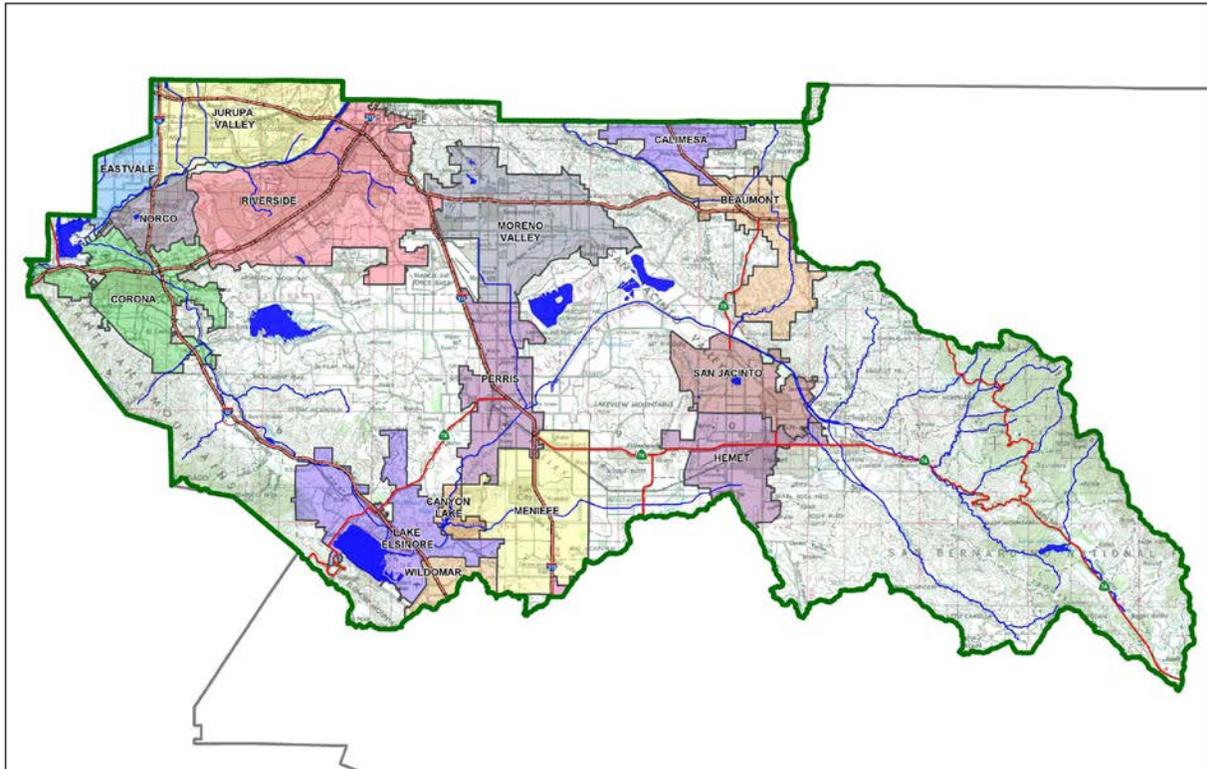


Project Specific Water Quality Management Plan

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

Project Title: Wake Rider Beach Park



- Preliminary
- Final

Original Date Prepared: December 8, 2014

Revision Date(s): April 11, 2015

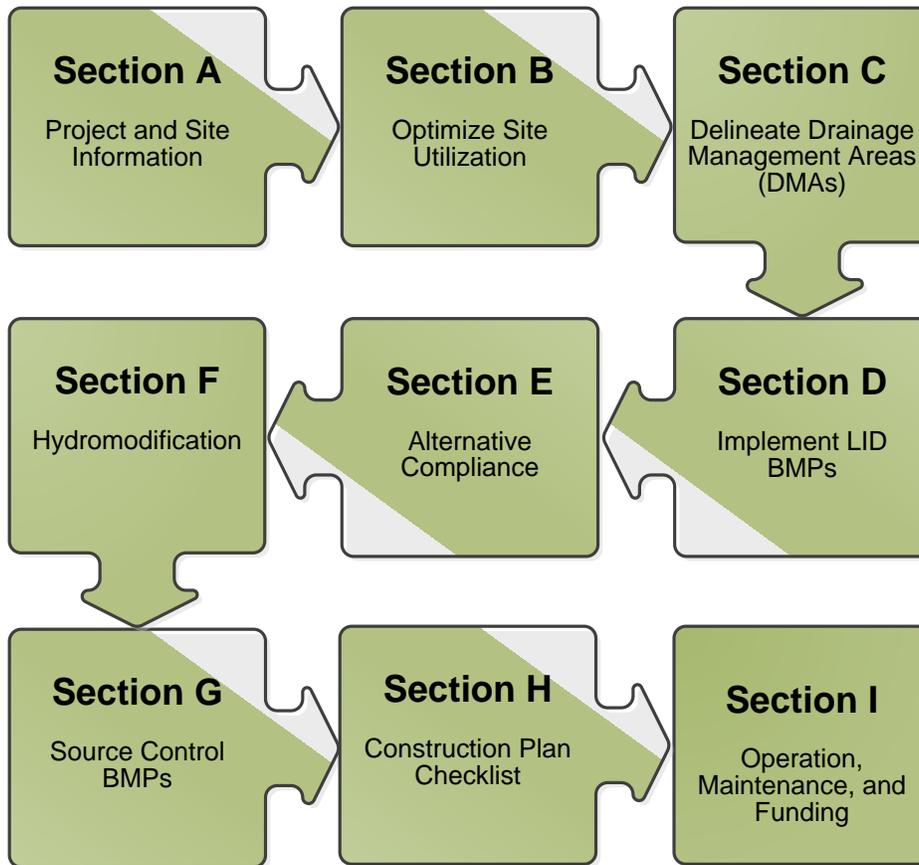
*Prepared for Compliance with
Regional Board Order No. **R8-2010-0033***

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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 John Gamble by Medofer Engineering Inc. for the Wake Rider Beach Park project.

This WQMP is intended to comply with the requirements of the City of Lake Elsinore for the Conditional Use Permit for Wake Rider Beach park 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 Lake Elsinore Water Quality Ordinance (Municipal Code Section 14.08).

"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

John Gamble
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

Michael A. Medofer
Preparer's Printed Name

Civil Engineer
Preparer's Title/Position

Preparer's Licensure:

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Section A: Project and Site Information

PROJECT INFORMATION	
Type of Project:	Commercial
Planning Area:	Lakeland Village
Community Name:	Lake Elsinore
Development Name:	Wake Rider Beach Park
PROJECT LOCATION	
Latitude & Longitude (DMS): 33°39'42", -117°22'31"	
Project Watershed and Sub-Watershed: Santa Ana Watershed, San Jacinto River Sub-watershed	
APN(s): 381-040-005	
Map Book and Page No.: Page 865, Grid C-6	
PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	Recreation
Proposed or Potential SIC Code(s)	7990 (Amusement and Recreation Places)
Area of Impervious Project Footprint (SF)	55,963 sq. ft.
Total Area of <u>proposed</u> Impervious Surfaces within the Project Limits (SF)/or Replacement	55,963 sq. ft.
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 (Previous development has been removed)
Is the project located within any MSHCP Criteria Cell?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
If so, identify the Cell number:	N/A
Are there any natural hydrologic features on the project site?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Is a Geotechnical Report attached?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	C
What is the Water Quality Design Storm Depth for the project?	0.93 inches

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
Lake Elsinore HU #802.31	Nutrients-Organic Compounds/Oxygen Demanding Substances-Sediments/Turbidity-Unknown Toxicity	REC1-REC2- WARM-WILD	Not Designated as RARE

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 type="checkbox"/> Y	<input checked="" type="checkbox"/> N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N
US Army Corps of Engineers Permit	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
US Fish and Wildlife Permit	<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 type="checkbox"/> Y	<input checked="" type="checkbox"/> N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N
City of Lake Elsinore Grading Permit	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
FEMA CLOMR/LOMR	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
California Dept. of Fish and Wildlife Permit	<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?

Yes, to the extent possible. Existing drainage pattern is sheet flow easterly directly into Lake Elsinore. Due to the site development, proposed runoff will drain into concrete gutters within pavement areas that will disperse into vegetated swales. Storm flows will be routed through the vegetated swales, then flow into culverts that discharge onto the concrete boat ramp that drains directly into Lake Elsinore.

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

No. Existing vegetation consists of native brush and grasses, as well as several large non-native trees, that will be removed and replaced with native, drought-tolerant vegetation.

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

Yes. Project proposes to drain into landscape areas to the extent possible.

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

Yes. The impervious areas, building footprints, paving areas, sidewalks, and other hardscape was designed to the minimum requirements as specified by the City of Lake Elsinore development standards.

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

Yes. Project is designed to drain to landscape areas to infiltrate to the extent possible before discharging.

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) ¹	Area (Sq. Ft.)	DMA Type
DMA1	Concrete or asphalt, ornamental landscape	35,284	Type D Areas that drain to BMPs
DMA2	Roof, concrete or asphalt, ornamental landscape	26,572	Type D Areas that drain to BMPs

¹Reference 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]	

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

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]

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

DMA Name or ID	BMP Name or ID
DMA1	Vegetated Swale
DMA2	Vegetated Swale

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.

Site drains directly to Lake Elsinore.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermitttee 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? If Yes, list affected DMAs:		X
...have any DMAs located within 100 feet of a water supply well? 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? If Yes, list affected DMAs:		X
...have measured in-situ infiltration rates of less than 1.6 inches / hour? 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? If Yes, list affected DMAs:		X
...geotechnical report identify other site-specific factors that would preclude effective and safe infiltration? 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:

Type of Landscaping (Conservation Design or Active Turf):

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:

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:

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:

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).

Minimum required irrigated area (Step 4)	Available Irrigated Landscape (Step 1)

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:

Project Type:

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:

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-1 in Chapter 2 to determine the minimum number of toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor:

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:

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).

Minimum required Toilet Users (Step 4)

Projected number of toilet users (Step 1)

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.

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:

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:

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

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

Minimum required use:

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).

Minimum required non-potable use (Step 4)	Projected average daily use (Step 1)

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	
DMA1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DMA2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For those DMAs where LID BMPs are not feasible, provide a brief narrative below summarizing why they are not feasible, include your technical infeasibility criteria in Appendix 5, and proceed to Section E below to document Alternative Compliance measures for those DMAs. Recall that each proposed DMA must pass through the LID BMP hierarchy before alternative compliance measures may be considered.

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 (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	Enter BMP Name / Identifier Here		
	[A]		[B]	[C]	[A] x [C]			
DMA1	35,284	<i>mixed surfaces</i>	0.74	0.53	18,701	<i>Design Storm Depth (in)</i>	<i>Design Capture Volume, V_{BMP} (cubic feet)</i>	<i>Proposed Volume on Plans (cubic feet)</i>
DMA2	26,572	<i>mixed surfaces</i>	0.81	0.71	18,866			
	61,856				37,567	0.93	2,911	2,978

[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

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed 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 ⁽²⁾
<input type="checkbox"/> Commercial/Industrial Development	P ⁽³⁾	P	P ⁽¹⁾	P ⁽¹⁾	P ⁽⁵⁾	P ⁽¹⁾	P	P
<input type="checkbox"/> Automotive Repair Shops	N	P	N	N	P ^(4, 5)	N	P	P
<input type="checkbox"/> Restaurants (>5,000 ft ²)	P	N	N	N	N	N	P	P
<input type="checkbox"/> Hillside Development (>5,000 ft ²)	P	N	P	P	N	P	P	P
<input checked="" type="checkbox"/> Parking Lots (>5,000 ft ²)	P ⁽⁶⁾	P	P ⁽¹⁾	P ⁽¹⁾	P ⁽⁴⁾	P ⁽¹⁾	P	P
<input type="checkbox"/> Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	<input checked="" type="checkbox"/>							

P = Potential

N = Not Potential

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

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

⁽³⁾ A potential Pollutant is land use involving animal waste

⁽⁴⁾ Specifically petroleum hydrocarbons

⁽⁵⁾ Specifically solvents

⁽⁶⁾ 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 ²
<i>Total Credit Percentage¹</i>	

¹Cannot Exceed 50%

²Obtain 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 _f	DMA Runoff Factor	DMA Area x Runoff Factor	Enter BMP Name / Identifier Here			
	[A]		[B]	[C]	[A] x [C]				
						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)
	$A_T = \sum[A]$				$\Sigma = [D]$	[E]	$[F] = \frac{[D] \times [E]}{[G]}$	$[F] \times (1-[H])$	[I]

[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 ¹	Priority Pollutant(s) of Concern to Mitigate ²	Removal Efficiency Percentage ³
DMA1	Bacterial Indicators, Metals, Nutrients, Pesticides, Toxic Organic Compounds, Sediments, Trash & Debris, Oil & Grease	Medium
DMA2	Bacterial Indicators, Metals, Nutrients, Pesticides, Toxic Organic Compounds, Sediments, Trash & Debris, Oil & Grease	Medium

¹ 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.

² Cross Reference Table E.1 above to populate this column.

³ 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 Copermitttee 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 concentration¹ 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
Time of Concentration			
Volume (Cubic Feet)			

¹ 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 directly into Lake Elsinore.

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
Bacterial Indicators	Vegetated Swale to be constructed and maintained by private property owner	Parking Lot Sweeping (to be funded by private property owner)
Metals	Vegetated Swale to be constructed and maintained by private property owner	Parking Lot Sweeping (to be funded by private property owner)
Nutrients	Vegetated Swale to be constructed and maintained by private property owner	
Pesticides	Vegetated Swale to be constructed and maintained by private property owner	

Toxic Organic Compounds	Vegetated Swale to be constructed and maintained by private property owner	
Sediments	Vegetated Swale to be constructed and maintained by private property owner	Parking Lot Sweeping (to be funded by private property owner)
Trash & Debris		Trash pick-up & removal by site maintenance personnel (to be funded by private property owner)
Oil & Grease	Vegetated Swale to be constructed and maintained by private property owner	Parking Lot Sweeping (to be funded by private property owner)

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)
DMA1	VEGETATED SWALE	PRELIMINARY GRADING PLAN
DMA2	VEGETATED SWALE	PRELIMINARY GRADING PLAN

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

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: BMPs will be operated and maintained by the property owner.

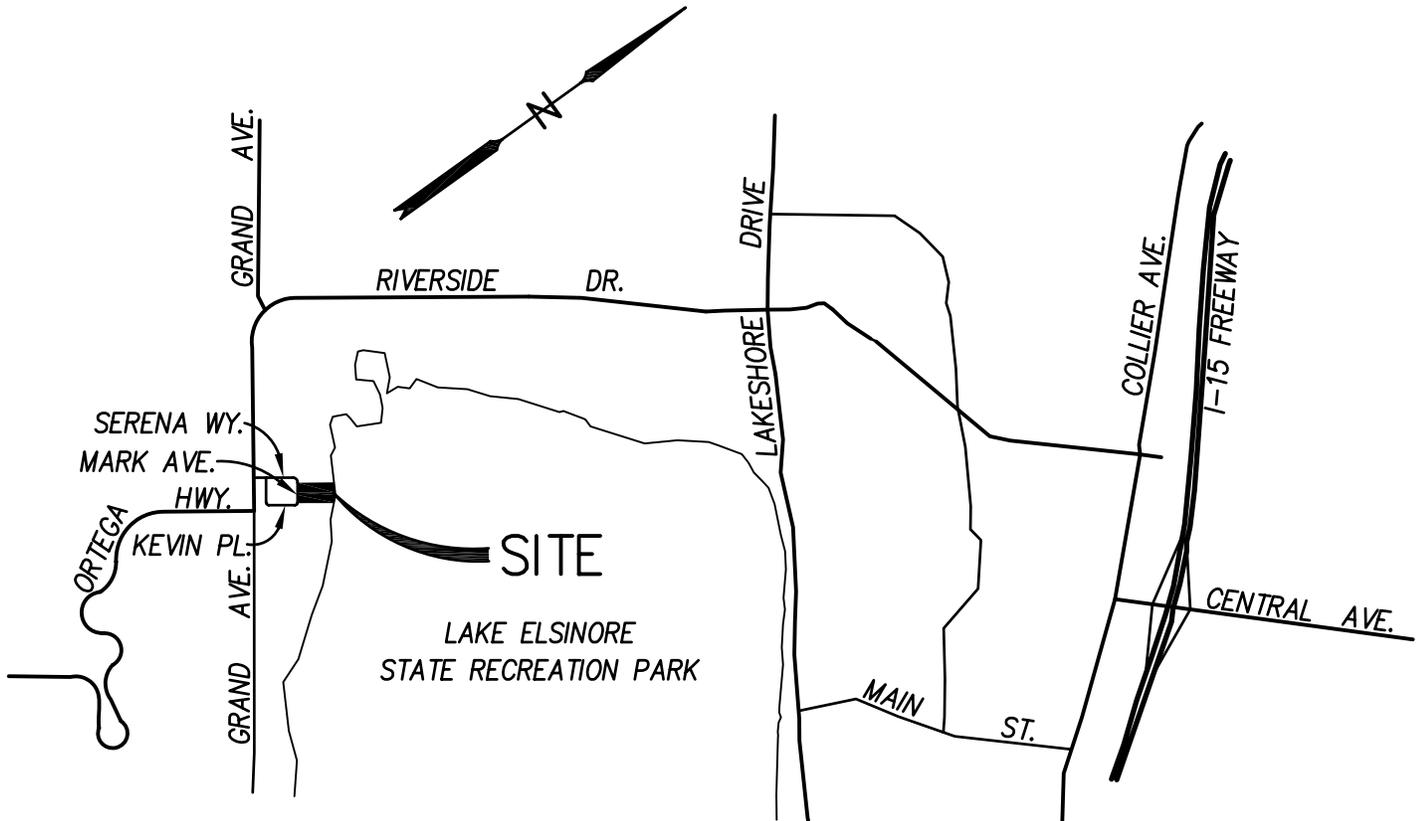
Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

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.

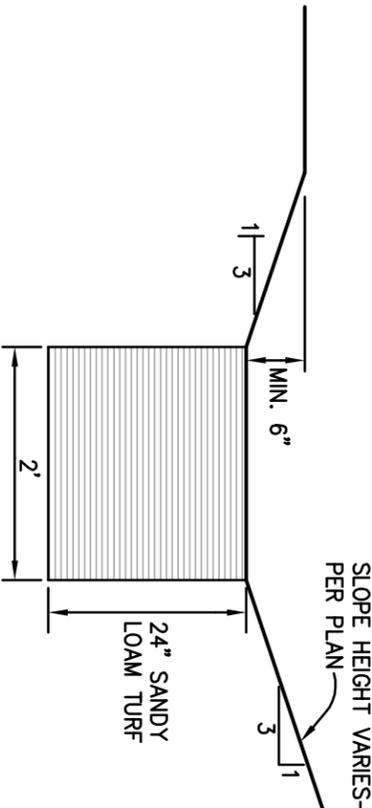
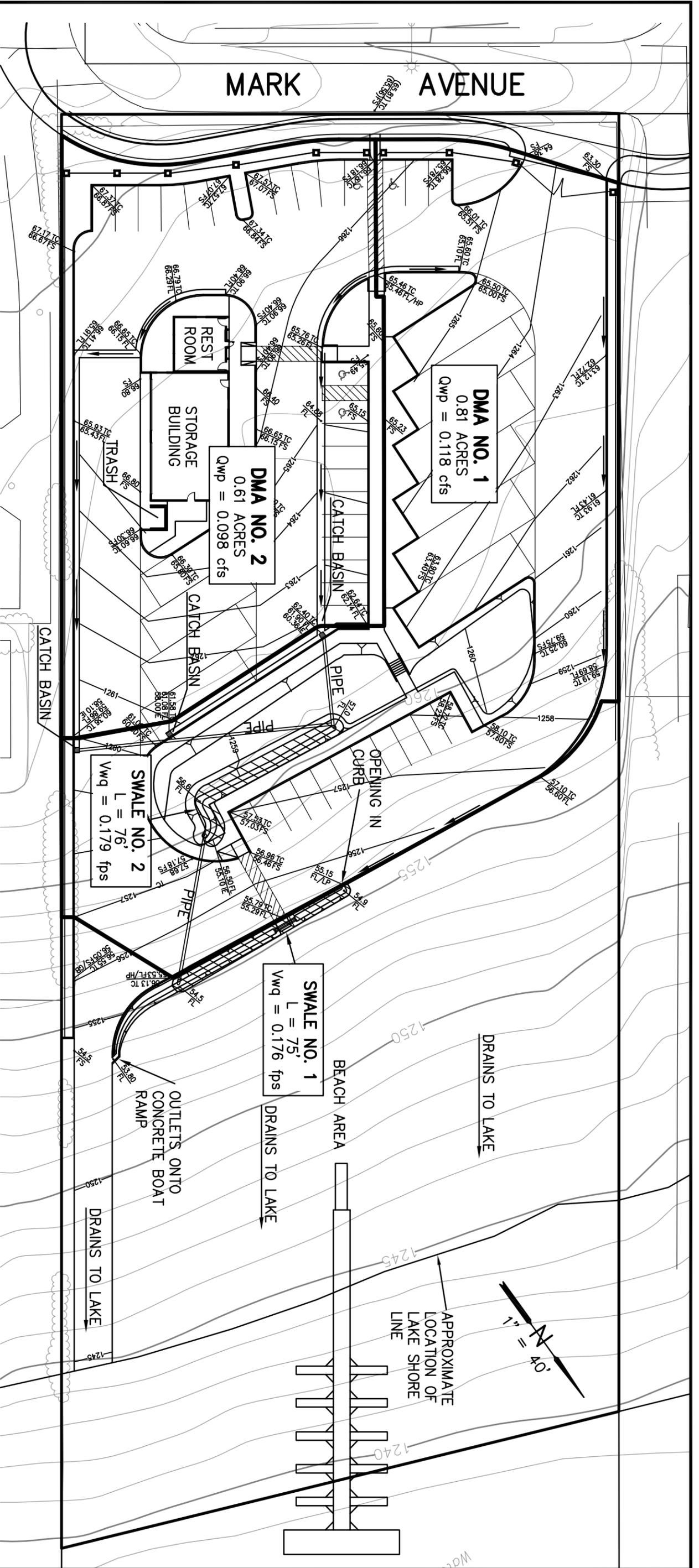
Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map



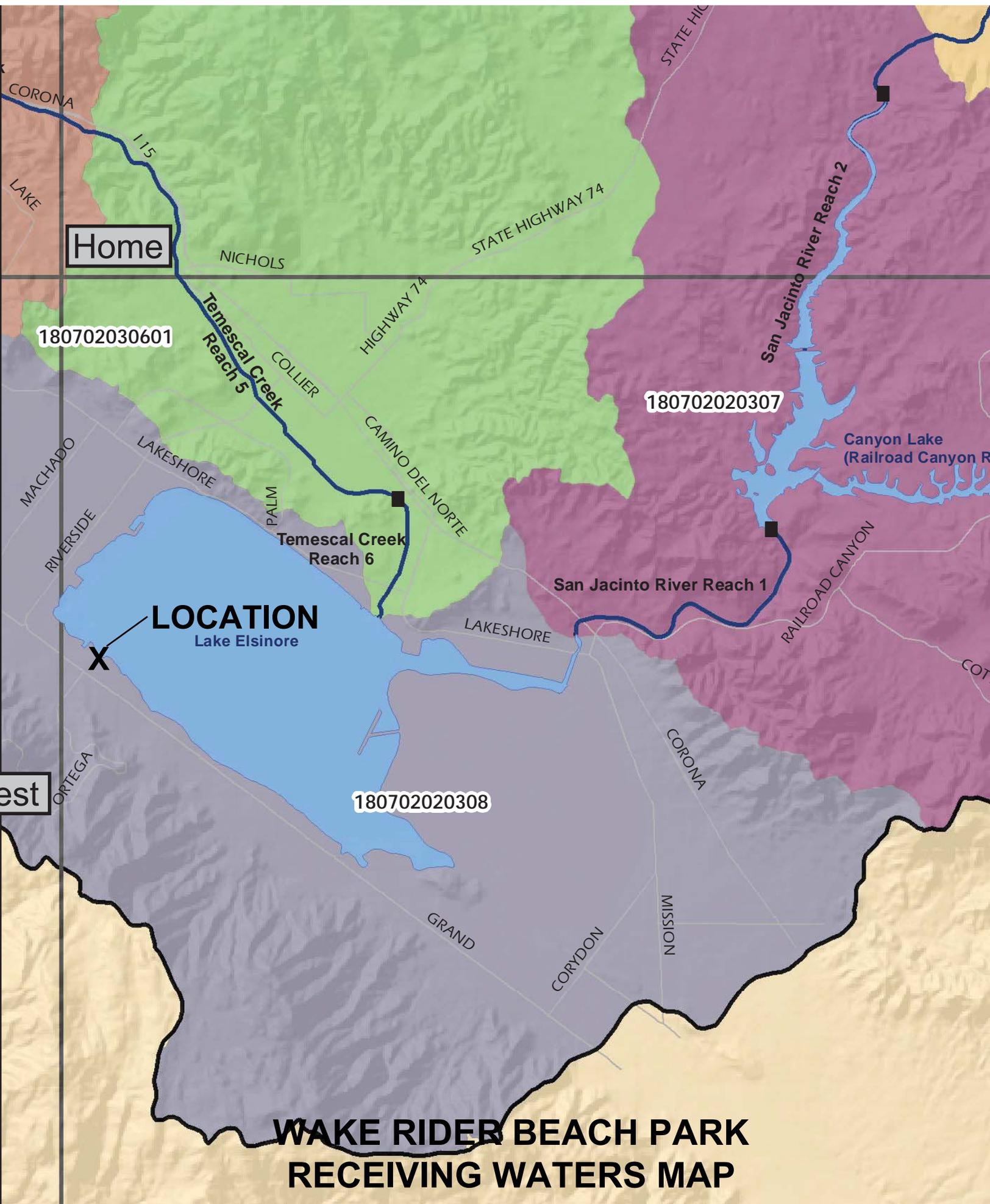
VICINITY MAP
NO SCALE

SECTION 1, TOWNSHIP 6 SOUTH RANGE 5 WEST
THOMAS BROS. GUIDE: PAGE 865, GRID J-6 (2004 EDITION)



WQMP SITE PLAN
WAKE RIDER BEACH PARK
 A.P.N. 381-040-005
 LAKE ELSINORE, CALIFORNIA

SECTION: VEGETATED SWALE
 NO SCALE



WAKE RIDER BEACH PARK RECEIVING WATERS MAP

Appendix 2: Construction Plans

Grading and Drainage Plans

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

Will Submit With Final WQMP

Appendix 4: Historical Site Conditions

Phase I Environmental Site Assessment or Other Information on Past Site Use

Not Applicable

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis

Not Applicable

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

Design Procedure Form for Design Flow	
Uniform Intensity Design Flow	
Designer:	Mike Medofer
Company:	Medofer Engineering
Date:	11/13/12
Project:	Wake Rider Beach Park
Location:	APN 381-040-005, Mark Ave, Lake Elsinore
1. Determine Impervious Percentage	
a. Determine total tributary area	$A_{total} = \underline{0.61}$ acres (1)
b. Determine Impervious %	$i = \underline{87}$ % (2)
2. Determine Runoff Coefficient Values Use Table 4 and impervious % found in step 1	
a. A Soil Runoff Coefficient	$C_a = \underline{0.77}$ (3)
b. B Soil Runoff Coefficient	$C_b = \underline{0.79}$ (4)
c. C Soil Runoff Coefficient	$C_c = \underline{0.80}$ (5)
d. D Soil Runoff Coefficient	$C_d = \underline{0.81}$ (6)
3. Determine the Area decimal fraction of each soil type in tributary area	
a. Area of A Soil / (1) =	$A_a = \underline{0}$ (7)
b. Area of B Soil / (1) =	$A_b = \underline{1}$ (8)
c. Area of C Soil / (1) =	$A_c = \underline{0}$ (9)
d. Area of D Soil / (1) =	$A_d = \underline{0}$ (10)
4. Determine Runoff Coefficient	
a. $C = (3) \times (7) + (4) \times (8) + (5) \times (9) + (6) \times (10) =$	$C = \underline{0.79}$ (11)
5. Determine BMP Design flow	
a. $Q_{BMP} = C \times I \times A = (11) \times 0.2 \times (1)$	$Q_{BMP} = \underline{0.096}$ $\frac{ft^3}{s}$ (12)

AREA 1

Design Procedure Form for Grassed Swale	
Designer: <u>Mike Medofer</u> Company: <u>Medofer Engineering</u> Date: <u>11/13/12</u> Project: <u>Wake Rider Beach Parks</u> Location: <u>APN 381-040-005, Mark Ave, Lake Elsinore</u>	
1. Determine Design Flow (Use Worksheet 2)	$Q_{BMP} = \underline{0.096}$ cfs
2. Swale Geometry a. Swale bottom width (b) b. Side slope (z) c. Flow direction slope (s)	$b = \underline{2}$ ft $z = \underline{3:1}$ $s = \underline{0.66}$ %
3. Design flow velocity (Manning n = 0.2)	$v = \underline{0.179}$ ft/s
4. Depth of flow (D)	$D = \underline{0.205}$ ft
5. Design Length (L) $L = (7 \text{ min}) \times (\text{flow velocity, ft/sec}) \times 60$	$7 \times 0.179 \times 60 = 75.2$ $L = \underline{76}$ ft
6. Vegetation (describe)	<u>Non-erosive, drought resistant native plants</u>
8. Outflow Collection (check type used or describe "other")	<input type="checkbox"/> Grated Inlet <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Underdrain <input checked="" type="checkbox"/> Other <u>Riser & Pipe</u>
Notes: <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	

AREA 1 - SWALE 1

Design Procedure Form for Design Flow Uniform Intensity Design Flow	
Designer: <u>Mike Medofer</u> Company: <u>Medofer Engineering</u> Date: <u>11/13/12</u> Project: <u>Wake Rider Beach Park</u> Location: <u>APN 381-040-005, Mark Ave, Lake Elsinore</u>	
1. Determine Impervious Percentage a. Determine total tributary area b. Determine Impervious %	$A_{total} = \underline{0.81} \text{ acres (1)}$ $i = \underline{74} \% \text{ (2)}$
2. Determine Runoff Coefficient Values Use Table 4 and impervious % found in step 1 a. A Soil Runoff Coefficient b. B Soil Runoff Coefficient c. C Soil Runoff Coefficient d. D Soil Runoff Coefficient	$C_a = \underline{0.69} \text{ (3)}$ $C_b = \underline{0.71} \text{ (4)}$ $C_c = \underline{0.73} \text{ (5)}$ $C_d = \underline{0.74} \text{ (6)}$
3. Determine the Area decimal fraction of each soil type in tributary area a. Area of A Soil / (1) = b. Area of B Soil / (1) = c. Area of C Soil / (1) = d. Area of D Soil / (1) =	$A_a = \underline{0} \text{ (7)}$ $A_b = \underline{1} \text{ (8)}$ $A_c = \underline{0} \text{ (9)}$ $A_d = \underline{0} \text{ (10)}$
4. Determine Runoff Coefficient a. $C = (3) \times (7) + (4) \times (8) + (5) \times (9) + (6) \times (10) =$	$C = \underline{0.71} \text{ (11)}$
5. Determine BMP Design flow a. $Q_{BMP} = C \times I \times A = (11) \times 0.2 \times (1)$	$0.71 \times 0.2 \times 0.81$ $Q_{BMP} = \underline{0.115} \frac{\text{ft}^3}{\text{s}} \text{ (12)}$

AREA 2

Design Procedure Form for Grassed Swale

Designer: Mike Medofer
 Company: Medofer Engineering
 Date: 11/13/12
 Project: Water Rider Beach Park
 Location: APN 381-040-005, Mark Ave, Lake Elsinore

1. Determine Design Flow (Use Worksheet 2)	$Q_{BMP} = \underline{0.115}$ cfs
2. Swale Geometry a. Swale bottom width (b) b. Side slope (z) c. Flow direction slope (s)	$b = \underline{2}$ ft $z = \underline{3:1}$ $s = \underline{0.33}$ %
3. Design flow velocity (Manning n = 0.2)	$v = \underline{0.176}$ ft/s
4. Depth of flow (D)	$D = \underline{0.240}$ ft
5. Design Length (L) $L = (7 \text{ min}) \times (\text{flow velocity, ft/sec}) \times 60$	$7 \times 0.176 \times 60 = 73.9$ $L = \underline{75}$ ft
6. Vegetation (describe)	<u>Non-erosive, drought tolerant native plants</u>
8. Outflow Collection (check type used or describe "other")	<input type="checkbox"/> Grated Inlet' <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Underdrain <input checked="" type="checkbox"/> Other <u>Riser & Pipe</u>

Notes:

AREA 2 - SWALE 2

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

Not Applicable

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

How to use this worksheet (also see instructions in Section G of the WQMP Template):

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies.
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your WQMP Exhibit.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs in your WQMP. Use the format shown in Table G.1 on page 23 of this WQMP Template. Describe your specific BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting BMPs or substituting alternative BMPs for those shown here.

IF THESE SOURCES WILL BE ON THE PROJECT SITE THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
<input checked="" type="checkbox"/> A. On-site storm drain inlets	<input checked="" type="checkbox"/> Locations of inlets.	<input checked="" type="checkbox"/> Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.	<input checked="" type="checkbox"/> Maintain and periodically repaint or replace inlet markings. <input type="checkbox"/> Provide stormwater pollution prevention information to new site owners, lessees, or operators. <input type="checkbox"/> See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com <input type="checkbox"/> 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."
<input type="checkbox"/> B. Interior floor drains and elevator shaft sump pumps		<input type="checkbox"/> State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.	<input type="checkbox"/> Inspect and maintain drains to prevent blockages and overflow.
<input type="checkbox"/> C. Interior parking garages		<input type="checkbox"/> State that parking garage floor drains will be plumbed to the sanitary sewer.	<input type="checkbox"/> Inspect and maintain drains to prevent blockages and overflow.

Wake Rider Beach Park

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
<input type="checkbox"/> D1. Need for future indoor & structural pest control		<input type="checkbox"/> Note building design features that discourage entry of pests.	<input type="checkbox"/> Provide Integrated Pest Management information to owners, lessees, and operators.
<input checked="" type="checkbox"/> D2. Landscape/ Outdoor Pesticide Use	<input type="checkbox"/> Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained. <input type="checkbox"/> Show self-retaining landscape areas, if any. <input checked="" type="checkbox"/> Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)	<p>State that final landscape plans will accomplish all of the following.</p> <input type="checkbox"/> Preserve existing native trees, shrubs, and ground cover to the maximum extent possible. <input checked="" type="checkbox"/> 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. <input type="checkbox"/> Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. <input checked="" type="checkbox"/> Consider using pest-resistant plants, especially adjacent to hardscape. <input checked="" type="checkbox"/> To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	<input checked="" type="checkbox"/> Maintain landscaping using minimum or no pesticides. <input type="checkbox"/> See applicable operational BMPs in “What you should know for.....Landscape and Gardening” at http://rcflood.org/stormwater/Error Hypertext reference not valid. <input type="checkbox"/> Provide IPM information to new owners, lessees and operators.

STORM WATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE			
1	2	3	4
IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	Permanent Controls—Show on WQMP Drawings	Permanent Controls—List in WQMP Table and Narrative	Operational BMPs—Include in WQMP Table and Narrative
<p>Potential Sources of Runoff Pollutants</p> <p><input type="checkbox"/> E. Pools, spas, ponds, decorative fountains, and other water features.</p>	<p><input type="checkbox"/> Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet. (Exception: Public pools must be plumbed according to County Department of Environmental Health Guidelines.)</p>	<p>If the Co-Permittee requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.</p>	<p><input type="checkbox"/> See applicable operational BMPs in "Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain" at http://rcflood.org/stormwater/</p>
<p><input type="checkbox"/> F. Food service</p>	<p><input type="checkbox"/> For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment.</p> <p><input type="checkbox"/> On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.</p>	<p><input type="checkbox"/> Describe the location and features of the designated cleaning area.</p> <p><input type="checkbox"/> Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.</p>	<p><input type="checkbox"/> See the brochure, "The Food Service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries" at http://rcflood.org/stormwater/</p> <p>Provide this brochure to new site owners, lessees, and operators.</p>
<p><input checked="" type="checkbox"/> G. Refuse areas</p>	<p><input checked="" type="checkbox"/> Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas.</p> <p><input type="checkbox"/> If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent runoff and show locations of berms to prevent runoff from the area.</p> <p><input type="checkbox"/> Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.</p>	<p><input type="checkbox"/> State how site refuse will be handled and provide supporting detail to what is shown on plans.</p> <p><input checked="" type="checkbox"/> State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.</p>	<p><input type="checkbox"/> State how the following will be implemented:</p> <p>Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com</p>

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE			
<p>1</p> <p>Potential Sources of Runoff Pollutants</p> <p><input type="checkbox"/> H. Industrial processes.</p>	<p>2</p> <p>Permanent Controls—Show on WQMP Drawings</p> <p><input type="checkbox"/> Show process area.</p>	<p>3</p> <p>Permanent Controls—List in WQMP Table and Narrative</p> <p><input type="checkbox"/> If industrial processes are to be located on site, state: "All process activities to be performed indoors. No processes to drain to exterior or to storm drain system."</p>	<p>4</p> <p>Operational BMPs—Include in WQMP Table and Narrative</p> <p><input type="checkbox"/> See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com</p> <p>See the brochure "Industrial & Commercial Facilities Best Management Practices for Industrial, Commercial Facilities" at http://rcflood.org/stormwater/</p>

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

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<p align="center">1</p> <p>Potential Sources of Runoff Pollutants</p>	<p align="center">2</p> <p>Permanent Controls—Show on WQMP Drawings</p>	<p align="center">3</p> <p>Permanent Controls—List in WQMP Table and Narrative</p>	<p align="center">4</p> <p>Operational BMPs—Include in WQMP Table and Narrative</p>
<p><input type="checkbox"/> I. Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)</p>	<p><input type="checkbox"/> Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent runoff or run-off from area.</p> <p><input type="checkbox"/> Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults.</p> <p><input type="checkbox"/> Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.</p>	<p>Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains.</p> <p>Where appropriate, reference documentation of compliance with the requirements of Hazardous Materials Programs for:</p> <ul style="list-style-type: none"> ▪ Hazardous Waste Generation ▪ Hazardous Materials Release Response and Inventory ▪ California Accidental Release (CalARP) ▪ Aboveground Storage Tank ▪ Uniform Fire Code Article 80 Section 103(b) & (c) 1991 ▪ Underground Storage Tank <p>www.cchealth.org/groups/hazmat/</p>	<p><input type="checkbox"/> See the Fact Sheets SC-31, “Outdoor Liquid Container Storage” and SC-33, “Outdoor Storage of Raw Materials” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com</p>

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<p align="center">1 Potential Sources of Runoff Pollutants</p>	<p align="center">2 Permanent Controls—Show on WQMP Drawings</p>	<p align="center">3 Permanent Controls—List in WQMP Table and Narrative</p>	<p align="center">4 Operational BMPs—Include in WQMP Table and Narrative</p>
<p><input type="checkbox"/> J. Vehicle and Equipment Cleaning</p>	<p><input type="checkbox"/> Show on drawings as appropriate:</p> <p>(1) Commercial/industrial facilities having vehicle/equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses.</p> <p>(2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use).</p> <p>(3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer.</p> <p>(4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.</p>	<p><input type="checkbox"/> If a car wash area is not provided, describe any measures taken to discourage on-site car washing and explain how these will be enforced.</p>	<p>Describe operational measures to implement the following (if applicable):</p> <p><input type="checkbox"/> Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system. Refer to "Outdoor Cleaning Activities and Professional Mobile Service Providers" for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/</p> <p><input type="checkbox"/> Car dealerships and similar may rinse cars with water only.</p>

STORM WATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

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<p>1</p> <p>Potential Sources of Runoff Pollutants</p> <p><input checked="" type="checkbox"/> K. Vehicle/Equipment Repair and Maintenance</p>	<p align="center">2</p> <p>Permanent Controls—Show on WQMP Drawings</p> <p><input checked="" type="checkbox"/> Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater.</p> <p><input type="checkbox"/> Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.</p> <p><input type="checkbox"/> Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.</p>	<p align="center">3</p> <p>Permanent Controls—List in WQMP Table and Narrative</p> <p><input checked="" type="checkbox"/> State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area.</p> <p><input type="checkbox"/> State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.</p> <p><input type="checkbox"/> State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.</p>	<p align="center">4</p> <p>Operational BMPs—Include in WQMP Table and Narrative</p> <p><input checked="" type="checkbox"/> In the Stormwater Control Plan, note that all of the following restrictions apply to use the site:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains. <input checked="" type="checkbox"/> No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately. <input type="checkbox"/> No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment. <p>Refer to "Automotive Maintenance & Car Care Best Management Practices for Auto Body Shops, Auto Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations". Brochure can be found at http://rcflood.org/stormwater/</p> <p>Refer to Outdoor Cleaning Activities and Professional Mobile Service Providers for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/</p>	

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
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<input type="checkbox"/> L. Fuel Dispensing Areas	<input type="checkbox"/> Fueling areas ⁶ shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable. <input type="checkbox"/> Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area ¹ .] The canopy [or cover] shall not drain onto the fueling area.		<input type="checkbox"/> The property owner shall dry sweep the fueling area routinely. <input type="checkbox"/> See the Fact Sheet SD-30, "Fueling Areas" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

⁶ The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.

STORM WATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

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<p><input type="checkbox"/> M. Loading Docks</p>	<p><input type="checkbox"/> Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer.</p> <p><input type="checkbox"/> Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.</p> <p><input type="checkbox"/> Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.</p>		<p><input type="checkbox"/> Move loaded and unloaded items indoors as soon as possible.</p> <p><input type="checkbox"/> See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com</p>

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<p><input type="checkbox"/> N. Fire Sprinkler Test Water</p>		<p><input type="checkbox"/> Provide a means to drain fire sprinkler test water to the sanitary sewer.</p>	<p><input type="checkbox"/> See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com</p>
<p><input type="checkbox"/> O. Miscellaneous Drain or Wash Water or Other Sources</p> <p><input type="checkbox"/> Boiler drain lines</p> <p><input type="checkbox"/> Condensate drain lines</p> <p><input type="checkbox"/> Rooftop equipment</p> <p><input type="checkbox"/> Drainage sumps</p> <p><input type="checkbox"/> Roofing, gutters, and trim.</p> <p><input type="checkbox"/> Other sources</p>		<p><input type="checkbox"/> Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system.</p> <p><input type="checkbox"/> Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system.</p> <p><input type="checkbox"/> Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment.</p> <p><input type="checkbox"/> Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water.</p> <p><input type="checkbox"/> Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.</p> <p><input type="checkbox"/> Include controls for other sources as specified by local reviewer.</p>	

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<input checked="" type="checkbox"/> P. Plazas, sidewalks, and parking lots.			<input checked="" type="checkbox"/> Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

Will Submit With Final WQMP

Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

Will Submit With Final WQMP