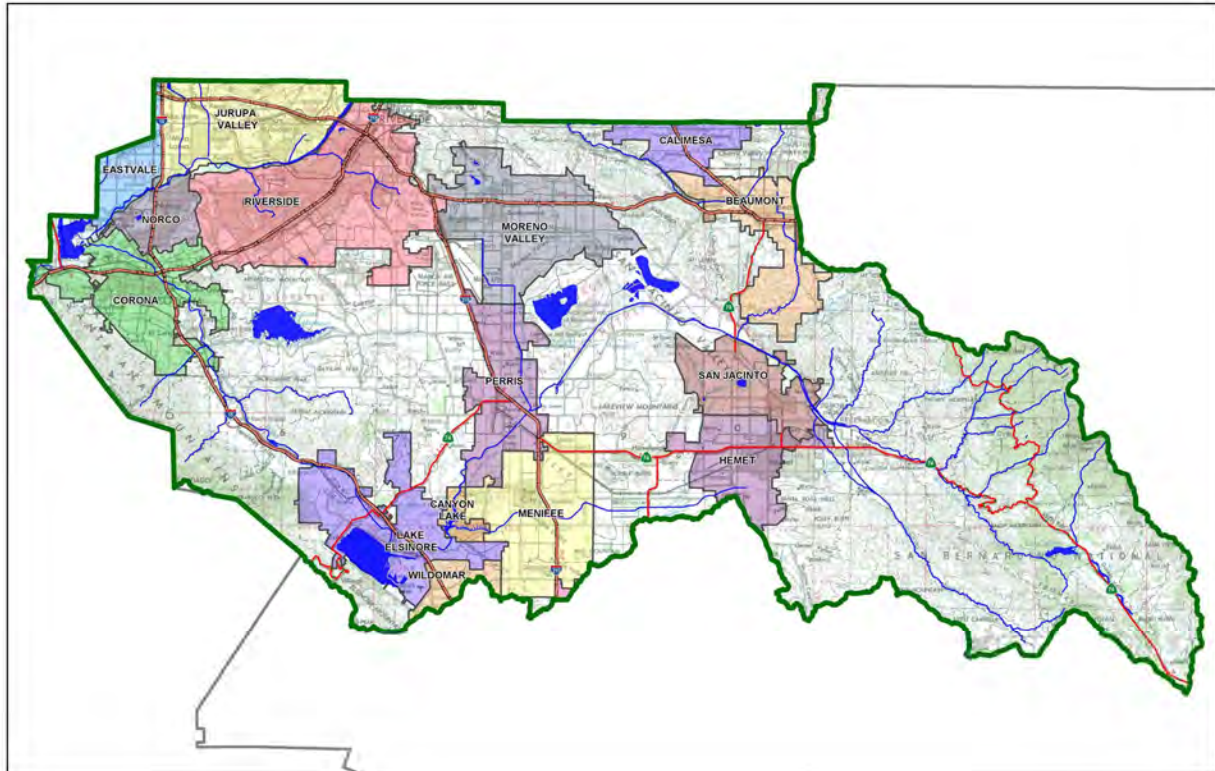
# Project Specific Water Quality Management Plan

A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County

**Project Title:** Green River Ranch Business Park

**Development No:** PP2020-0004

**Design Review/Case No:** PWWQ2021-0002 WQ20-006P



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Preliminary

Final

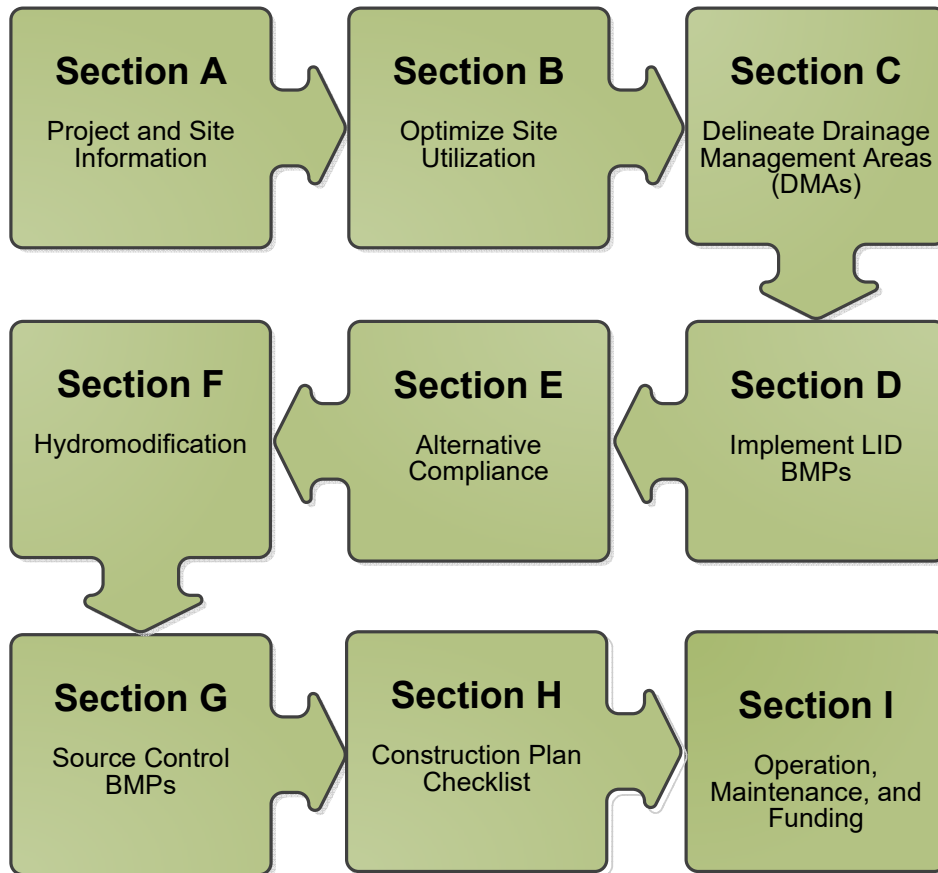
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*Prepared for Compliance with*  
**Regional Board Order No. R8-2010-0033**

## A Brief Introduction

This Project-Specific WQMP Template for the **Santa Ana Region** has been prepared to help guide you in documenting compliance for your project. Because this document has been designed to specifically document compliance, you will need to utilize the WQMP Guidance Document as your “how-to” manual to help guide you through this process. Both the Template and Guidance Document go hand-in-hand, and will help facilitate a well prepared Project-Specific WQMP. Below is a flowchart for the layout of this Template that will provide the steps required to document compliance.



## OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for Western Realco by KWC Engineers for the GREEN RIVER RANCH BUSINESS PARK project.

This WQMP is intended to comply with the requirements of City of Corona for Storm Water Quality Ordinance (Corona Municipal Code Section 15.36, Titla 13 Chapter 13.27 and City Council Ordinance No. 2291 and 2828) which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under City of Corona Water Quality Ordinance (Storm Water Quality Ordinance (Corona Municipal Code Section 15.36, Titla 13 Chapter 13.27 and City Council Ordinance No. 2291 and 2828)).

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

\_\_\_\_\_  
Owner's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Owner's Printed Name

\_\_\_\_\_  
Owner's Title/Position

## PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan meet the requirements of Regional Water Quality Control Board Order No. **R8-2010-0033** and any subsequent amendments thereto."

\_\_\_\_\_  
Preparer's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Preparer's Printed Name

\_\_\_\_\_  
Preparer's Title/Position

Preparer's Licensure:

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## Section A: Project and Site Information

| PROJECT INFORMATION  |  |
|--|--|
| Type of Project:   | Industrial   |
| Planning Area:   | Green River Ranch Specific Plan Amendment                        |
| Community Name:  | City of Corona   |
| Development Name:  | Green River Ranch Business Park                                  |
| PROJECT LOCATION   |  |
| Latitude & Longitude (DMS): 33° 52' 36" N, 117° 39' 20" W  |  |
| Project Watershed and Sub-Watershed: Santa Ana River Reach 2   |  |
| APN(s): 101-180-014-8, 101-180-037-9, 101-180-038-0, 101-180-015-9   |  |
| Map Book and Page No.: N/A   |  |
| PROJECT CHARACTERISTICS  |  |
| Proposed or Potential Land Use(s)  | Industrial   |
| Proposed or Potential SIC Code(s)  | N/A  |
| Area of Impervious Project Footprint (SF)  | 1,596,474  |
| Total Area of <u>proposed</u> Impervious Surfaces within the Project Limits (SF)/or Replacement  | 1,596,474  |
| Does the project consist of offsite road improvements?   | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |
| Does the project propose to construct unpaved roads?   | <input type="checkbox"/> Y <input checked="" type="checkbox"/> N |
| Is the project part of a larger common plan of development (phased project)?   | <input type="checkbox"/> Y <input checked="" type="checkbox"/> N |
| EXISTING SITE CHARACTERISTICS  |  |
| Total area of <u>existing</u> Impervious Surfaces within the project limits (SF)   | 0 sf   |
| Is the project located within any MSHCP Criteria Cell?   | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |
| If so, identify the Cell number:   | 1702, 1704, 1811, 1812   |
| Are there any natural hydrologic features on the project site?   | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |
| Is a Geotechnical Report attached?   | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |
| If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)  | B, D   |
| What is the Water Quality Design Storm Depth for the project?  |  |
| <p>Project Description:</p> <p>The Green River Ranch Business Park project is comprised of 151.09 acres of vacant land situated in the hills to the northeast of the City of Corona in Riverside County, California adjacent to Green River Road. The site is located roughly 2 miles east from the 91 and 71 freeway intersection, and approximately 5 miles east of Interstate 15 (I-15). Figure 1 in Appendix 1 shows a location map of the general area.</p> <p>The Green River Ranch Business Park project is generally bounded to the north and east by the vacant land and 91 freeway. Bounded on the south by hillside, and to the west by vacant land/commercial.</p> <p>The project site consists of sparsely vegetated and otherwise undeveloped land with the exception of dirt roads. The site is characterized by flat topography with hillside on the south which introduces offsite flow into the site. Small ravines are present which convey the natural drainage across the project site.</p> |  |



As proposed by the Green River Ranch Business Park project, the site consist of five industrial buildings that are 80,608 sf, 94,156 sf, 124,981 sf, 125,696 sf, and 285,574 sf within the Industrial land use designation. The proposed site is comprised of approximately 151.09 acres of undeveloped vacant land, and it is proposed that all 151.09 acres will be graded based on the conceptual grading plan.

The project proposes 10 Biotreatment Units (Modular Wetland System) and two underground detention chambers to provide water quality treatment for DMA 2 through DMA 11. DMA 1 was identified as a Self-Treating Area due to the lack of impervious surfaces and requires no BMP.

## A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the local vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas
- Proposed Structural BMPs
- Drainage Path
- Drainage Infrastructure, Inlets, Overflows
- Source Control BMPs
- Buildings, Roof Lines, Downspouts
- Impervious Surfaces
- Standard Labeling

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Co-Permittee plan reviewer must be able to easily analyze your project utilizing this template and its associated site plans and maps.

## A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the receiving waters that the project site is tributary to. Continue to fill each row with the Receiving Water’s 303(d) listed impairments (if any), designated beneficial uses, and proximity, if any, to a RARE beneficial use. Include a map of the receiving waters in Appendix 1.

**Table A.1** Identification of Receiving Waters

| Receiving Waters        | EPA Approved 303(d) List Impairments | Designated Beneficial Uses               | Proximity to RARE Beneficial Use |
|-------------------------|--------------------------------------|--|----------------------------------|
| Prado Dam               | N/A                                  | N/A                                      | N/A                              |
| Santa Ana River Reach 2 | N/A                                  | AGR, GWR, REC 1, REC 2, WARM, WILD, RARE | 4 miles                          |

## A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

| Agency  | Permit Required                       |                            |
|---|---------------------------------------|----------------------------|
| State Department of Fish and Game, 1602 Streambed Alteration Agreement  | <input checked="" type="checkbox"/> Y | <input type="checkbox"/> N |
| State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.                              | <input checked="" type="checkbox"/> Y | <input type="checkbox"/> N |
| US Army Corps of Engineers, CWA Section 404 Permit  | <input checked="" type="checkbox"/> Y | <input type="checkbox"/> N |
| US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion   | <input checked="" type="checkbox"/> Y | <input type="checkbox"/> N |
| Statewide Construction General Permit Coverage  | <input checked="" type="checkbox"/> Y | <input type="checkbox"/> N |
| Statewide Industrial General Permit Coverage  | <input checked="" type="checkbox"/> Y | <input type="checkbox"/> N |
| Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)   | <input checked="" type="checkbox"/> Y | <input type="checkbox"/> N |
| Other <i>(please list in the space below as required)</i><br>City of Corona Grading, Improvement, and Building Permits. | <input checked="" type="checkbox"/> Y | <input type="checkbox"/> N |

If yes is answered to any of the questions above, the Co-Permittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

## Section B: Optimize Site Utilization (LID Principles)

Review of the information collected in Section ‘A’ will aid in identifying the principal constraints on site design and selection of LID BMPs as well as opportunities to reduce imperviousness and incorporate LID Principles into the site and landscape design. For example, **constraints** might include impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, high-intensity land use, heavy pedestrian or vehicular traffic, utility locations or safety concerns. **Opportunities** might include existing natural areas, low areas, oddly configured or otherwise unbuildable parcels, easements and landscape amenities including open space and buffers (which can double as locations for bioretention BMPs), and differences in elevation (which can provide hydraulic head). Prepare a brief narrative for each of the site optimization strategies described below. This narrative will help you as you proceed with your LID design and explain your design decisions to others.

The 2010 Santa Ana MS4 Permit further requires that LID Retention BMPs (Infiltration Only or Harvest and Use) be used unless it can be shown that those BMPs are infeasible. Therefore, it is important that your narrative identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Similarly, you should also note opportunities that exist which will be utilized during project design. Upon completion of identifying Constraints and Opportunities, include these on your WQMP Site plan in Appendix 1.

### Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?

**Existing drainage patterns were preserved to have drainage flow in similar direction in the proposed as the existing.**

Did you identify and protect existing vegetation? If so, how? If not, why?

**The existing condition is graded and has minimal vegetation aside from some trees and bushes around the graded areas. The proposed condition will preserve the vegetation at the south near the hillside since that is the limit of the project, however, the vegetation onsite will be removed to develop the industrial project. The site will have slopes that will be vegetated to compensate.**

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?

**The site has poor infiltration rates so proprietary units will be used to treat the water before reintroducing it into the storm drain system.**

Did you identify and minimize impervious area? If so, how? If not, why?

**The impervious area has been minimized in relation to the size of the site and relative density of the development. The site design proposes private roadways, industrial lots, landscaped slopes, and natural open space. The proposed roadway widths are designed to meet City of Corona Standards.**

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?

**Yes, roof runoff has been designed to drain into roof down drains that will discharge the water into the drive aisle/gutter system. The water will flow into a catch basin that will capture the water and direct the flow to the MWS Units to treat the water and put it back into the Storm Drain system.**

## Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

**Table C.1 DMA Classifications**

| DMA Name or ID | Surface Type(s) <sup>1</sup>               | Area (Sq. Ft.) | DMA Type |
|----------------|--|----------------|----------|
| DMA 1          | Roofs,<br>Concrete/Asphalt,<br>Landscaping | 866,409        | Type D   |
| 1A             | Roofs                                      | 285,754        | Type D   |
| 1B             | Concrete/Asphalt                           | 263,103        | Type D   |
| 1C             | Landscaping                                | 317,552        | Type D   |
| DMA 2          | Concrete/Asphalt,<br>Landscaping           | 128,066        | Type D   |
| 2B             | Concrete/Asphalt                           | 70,567         | Type D   |
| 2C             | Landscaping                                | 57,499         | Type D   |
| DMA 3          | Concrete/Asphalt,<br>Landscaping           | 66,211         | Type D   |
| 3B             | Concrete/Asphalt                           | 47,045         | Type D   |
| 3C             | Landscaping                                | 19,166         | Type D   |
| DMA 4          | Roofs,<br>Concrete/Asphalt,<br>Landscaping | 507,038        | Type D   |
| 4A             | Roofs                                      | 250,034        | Type D   |
| 4B             | Concrete/Asphalt                           | 223,463        | Type D   |
| 4C             | Landscaping                                | 33,541         | Type D   |
| DMA 5          | Roofs,<br>Concrete/Asphalt,<br>Landscaping | 137,214        | Type D   |
| 5A             | Roofs                                      | 94,090         | Type D   |
| 5B             | Concrete/Asphalt                           | 38,768         | Type D   |
| 5C             | Landscaping                                | 4,356          | Type D   |
| DMA 6          | Roofs,<br>Concrete/Asphalt,<br>Landscaping | 123,274        | Type D   |
| 6A             | Roofs                                      | 80,150         | Type D   |
| 6B             | Concrete/Asphalt                           | 38,768         | Type D   |

|        |   |         |        |
|--------|---|---------|--------|
| 6C     | Landscaping   | 4,356   | Type D |
| DMA 7  | Roofs,<br>Concrete/Asphalt,<br>Landscaping, Natural | 230,433 | Type D |
| 7B     | Concrete/Asphalt                                    | 53,579  | Type D |
| 7C     | Landscaping   | 176,854 | Type D |
| DMA 8  | Roofs,<br>Concrete/Asphalt,<br>Landscaping, Natural | 133,294 | Type D |
| 8B     | Concrete/Asphalt                                    | 46,174  | Type D |
| 8C     | Landscaping   | 87,120  | Type D |
| DMA 9  | Concrete/Asphalt                                    | 13,068  | Type D |
| DMA 10 | Concrete/Asphalt                                    | 73,181  | Type D |

<sup>1</sup>Reference Table 2-1 in the WQMP Guidance Document to populate this column

**Table C.2 Type 'A', Self-Treating Areas**

| DMA Name or ID | Area (Sq. Ft.) | Stabilization Type | Irrigation Type (if any) |
|----------------|----------------|--------------------|--------------------------|
|                |                |                    |                          |
|                |                |                    |                          |

**Table C.3 Type 'B', Self-Retaining Areas**

| Self-Retaining Area |                           |                    |                      | Type 'C' DMAs that are draining to the Self-Retaining Area |                    |                                   |
|---------------------|---------------------------|--------------------|----------------------|--|--------------------|-----------------------------------|
| DMA Name/ ID        | Post-project surface type | Area (square feet) | Storm Depth (inches) | DMA Name/ ID   | [C] from Table C.4 | Required Retention Depth (inches) |
|                     |                           | [A]                | [B]                  |  | [C]                | [D]                               |
| N/A                 |                           |                    |                      |  |                    |                                   |
|                     |                           |                    |                      |  |                    |                                   |

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

**Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas**

| DMA | Receiving Self-Retaining DMA |
|-----|------------------------------|
|-----|------------------------------|

| DMA Name/ ID | Area (square feet) | Post-project surface type | Runoff factor | Product         | DMA name /ID | Area (square feet) | Ratio   |
|--------------|--------------------|---------------------------|---------------|-----------------|--------------|--------------------|---------|
|              | [A]                |                           | [B]           | [C] = [A] x [B] |              | [D]                | [C]/[D] |
| N/A          |                    |                           |               |                 |              |                    |         |
|              |                    |                           |               |                 |              |                    |         |

**Table C.5 Type 'D', Areas Draining to BMPs**

| DMA Name or ID | BMP Name or ID                  |
|----------------|---------------------------------|
| DMA 1          | Underground Detention Basin "A" |
| DMA 2          | Bio-Treatment MWS               |
| DMA 3          | Bio-Treatment MWS               |
| DMA 4          | Underground Detention Basin "B" |
| DMA 5          | Bio-Treatment MWS               |
| DMA 6          | Bio-Treatment MWS               |
| DMA 7          | Bio-Treatment MWS               |
| DMA 8          | Bio-Treatment MWS               |
| DMA 9          | Bio-Treatment MWS               |
| DMA 10         | Bio-Treatment MWS               |

*Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.*

## Section D: Implement LID BMPs

### D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)?  Y  N

If yes has been checked, Infiltration BMPs shall not be used for the site. If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

### Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermitee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document?  Y  N

**Infiltration Feasibility**

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

| Does the project site...   | YES | NO |
|--|-----|----|
| ...have any DMAs with a seasonal high groundwater mark shallower than 10 feet?<br>X If Yes, list affected DMAs:  |     | X  |
| ...have any DMAs located within 100 feet of a water supply well?<br>If Yes, list affected DMAs:  |     | X  |
| ...have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?<br>If Yes, list affected DMAs: |     | X  |
| ...have measured in-situ infiltration rates of less than 1.6 inches / hour?<br>If Yes, list affected DMAs:   |     | X  |
| ...have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?<br>If Yes, list affected DMAs:           | X   |    |
| ...geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?<br>Describe here:   |     | X  |

If you answered “Yes” to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.

## D.2 Harvest and Use Assessment

Please check what applies:

- Reclaimed water will be used for the non-potable water demands for the project.
- Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).
- The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If neither of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

### Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

*Total Area of Irrigated Landscape: 15.65 AC.*

*Type of Landscaping (Conservation Design or Active Turf): Conservation Design*

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

*Total Area of Impervious Surfaces: 36.65 AC.*

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-3 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

*Enter your EIATIA factor: 2.92*

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

*Minimum required irrigated area: 107.02 AC.*

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

| <b>Minimum required irrigated area (Step 4)</b> | <b>Available Irrigated Landscape (Step 1)</b> |
|---|---|
| 107.02 AC.                                      | 15.65 AC.                                     |



## Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

*Projected Number of Daily Toilet Users: 1,200*

*Project Type: Industrial*

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

*Total Area of Impervious Surfaces: 36.65 AC.*

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-2 in Chapter 2 to determine the minimum number of toilet users per tributary impervious acre (TUTIA).

*Enter your TUTIA factor: 255*

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

*Minimum number of toilet users: 9,346*

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

| <b>Minimum required Toilet Users (Step 4)</b> | <b>Projected number of toilet users (Step 1)</b> |
|---|--|
| 9,346   | 1,200  |

## Other Non-Potable Use Feasibility

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

N/A

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

*Average Daily Demand: 14,400 gpd*

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

*Total Area of Impervious Surfaces: 36.65 AC.*

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-4 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

*Enter the factor from Table 2-3: 1,403*

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of gallons per day of non-potable use that would be required.

*Minimum required use: 51,419.95 gpd*

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

| <b>Minimum required non-potable use (Step 4)</b> | <b>Projected average daily use (Step 1)</b> |
|--|---|
| 51,419.95 gpd                                    | 14,400 gpd                                  |

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment, unless a site-specific analysis has been completed that demonstrates technical infeasibility as noted in D.3 below.

### **D.3 Bioretention and Biotreatment Assessment**

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.4.7 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

*Select one of the following:*

- ✓** LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the project as noted below in Section D.4 (note the requirements of Section 3.4.2 in the WQMP Guidance Document).
- A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

## D.4 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.2 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.2 LID Prioritization Summary Matrix

| DMA Name/ID | LID BMP Hierarchy        |                          |                          |                                     | No LID (Alternative Compliance) |
|-------------|--------------------------|--------------------------|--------------------------|-------------------------------------|---------------------------------|
|             | 1. Infiltration          | 2. Harvest and use       | 3. Bioretention          | 4. Biotreatment                     |                                 |
| DMA 1       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>        |
| DMA 2       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>        |
| DMA 3       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>        |
| DMA 4       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>        |
| DMA 5       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>        |
| DMA 6       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>        |
| DMA 7       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>        |
| DMA 8       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>        |
| DMA 9       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>        |
| DMA 10      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>        |

## D.5 LID BMP Sizing

Each LID BMP must be designed to ensure that the Design Capture Volume will be addressed by the selected BMPs. First, calculate the Design Capture Volume for each LID BMP using the  $V_{BMP}$  worksheet in Appendix F of the LID BMP Design Handbook. Second, design the LID BMP to meet the required  $V_{BMP}$  using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.3 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.3 DCV Calculations for LID BMPs

| DMA Type/ID      | DMA Area (sqft) | Post-Project Surface Type | Effective Impervious Fraction, $I_f$ | DMA Runoff Factor | DMA Areas x Runoff Factor | Detention Basin "A"            |   |  |
|------------------|-----------------|---------------------------|--------------------------------------|-------------------|---------------------------|--------------------------------|---|--|
| DMA 1            | [A]             |                           | [B]                                  | [C]               | [A] x [C]                 |                                |   |  |
| <b>Roofs</b>     | 285,754         | Roofs                     | 1                                    | 0.89              | 254,893                   | <i>Design Storm Depth (in)</i> | <i>Design Capture Volume, <math>V_{BMP}</math> (cubic feet)</i> | <i>Proposed Volume on Plans (cubic feet)</i> |
| <b>Street</b>    | 263,103         | Concrete or Asphalt       | 1                                    | 0.892             | 234,688                   |                                |   |  |
| <b>Landscape</b> | 317,552         | Ornamental Landscaping    | 0.1                                  | 0.1104558         | 35,076                    |                                |   |  |
|                  |                 |                           |                                      |                   |                           |                                |   |  |
|                  |                 |                           |                                      |                   |                           |                                |   |  |
|                  | $A_T = 866,409$ |                           |                                      |                   | $\Sigma = 524,657$        | [E] = 1.0                      | 43,721  | 52,779                                       |

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

BMP Design Capture Volume ( $V_{BMP}$ ) worksheets are included Appendix 6

| DMA Type/ID      | DMA Area (sqft) | Post-Project Surface Type | Effective Impervious Fraction, $I_f$ | DMA Runoff Factor | DMA Areas x Runoff Factor | Detention Basin "B"            |   |  |
|------------------|-----------------|---------------------------|--------------------------------------|-------------------|---------------------------|--------------------------------|---|--|
| DMA 4            | [A]             |                           | [B]                                  | [C]               | [A] x [C]                 |                                |   |  |
| <b>Roofs</b>     | 250,034         | Roofs                     | 1                                    | 0.89              | 223,030                   | <i>Design Storm Depth (in)</i> | <i>Design Capture Volume, <math>V_{BMP}</math> (cubic feet)</i> | <i>Proposed Volume on Plans (cubic feet)</i> |
| <b>Street</b>    | 223,463         | Concrete or Asphalt       | 1                                    | 0.892             | 199,329                   |                                |   |  |
| <b>Landscape</b> | 33,541          | Ornamental Landscaping    | 0.1                                  | 0.1104558         | 3,705                     |                                |   |  |
|                  | $A_T = 507,038$ |                           |                                      |                   | $\Sigma = 426,064$        | [E] = 1.0                      | 35,505  | 35,688                                       |

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

BMP Design Capture Volume ( $V_{BMP}$ ) worksheets are included Appendix 6

| DMA Type/ID      | DMA Area (sqft)          | Post-Project Surface Type | Effective Impervious Fraction, I <sub>f</sub> | DMA Runoff Factor | DMA Area x Runoff Factor | MWS UNIT - 2                             |                               |                                 |
|------------------|--------------------------|---------------------------|---|-------------------|--------------------------|--|-------------------------------|---------------------------------|
| DMA 2            |                          |                           |   |                   |                          |  |                               |                                 |
| <b>Street</b>    | 70,567                   | Concrete or Asphalt       | 1   | 0.892             | 62,946                   | <i>Design Rainfall Intensity (in/hr)</i> | <i>Design Flow Rate (cfs)</i> | <i>Proposed Flow Rate (cfs)</i> |
| <b>Landscape</b> | 57,499                   | Ornamental Landscaping    | 0.1   | 0.110458          | 6,351                    |  |                               |                                 |
|                  |                          |                           |   |                   |                          |  |                               |                                 |
|                  | A <sub>T</sub> = 128,066 |                           |   |                   | Σ= 69,297                | 0.20                                     | 0.3                           | 0.346                           |

Design Flow Rate calculated in accordance with Worksheet 9 of the Stormwater Quality Best Management Practice Design Handbook. BMP Design Flow Rate (Q<sub>BMP</sub>) worksheets are included in Appendix 6

| DMA Type/ID      | DMA Area (sqft)         | Post-Project Surface Type | Effective Impervious Fraction, I <sub>f</sub> | DMA Runoff Factor | DMA Area x Runoff Factor | MWS UNIT - 3                             |                               |                                 |
|------------------|-------------------------|---------------------------|---|-------------------|--------------------------|--|-------------------------------|---------------------------------|
| DMA 3            |                         |                           |   |                   |                          |  |                               |                                 |
| <b>Street</b>    | 47,045                  | Concrete or Asphalt       | 1   | 0.892             | 41,964                   | <i>Design Rainfall Intensity (in/hr)</i> | <i>Design Flow Rate (cfs)</i> | <i>Proposed Flow Rate (cfs)</i> |
| <b>Landscape</b> | 19,166                  | Ornamental Landscaping    | 0.1   | 0.110458          | 2,117                    |  |                               |                                 |
|                  |                         |                           |   |                   |                          |  |                               |                                 |
|                  | A <sub>T</sub> = 66,211 |                           |   |                   | Σ= 44,081                | 0.20                                     | 0.3                           | 0.206                           |

Design Flow Rate calculated in accordance with Worksheet 9 of the Stormwater Quality Best Management Practice Design Handbook. BMP Design Flow Rate (Q<sub>BMP</sub>) worksheets are included in Appendix 6

| DMA Type/ID      | DMA Area (sqft)          | Post-Project Surface Type | Effective Impervious Fraction, I <sub>f</sub> | DMA Runoff Factor | DMA Area x Runoff Factor | MWS UNIT - 5                             |                               |                                 |
|------------------|--------------------------|---------------------------|---|-------------------|--------------------------|--|-------------------------------|---------------------------------|
| DMA 5            |                          |                           |   |                   |                          |  |                               |                                 |
| <b>Roofs</b>     | 94,090                   | Roofs                     | 1   | 0.89              | 83,928                   | <i>Design Rainfall Intensity (in/hr)</i> | <i>Design Flow Rate (cfs)</i> | <i>Proposed Flow Rate (cfs)</i> |
| <b>Street</b>    | 38,768                   | Concrete or Asphalt       | 1   | 0.892             | 34,581                   |  |                               |                                 |
| <b>Landscape</b> | 4,356                    | Ornamental Landscaping    | 0.1   | 0.110458          | 481                      |  |                               |                                 |
|                  |                          |                           |   |                   |                          |  |                               |                                 |
|                  | A <sub>T</sub> = 137,214 |                           |   |                   | Σ= 118,991               | 0.20                                     | 0.5                           | 0.577                           |

Design Flow Rate calculated in accordance with Worksheet 9 of the Stormwater Quality Best Management Practice Design Handbook. BMP Design Flow Rate (Q<sub>BMP</sub>) worksheets are included in Appendix 6

| DMA Type/ID      | DMA Area (sqft)          | Post-Project Surface Type | Effective Impervious Fraction, I <sub>f</sub> | DMA Runoff Factor | DMA Area x Runoff Factor | MWS UNIT - 6                             |                               |                                 |
|------------------|--------------------------|---------------------------|---|-------------------|--------------------------|--|-------------------------------|---------------------------------|
| DMA 6            |                          |                           |   |                   |                          |  |                               |                                 |
| <b>Roofs</b>     | 80,150                   | Roofs                     | 1   | 0.89              | 71,494                   | <i>Design Rainfall Intensity (in/hr)</i> | <i>Design Flow Rate (cfs)</i> | <i>Proposed Flow Rate (cfs)</i> |
| <b>Street</b>    | 38,768                   | Concrete or Asphalt       | 1   | 0.892             | 34,581                   |  |                               |                                 |
| <b>Landscape</b> | 4,356                    | Ornamental Landscaping    | 0.1   | 0.110458          | 481                      |  |                               |                                 |
|                  | A <sub>T</sub> = 123,274 |                           |   |                   | Σ= 106,556               | 0.20                                     | 0.50                          | 0.577                           |

Design Flow Rate calculated in accordance with Worksheet 9 of the Stormwater Quality Best Management Practice Design Handbook. BMP Design Flow Rate (Q<sub>BMP</sub>) worksheets are included in Appendix 6

| DMA Type/ID      | DMA Area (sq ft)         | Post-Project Surface Type | Effective Impervious Fraction, I <sub>f</sub> | DMA Runoff Factor | DMA Area x Runoff Factor | MWS UNIT - 7                             |                               |                                 |
|------------------|--------------------------|---------------------------|---|-------------------|--------------------------|--|-------------------------------|---------------------------------|
| DMA 7            |                          |                           |   |                   |                          |  |                               |                                 |
| <b>Street</b>    | 53,579                   | Concrete or Asphalt       | 1   | 0.892             | 47,793                   | <i>Design Rainfall Intensity (in/hr)</i> | <i>Design Flow Rate (cfs)</i> | <i>Proposed Flow Rate (cfs)</i> |
| <b>Landscape</b> | 176,854                  | Ornamental Landscaping    | 0.1   | 0.110458          | 19,535                   |  |                               |                                 |
|                  |                          |                           |   |                   |                          |  |                               |                                 |
|                  | A <sub>T</sub> = 230,433 |                           |   |                   | Σ= 67,327                | 0.20                                     | 0.30                          | 0.346                           |

Design Flow Rate calculated in accordance with Worksheet 9 of the Stormwater Quality Best Management Practice Design Handbook. BMP Design Flow Rate (Q<sub>BMP</sub>) worksheets are included in Appendix 6

| DMA Type/ID      | DMA Area (sqft)          | Post-Project Surface Type | Effective Impervious Fraction, I <sub>f</sub> | DMA Runoff Factor | DMA Area x Runoff Factor | MWS UNIT - 8                             |                               |                                 |
|------------------|--------------------------|---------------------------|---|-------------------|--------------------------|--|-------------------------------|---------------------------------|
| DMA 8            |                          |                           |   |                   |                          |  |                               |                                 |
| <b>Street</b>    | 46,174                   | Concrete or Asphalt       | 1   | 0.892             | 41,187                   | <i>Design Rainfall Intensity (in/hr)</i> | <i>Design Flow Rate (cfs)</i> | <i>Proposed Flow Rate (cfs)</i> |
| <b>Landscape</b> | 87,120                   | Ornamental Landscaping    | 0.1   | 0.110458          | 9,623                    |  |                               |                                 |
|                  |                          |                           |   |                   |                          |  |                               |                                 |
|                  | A <sub>T</sub> = 133,294 |                           |   |                   | Σ= 50,810                | 0.20                                     | 0.2                           | 0.206                           |

Design Flow Rate calculated in accordance with Worksheet 9 of the Stormwater Quality Best Management Practice Design Handbook. BMP Design Flow Rate (Q<sub>BMP</sub>) worksheets are included in Appendix 6

| DMA Type/ID   | DMA Area (square feet)  | Post-Project Surface Type | Effective Impervious Fraction, I <sub>f</sub> | DMA Runoff Factor | DMA Area x Runoff Factor | MWS UNIT - 9                             |                               |                                 |
|---------------|-------------------------|---------------------------|---|-------------------|--------------------------|--|-------------------------------|---------------------------------|
| DMA 9         |                         |                           |   |                   |                          |  |                               |                                 |
| <b>Street</b> | 13,068                  | Concrete or Asphalt       | 1   | 0.892             | 11,657                   | <i>Design Rainfall Intensity (in/hr)</i> | <i>Design Flow Rate (cfs)</i> | <i>Proposed Flow Rate (cfs)</i> |
|               |                         |                           |   |                   |                          |  |                               |                                 |
|               | A <sub>T</sub> = 13,068 |                           |   |                   | Σ= 11,657                | 0.20                                     | 0.1                           | 0.115                           |

Design Flow Rate calculated in accordance with Worksheet 9 of the Stormwater Quality Best Management Practice Design Handbook. BMP Design Flow Rate (Q<sub>BMP</sub>) worksheets are included in Appendix 6

| DMA Type/ID   | DMA Area (square feet)  | Post-Project Surface Type | Effective Impervious Fraction, I <sub>f</sub> | DMA Runoff Factor | DMA Area x Runoff Factor | MWS UNIT - 10                            |                               |                                 |
|---------------|-------------------------|---------------------------|---|-------------------|--------------------------|--|-------------------------------|---------------------------------|
| DMA 10        |                         |                           |   |                   |                          |  |                               |                                 |
| <b>Street</b> | 73,181                  | Concrete or Asphalt       | 1   | 0.892             | 65,278                   | <i>Design Rainfall Intensity (in/hr)</i> | <i>Design Flow Rate (cfs)</i> | <i>Proposed Flow Rate (cfs)</i> |
|               |                         |                           |   |                   |                          |  |                               |                                 |
|               | A <sub>T</sub> = 73,181 |                           |   |                   | Σ= 65,278                | 0.20                                     | 0.3                           | 0.346                           |

Design Flow Rate calculated in accordance with Worksheet 9 of the Stormwater Quality Best Management Practice Design Handbook. BMP Design Flow Rate (Q<sub>BMP</sub>) worksheets are included in Appendix 6

## Section E: Alternative Compliance (LID Waiver Program)

LID BMPs are expected to be feasible on virtually all projects. Where LID BMPs have been demonstrated to be infeasible as documented in Section D, other Treatment Control BMPs must be used (subject to LID waiver approval by the Copermittee). Check one of the following Boxes:

- LID Principles and LID BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- Or -

- The following Drainage Management Areas are unable to be addressed using LID BMPs. A site-specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Co-Permittee and included in Appendix 5. Additionally, no downstream regional and/or sub-regional LID BMPs exist or are available for use by the project. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated.

## E.1 Identify Pollutants of Concern

Utilizing Table A.1 from Section A above which noted your project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table E.1 below. If the identified General Pollutant Categories are the same as those listed for your receiving waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

**Table E.1 Potential Pollutants by Land Use Type**

| Priority Development Project Categories and/or Project Features (check those that apply) | General Pollutant Categories |                          |                          |                          |                          |                          |                          |                          |
|--|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|  | Bacterial Indicators         | Metals                   | Nutrients                | Pesticides               | Toxic Organic Compounds  | Sediments                | Trash & Debris           | Oil & Grease             |
| <input type="checkbox"/> Detached Residential Development                                | P                            | N                        | P                        | P                        | N                        | P                        | P                        | P                        |
| <input type="checkbox"/> Attached Residential Development                                | P                            | N                        | P                        | P                        | N                        | P                        | P                        | P <sup>(2)</sup>         |
| <input checked="" type="checkbox"/> Commercial/Industrial Development                    | P <sup>(3)</sup>             | P                        | P <sup>(1)</sup>         | P <sup>(1)</sup>         | P <sup>(5)</sup>         | P <sup>(1)</sup>         | P                        | P                        |
| <input type="checkbox"/> Automotive Repair Shops   | N                            | P                        | N                        | N                        | P <sup>(4, 5)</sup>      | N                        | P                        | P                        |
| <input type="checkbox"/> Restaurants (>5,000 ft <sup>2</sup> )                           | P                            | N                        | N                        | N                        | N                        | N                        | P                        | P                        |
| <input type="checkbox"/> Hillside Development (>5,000 ft <sup>2</sup> )                  | P                            | N                        | P                        | P                        | N                        | P                        | P                        | P                        |
| <input checked="" type="checkbox"/> Parking Lots (>5,000 ft <sup>2</sup> )               | P <sup>(6)</sup>             | P                        | P <sup>(1)</sup>         | P <sup>(1)</sup>         | P <sup>(4)</sup>         | P <sup>(1)</sup>         | P                        | P                        |
| <input type="checkbox"/> Retail Gasoline Outlets   | N                            | P                        | N                        | N                        | P                        | N                        | P                        | P                        |
| <b>Project Priority Pollutant(s) of Concern</b>  | <input type="checkbox"/>     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

*P = Potential*

*N = Not Potential*

<sup>(1)</sup> A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected

<sup>(2)</sup> A potential Pollutant if the project includes uncovered parking areas; otherwise not expected

<sup>(3)</sup> A potential Pollutant is land use involving animal waste

<sup>(4)</sup> Specifically petroleum hydrocarbons

<sup>(5)</sup> Specifically solvents

<sup>(6)</sup> Bacterial indicators are routinely detected in pavement runoff



## E.2 Stormwater Credits

Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table E.2 Water Quality Credits

| Qualifying Project Categories              | Credit Percentage <sup>2</sup> |
|--|--------------------------------|
| N/A  |                                |
|  |                                |
|  |                                |
| <i>Total Credit Percentage<sup>1</sup></i> |                                |

<sup>1</sup>Cannot Exceed 50%

<sup>2</sup>Obtain corresponding data from Table 3-8 in the WQMP Guidance Document

## E.3 Sizing Criteria

After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.

Table E.3 Treatment Control BMP Sizing

| DMA Type/ID | DMA Area (square feet) | Post-Project Surface Type | Effective Impervious Fraction, I <sub>r</sub> | DMA Runoff Factor | DMA Area x Runoff Factor | <i>MWS UNIT</i>         |   |                                      |  |
|-------------|------------------------|---------------------------|---|-------------------|--------------------------|-------------------------|---|--------------------------------------|--|
|             |                        |                           |   |                   |                          | Design Storm Depth (in) | Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs) | Total Storm Water Credit % Reduction | Proposed Volume or Flow on Plans (cubic feet or cfs) |
| N/A         | [A]                    |                           | [B]   | [C]               | [A] x [C]                |                         |   |                                      |  |
|             |                        |                           |   |                   |                          |                         |   |                                      |  |
|             |                        |                           |   |                   |                          |                         |   |                                      |  |
|             |                        |                           |   |                   |                          |                         |   |                                      |  |
|             |                        |                           |   |                   |                          |                         |   |                                      |  |
|             |                        |                           |   |                   |                          |                         |   |                                      |  |

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12

[H] is from the Total Credit Percentage as Calculated from Table E.2 above

[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

## E.4 Treatment Control BMP Selection

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High:** equal to or greater than 80% removal efficiency
- **Medium:** between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

**Table E.4 Treatment Control BMP Selection**

| Selected Treatment Control BMP Name or ID <sup>1</sup> | Priority Pollutant(s) of Concern to Mitigate <sup>2</sup>  | Removal Efficiency Percentage <sup>3</sup> |
|--|--|--|
| Detention Basin "A"                                    | Bacteria, Metals, Nutrients, Pesticides, Toxic Organic Compounds, Sediment, Trash and Debris, Oil and Grease | 60% Medium                                 |
| MWS Unit 2   | Bacteria, Metals, Nutrients, Pesticides, Toxic Organic Compounds, Sediment, Trash and Debris, Oil and Grease | 60% Medium                                 |
| MWS Unit 3   | Bacteria, Metals, Nutrients, Pesticides, Toxic Organic Compounds, Sediment, Trash and Debris, Oil and Grease | 60% Medium                                 |
| Detention Basin "B"                                    | Bacteria, Metals, Nutrients, Pesticides, Toxic Organic Compounds, Sediment, Trash and Debris, Oil and Grease | 60% Medium                                 |
| MWS Unit 5   | Bacteria, Metals, Nutrients, Pesticides, Toxic Organic Compounds, Sediment, Trash and Debris, Oil and Grease | 60% Medium                                 |
| MWS Unit 6   | Bacteria, Metals, Nutrients, Pesticides, Toxic Organic Compounds, Sediment, Trash and Debris, Oil and Grease | 60% Medium                                 |
| MWS Unit 7   | Bacteria, Metals, Nutrients, Pesticides, Toxic Organic Compounds, Sediment, Trash and Debris, Oil and Grease | 60% Medium                                 |
| MWS Unit 8   | Bacteria, Metals, Nutrients, Pesticides, Toxic Organic Compounds, Sediment, Trash and Debris, Oil and Grease | 60% Medium                                 |
| MWS Unit 9   | Bacteria, Metals, Nutrients, Pesticides, Toxic Organic Compounds, Sediment, Trash and Debris, Oil and Grease | 60% Medium                                 |

|             |   |            |
|-------------|---|------------|
|             | Compounds, Sediment, Trash and Debris, Oil and Grease   |            |
| MWS Unit 10 | Bacteria, Metals, Nutrients, Pesticides, Toxic Organic, Compounds, Sediment, Trash and Debris, Oil and Grease | 60% Medium |

<sup>1</sup> Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.

<sup>2</sup> Cross Reference Table E.1 above to populate this column.

<sup>3</sup> As documented in a Co-Permittee Approved Study and provided in Appendix 6.

## Section F: Hydromodification

### F.1 Hydrologic Conditions of Concern (HCOC) Analysis

Once you have determined that the LID design is adequate to address water quality requirements, you will need to assess if the proposed LID Design may still create a HCOC. Review Chapters 2 and 3 (including Figure 3-7) of the WQMP Guidance Document to determine if your project must mitigate for Hydromodification impacts. If your project meets one of the following criteria which will be indicated by the check boxes below, you do not need to address Hydromodification at this time. However, if the project does not qualify for Exemptions 1, 2 or 3, then additional measures must be added to the design to comply with HCOC criteria. This is discussed in further detail below in Section F.2.

**HCOC EXEMPTION 1:** The Priority Development Project disturbs less than one acre. The Co-Permittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption?  Y  N

If Yes, HCOC criteria do not apply.

**HCOC EXEMPTION 2:** The volume and time of concentration<sup>1</sup> of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption?  Y  N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

**Table F.1** Hydrologic Conditions of Concern Summary

|                              | 2 year – 24 hour |                |              |
|------------------------------|------------------|----------------|--------------|
|                              | Pre-condition    | Post-condition | % Difference |
| <b>Time of Concentration</b> | -                | -              | -            |
| <b>Volume (Cubic Feet)</b>   | -                | -              | -            |

<sup>1</sup> Time of concentration is defined as the time after the beginning of the rainfall when all portions of the drainage basin are contributing to flow at the outlet.

**HCOC EXEMPTION 3:** All downstream conveyance channels to an adequate sump (for example, Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River, or other lake, reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Sensitivity Maps.

Does the project qualify for this HCOC Exemption?       Y       N

If Yes, HCOC criteria do not apply and note below which adequate sump applies to this HCOC qualifier:

Project drains to Prado Dam.

## F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

- a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.
- b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.
- c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

Be sure to include all pertinent documentation used in your analysis of the items a, b or c in Appendix 7.

## Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and “housekeeping”, that must be implemented by the site’s occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. **Identify Pollutant Sources:** Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.
2. **Note Locations on Project-Specific WQMP Exhibit:** Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.
3. **Prepare a Table and Narrative:** Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of runoff Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.
4. **Identify Operational Source Control BMPs:** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

**Table G.1** Permanent and Operational Source Control Measures

| Potential Sources of Runoff pollutants | Permanent Structural Source Control BMPs   | Operational Source Control BMPs  |
|--|--|--|
| On-site Storm Drain Inlets             | <ul style="list-style-type: none"> <li>Mark all inlets with the words “Only Rain Down the Storm Drain” or similar. Catch Basin Markers shall be per local agency requirements</li> </ul> | <ul style="list-style-type: none"> <li>Maintain and periodically repaint or replace inlet markings.</li> <li>Provide Stormwater pollution prevention informations to new site owners, lessees, or operators.</li> <li>See applicable operational BMPs in Fact Sheet SC-44, “Drainage System Maintenance,” in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a></li> </ul> |

|                                  |   |   |
|----------------------------------|---|---|
|                                  |   | <ul style="list-style-type: none"> <li>• Include the following in lease agreements: “Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains.”</li> </ul>  |
| Landscape/ Outdoor Pesticide Use | <p>Final landscape plans will accomplish all of the following:</p> <ul style="list-style-type: none"> <li>• Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.</li> <li>• Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.</li> <li>• Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.</li> <li>• Consider using pest-resistant plants, especially adjacent to hardscape.</li> <li>• To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.</li> </ul> | <ul style="list-style-type: none"> <li>• Maintain landscaping using minimum or no pesticides.</li> <li>• See applicable operational BMPs in “What you should know for.....landscape and Gardening” at <a href="http://rcflood.org/stormwater/">http://rcflood.org/stormwater/</a></li> <li>• Provide IPM information to new owners, lessees and operators.</li> </ul> |
| Loading Docks                    |   | <ul style="list-style-type: none"> <li>• Move loaded and unloaded items indoors as soon as possible</li> <li>• See Fact Sheet SC-30, “Outdoor Loading and Unloading,” in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmhandbooks.com">www.cabmhandbooks.com</a></li> </ul>  |

|  |  |  |
|--|--|--|
| <p>Fire Sprinkler Test Water</p>   | <ul style="list-style-type: none"> <li>• Provide a means to drain fire sprinkler water to the sanitary sewer.</li> </ul>                                   | <ul style="list-style-type: none"> <li>• See the note in Fact Sheets SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at <a href="http://www.cabmphandbooks.com">www.cabmphandbooks.com</a></li> </ul> |
| <p>Miscellaneous Drain or Wash Water of Other Sources<br/>Roofing, gutters, and trim</p> | <ul style="list-style-type: none"> <li>• Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff</li> </ul> |  |
| <p>Plazas, sidewalks, and parking lots</p>   |  | <ul style="list-style-type: none"> <li>• Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris.</li> </ul>  |



## Section H: Construction Plan Checklist

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

**Table H.1 Construction Plan Cross-reference**

| BMP No. or ID | BMP Identifier and Description           | Corresponding Plan Sheet(s) |
|---------------|--|-----------------------------|
| MWS Unit 1    | Underground Detention Basin (Basin "A")  | Precise Plan                |
| MWS Unit 2    | Modular Wetland System Unit (MWS-L-8-12) | Precise Plan                |
| MWS Unit 3    | Modular Wetland System Unit (MWS-L-4-17) | Precise Plan                |
| MWS Unit 4    | Underground Detention Basin (Basin "B")  | Precise Plan                |
| MWS Unit 5    | Modular Wetland System Unit (MWS-L-8-20) | Precise Plan                |
| MWS Unit 6    | Modular Wetland System Unit (MWS-L-8-20) | Precise Plan                |
| MWS Unit 7    | Modular Wetland System Unit (MWS-L-8-12) | Precise Plan                |
| MWS Unit 8    | Modular Wetland System Unit (MWS-L-4-17) | Precise Plan                |
| MWS Unit 9    | Modular Wetland System Unit (MWS-L-4-8)  | Precise Plan                |
| MWS Unit 10   | Modular Wetland System Unit (MWS-L-4-8)  | Precise Plan                |

## Section I: Operation, Maintenance and Funding

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

**Maintenance Mechanism:** HOA

Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

Y       N

Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.