

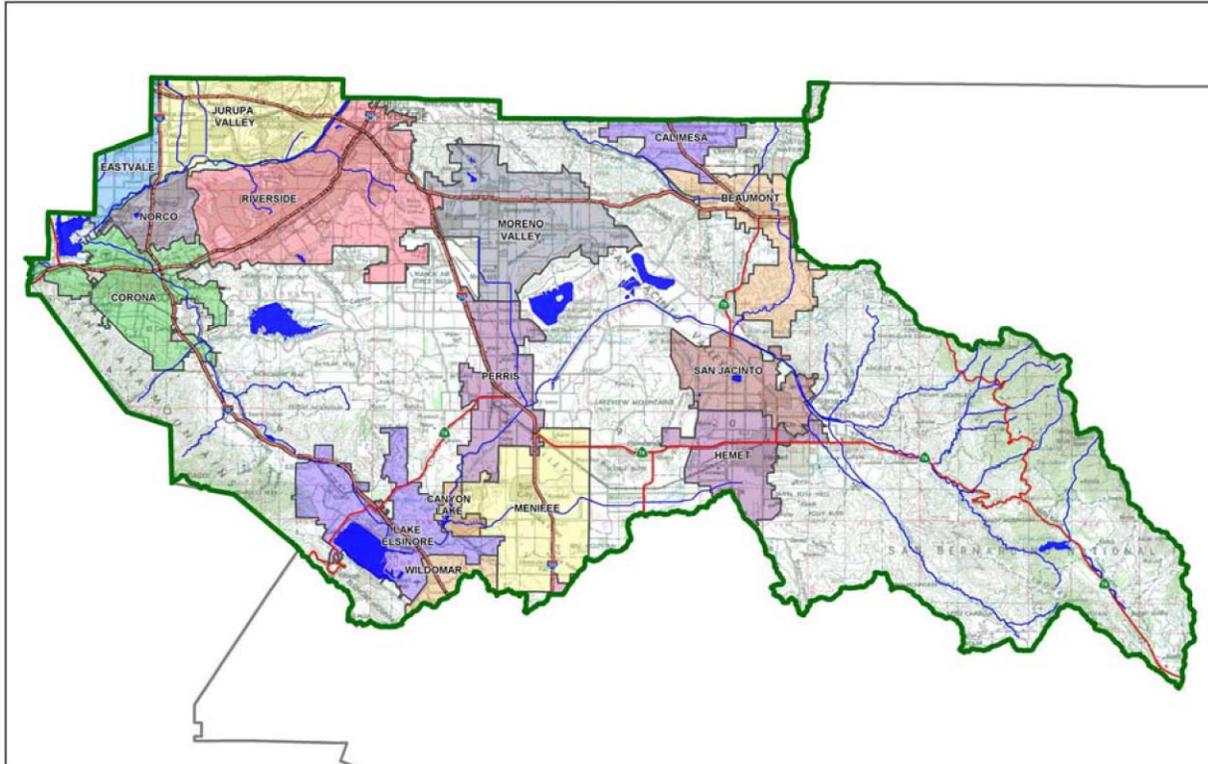
Project Specific Water Quality Management Plan

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

Project Title: World Logistics Center Specific Plan

Development No: TBD

Design Review/Case No: TBD



- Preliminary
- Final

Original Date Prepared: November 2012

Revision Date(s): September 2014

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

Contact Information:

Prepared for:

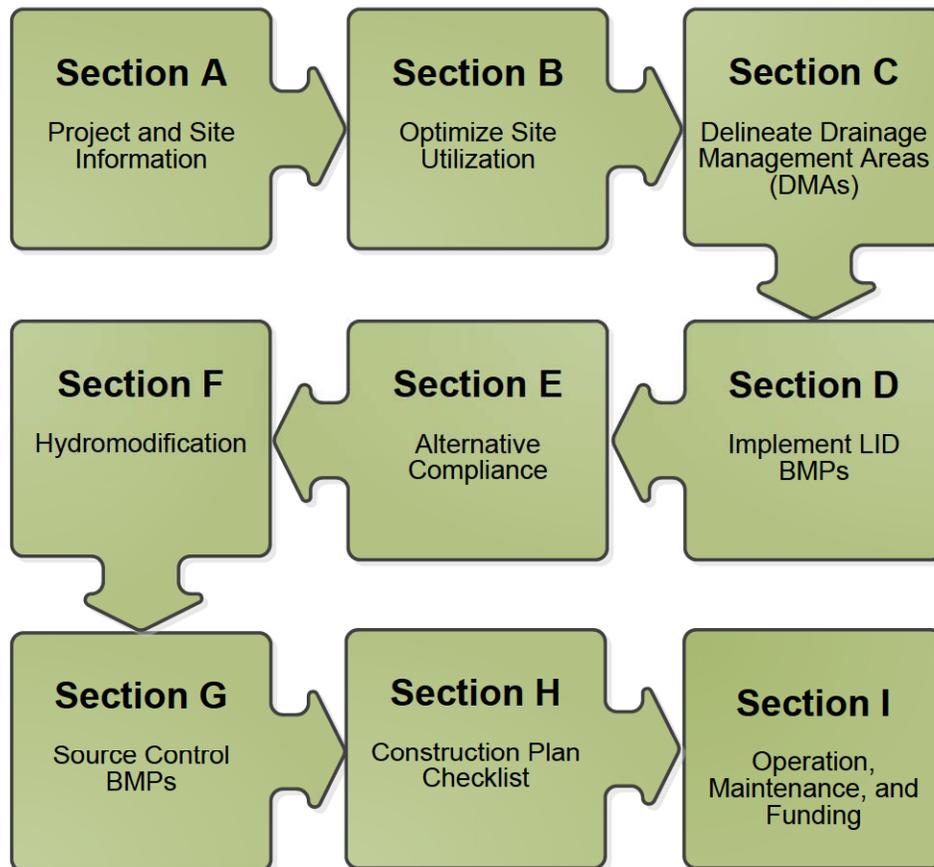
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A Brief Introduction

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 Highland Fairview by CH2M HILL for the World Logistics Center Specific Plan project.

This WQMP is intended to comply with the requirements of the City of Moreno Valley for Municipal Code Section 8.10 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 the City of Moreno Valley Water Quality Ordinance Water Quality Ordinance (Municipal Code Section 8.10).

At the time of the Final WQMP, the undersigned will be authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under City of Moreno Valley Water Quality Ordinance (Municipal Code Section 8.10).

"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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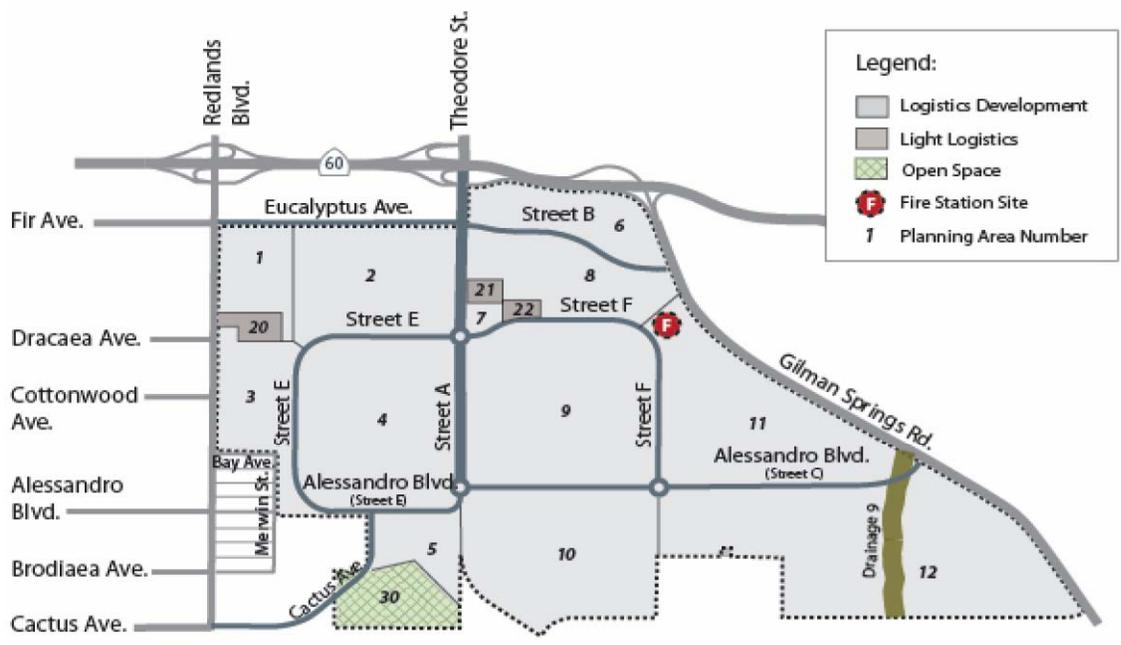
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Section A: Project and Site Information

The proposed World Logistics Center Specific Plan (WLC) is a master plan for the development of logistics warehouse distribution facilities on approximately 2,610 acres of land in the Rancho Belago area of eastern Moreno Valley. The Specific Plan proposes the development of 40.4 million square feet of high-cube logistics facilities on 2,382.8 acres, 200,000 square feet of light logistics facilities on 37.1 acres, an in-project fueling station, 115.8 acres of street right-of-way and 74.3 acres of permanent open space.

The Specific Plan area is situated southerly of State Route 60, generally between Redlands Boulevard and Gilman Springs Road (the easterly City limit). The Specific Plan extends to, but does not include, the San Jacinto Wildlife Area (SJWA) on the southern boundary. The General Plan Amendment and Zone Change which accompany the Specific Plan includes a portion of the SJWA property in order to designate that land for open space use.

Within the Specific Plan the primary land use category will be “Logistics Development”. This use will provide for high-cube logistics warehouse space consisting of buildings of 500,000 square feet or larger. Warehousing and logistics activities consistent with the storage of manufactured goods and materials prior to their distribution to other facilities and retail outlets will be permitted within this category. Ancillary office and maintenance space will be permitted, along with the outdoor storage of trucks, trailers, and shipping containers. The “Light Logistics” land use category provides for general warehouse, self-storage and vehicle storage uses. Figure A.1 depicts the proposed Land Use Plan.



Planning Area (PA)	Land Use	Area	Building SF
Logistics Development			
1	LD	77.8	1,100,000
2	LD	193.5	4,200,000
3	LD	120.3	1,600,000
4	LD	301.5	5,600,000
5	LD	64.2	1,100,000
6	LD	115.3	500,000
7	LD	10.3	50,000
8	LD	142.9	2,150,000
9	LD	485.8	10,400,000
10	LD	139.9	2,200,000
11	LD	500	8,000,000
12	LD	231.3	3,500,000
		2,382.8	40,400,000
Light Logistics			
20	LL	16.1	45,500
21	LL	10.5	77,250
22	LL	10.5	77,250
		37.1	200,000
Open Space			
30	OS	74.3	
		74.3	
Right of Way			
ROW		115.8	
		115.8	
Grand Total		2,610.0	40,600,000

Figure A.1 Land Use Map

PROJECT INFORMATION	
Type of Project:	Logistics Development
Planning Area:	World Logistics Center
Community Name:	World Logistics Center
Development Name:	World Logistics Center
PROJECT LOCATION	
Latitude & Longitude (DMS): 33°55'58"N, 117° 8'23"W	
Project Watershed and Sub-Watershed: Santa Ana Watershed and San Jacinto Watershed	
APN(s): N/A	
Map Book and Page No.: Riverside County Page 718: Grids F, G, H, J, 2, 3, 4, 5, 6; Page 719: Grids A, B, C, D, 3, 4, 5, 6	
PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	Logistics, Light Logistics
Proposed or Potential SIC Code(s)	1541 – General Contractors – Industrial Buildings and Warehouses
Area of Impervious Project Footprint (SF)	TBD during final WQMP
Total Area of <u>proposed</u> Impervious Surfaces within the Project Limits (SF)/or Replacement	TBD during final WQMP
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 checked="" type="checkbox"/> Y <input type="checkbox"/> N
EXISTING SITE CHARACTERISTICS	
Total area of <u>existing</u> Impervious Surfaces within the project limits (SF)	TBD during final WQMP
Is the project located within any MSHCP Criteria Cell?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
If so, identify the Cell number:	1297, 1204, 1364
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)	
What is the Water Quality Design Storm Depth for the project?	0.68 inch

A.1 Maps and Site Plans

Appendix 1 of this Project-Specific WQMP includes:

1. A Vicinity Map identifying the project site and surrounding planning areas in sufficient detail to allow the project site to be plotted on Co-Permittee base mapping;
2. A Receiving Waters Map identifying the locations of receiving waters to which the project directly or indirectly discharges; and
3. A Site Plan for the project. The following project features are not depicted in the current World Logistics Center Specific Plan Site Plan, but will be included in each final Project-Specific WQMP:
 - Drainage Management Areas
 - Drainage Path
 - Drainage Infrastructure, Inlets, Overflows
 - Location and identification of all structural BMPs, including LID and Treatment Control and Source Control BMPs;

- Landscaped areas;
- Impervious surfaces including paved areas and intended uses (i.e., parking, outdoor work area, outdoor material storage area, sidewalks, patios, tennis courts, etc.);
- Number and type of structures and intended uses (i.e., buildings, rooflines and downspouts, tenant spaces, dwelling units, community facilities such as pools, recreation facilities, tot lots, etc.);
- Infrastructure (i.e., streets, storm drains, etc.) that will revert to public agency ownership and operation;
- Location of existing and proposed public and private storm drainage facilities (i.e., storm drains, channels, basins, etc.), including catch basins and other inlets/outlet structures. Existing and proposed drainage facilities should be clearly differentiated;
- Location of points where onsite (or tributary offsite) flows exit the property/project site;
- Proposed drainage areas boundaries, including tributary offsite areas, for each location where flows exits the property/project site. Each tributary area should be clearly denoted;
- Pre- and post-project topography.

A.2 Identify Receiving Waters

The World Logistics Center Specific Plan project is immediately tributary to the Perris Valley (802.11) and Gilman Hot Springs (802.21) hydrologic subareas. Flows from the project site eventually drain south to the San Jacinto River. The San Jacinto River flows southwest and has been dammed to form Canyon Lake, which drains to Lake Elsinore. The Table A.1 lists each of the successive receiving waters and the pollutants for which the receiving waters are impaired, according to the Clean Water Act Section 303(d) list (2010).

Table A.1 Identification of Receiving Waters

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
San Jacinto River	None	All uses considered Intermittent MUN, AGR, GWR, REC1, REC2, WARM, WILD	Approx. 2 miles to RARE-designated San Jacinto Wildlife Preserve
Canyon Lake (Railroad Canyon Reservoir)	Nutrients, Pathogens	MUN, AGR, GWR, REC1, REC2, WARM, WILD	Not RARE
Lake Elsinore	Nutrients, Organic Enrichment/Low Dissolved Oxygen, PCBs, Sediment Toxicity, Unknown Toxicity	MUN, REC1, REC2, WARM, WILD	Not 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 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 type="checkbox"/> TBD	<input type="checkbox"/>
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	<input type="checkbox"/> TBD	<input type="checkbox"/>
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 checked="" type="checkbox"/> Y	<input type="checkbox"/> N
<i>Other (please list in the space below as required)</i>		
State Water Resources Control Board General Permit – Construction	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
City of Moreno Valley Building Permit	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
City of Moreno Valley Grading 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)

During preparation of the final WQMP a review of the information collected in Section 'A' will be made to identify 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). A brief narrative for each of the site optimization strategies is described below and will be included in the final WQMP. This narrative helps with the LID design and explains the design decisions.

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, the narrative in the final WQMP will identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Opportunities that exist which will be utilized during project design will be noted. Upon completion of identifying Constraints and Opportunities as part of the final WQMP, they will be included on the WQMP Site plan in Appendix 1 in the final WQMP.

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will also be used in preparation of each final Project-Specific WQMP to determine how best to optimize the final site layout and subsequently identify opportunities and/or constraints, and document compliance.

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

The majority of the project site is agricultural and currently sheet flows to earthen ditches. Under the proposed project which will require mass grading, most of these ditches will be removed, with the exception of one natural drainage course, Line E, located at the eastern portion of the project as shown on Figure 1 of the Master Plan of Drainage Report. Portions of this natural drainage course south of Alessandro Boulevard will remain in a natural condition with the proposed project.

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

There are 74 acres of natural areas that will be conserved as undisturbed open space. Although most of the project area is agricultural and will require mass grading, where possible existing native trees and shrubs will be preserved in areas where there is no grading.

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

LID BMPs that promote infiltration and evapotranspiration will be incorporated in specific projects throughout the project site. Infiltration BMPs will be preferred, but may not be feasible on sites with low infiltration rates, or located on compacted engineered fill. In situations where infiltration BMPs are not appropriate, bioretention and/or biotreatment BMPs that provide opportunity for evapotranspiration and incidental infiltration will be implemented. The locations of these facilities will be shown in each final Project-Specific WQMP.

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

A significant portion of the project will remain pervious for the purposes of landscaping, water quality treatment, and flood detention. The use of impervious surfaces for decorative purposes will be minimized where possible. Street, sidewalk, and parking design will incorporate or keep minimum street widths that still meet City requirements and emergency access requirements.

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

Runoff from impervious areas will sheet flow or be directed to LID or Treatment Control BMPs. Streets, sidewalks, and parking lots will sheet flow to landscaping/bioretenion areas. All flows, including first flush and high flows, will sheet flow or be directed to LID or Treatment Control BMPs.

Site Optimization BMPs

Site Optimization BMPs are intended to create a hydrologically functional project design that attempts to mimic the natural hydrologic regime. In accordance with the Riverside County WQMP, project proponents shall implement Site Design concepts that achieve each of the following:

- 1) Minimize Urban Runoff
- 2) Minimize Impervious Footprint
- 3) Conserve Natural Areas
- 4) Minimize Directly Connected Impervious Areas (DCIAs)

Each Site Optimization concept is presented below, with a discussion of whether the design concept will be incorporated in the project. Site Optimization BMPs will be shown in each final Project-Specific WQMP.

Minimize Urban Runoff

The project will be designed to minimize urban runoff using the following Site Design concepts.

- Maximize the permeable area. A significant portion of the project will remain pervious for the purposes of landscaping, water quality treatment, and flood detention. By incorporating more pervious, lower Runoff Coefficient (C factor) surfaces into the project, lower volumes of runoff will be produced.
- Incorporate landscaped buffer areas between sidewalks and streets. Bioretention areas between sidewalks and streets will be incorporated and serve the dual purpose of landscaping and water quality treatment.
- Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs. Although most of the project area will require mass grading, where possible existing native trees and shrubs will be preserved in areas where there is no grading. The planting and landscape will be designed to maximize water conservation, including the use of drought-tolerant and native planting.
- Use natural drainage systems. The majority of the project site is agricultural and currently sheet flows to earthen ditches. Under the proposed project which will require mass grading, most of these ditches will be removed, with the exception of one natural drainage course, Line E, located at the eastern portion of the project as shown on Figure 1 of the Master Plan of

Drainage Report. Portions of this natural drainage course south of Alessandro Boulevard will remain in a natural condition with the proposed project.

- Where soils conditions are suitable, use perforated pipe or gravel filtration pits for low flow infiltration. Infiltration basins will be proposed where soil conditions are appropriate.
- Construct onsite ponding areas or retention facilities to increase opportunities for infiltration consistent with vector control objectives. Flows from the project will be treated first by LID BMPs where most of the flow will infiltrate or evapotranspire. The treated flows will then be reduced to below or equal to pre-development conditions by routing the on-site storm water flows through on-site detention and infiltration basins before flows are released off site. These basins will provide incidental infiltration and secondary treatment downstream of the LID BMPs. The locations of these facilities will be shown in each final Project-Specific WQMP.

Minimize Impervious Footprint

Each project will be designed to minimize impervious footprint using the following Site Optimization concepts.

- Maximize the permeable area. A significant portion of the project will remain pervious for the purposes of landscaping, water quality treatment, and flood control. By incorporating the aforementioned pervious, lower Runoff Coefficient (C factor) surfaces into the project, lower volumes of runoff will be produced.
- Construct streets, sidewalks and parking lot aisles to the minimum widths necessary, provided that public safety and a walkable environment for pedestrians are not compromised. Street, sidewalk, and parking design will incorporate minimum street widths that still meet City requirements and emergency access requirements.
- Reduce widths of street where off-street parking is available. Street design will incorporate minimum street widths that still meet City requirements and emergency access requirements.
- Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design. The use of impervious surfaces for decorative purposes will be minimized where possible.

Conserve Natural Areas

The project will be designed to conserve natural areas using the following Site Optimization concepts.

- Conserve natural areas. There are 74 acres of natural areas that will be conserved as undisturbed open space.
- Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs. Although most of the project area will require mass grading, where possible existing native trees and shrubs will be preserved in areas where there is no grading. The planting and landscape will be designed to maximize water conservation, including the use of drought-tolerant or native planting.
- Use natural drainage systems. The majority of the project site is agricultural and currently sheet flows to earthen ditches. Under the proposed project which will require mass grading, most of these ditches will be removed, with the exception of one natural drainage course, Line E, located at the eastern portion of the project as shown on Figure 1 of the Master Plan of Drainage Report. Portions of this natural drainage course south of Alessandro Boulevard will remain in a natural condition with the proposed project.

Minimize Directly Connected Impervious Areas

The project will be designed to minimize directly connected impervious areas using the following Site Optimization concepts.

- Residential and commercial sites must be designed to contain and infiltrate roof runoff, or direct roof runoff to vegetative swales or buffer areas, where feasible. Runoff from impervious areas will sheet flow or be directed to LID BMPs.
- Where landscaping is proposed, drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping. Streets, sidewalks, and parking lots will sheet flow to landscaping/bioretenion areas.
- Increase the use of vegetated drainage swales in lieu of underground piping or imperviously lined swales. Runoff from impervious areas will sheet flow to vegetated swales, bioretention areas, infiltration basins, and/or detention basins.
- Rural swale system: street sheet flows to vegetated swale or gravel shoulder, curbs at street corners, culverts under driveways and street crossings. Streets will sheet flow to adjacent landscaping/ bioretention areas.
- Urban curb/swale system: street slopes to curb; periodic swale inlets drain to vegetated swale/biofilter. Streets will sheet flow to adjacent landscaping/bioretention areas.
- Design driveways with shared access, flared (single lane at street) or wheel strips (paving only under tires); or, drain into landscaping prior to discharging to the MS4. Driveways will sheet flow to adjacent landscaping/bioretention areas.
- Uncovered temporary or guest parking on private residential lots may be paved with a permeable surface, or designed to drain into landscaping prior to discharging to the MS4. Parking lots will sheet flow to adjacent landscaping/bioretention areas.
- Where landscaping is proposed in parking areas, incorporate landscape areas into the drainage design. Parking lots will sheet flow to adjacent landscaping/bioretention areas.

Section C: Delineate Drainage Management Areas (DMAs)

To be completed as part of each final Project Specific WQMP.

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

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) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]

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

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

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

The project will comply with the WQMP Guidance Document for the Santa Ana Region of Riverside County, which requires the use of LID BMPs that maximize infiltration, harvest and use, evapotranspiration and/or bio-treatment. Page 19 of the WQMP Guidance Document states:

“LID BMPs have been shown in studies throughout the country to be effective and reliable at treating a wide range of Pollutants that can be found in urban runoff, including those listed above [sediments, nutrients, metals, toxic organic compounds, trash, oxygen-demanding substances, oil and grease, bacteria and viruses, and pesticides], and those subject to adopted TMDLs in the Santa Ana Region of Riverside County (Bacteria and Nutrients). As such, the LID BMPs required in this WQMP are expected to treat discharges of urban-sourced 303(d) listed Pollutants from subject projects to an impaired waterbody on the 303(d) list such that the discharge from the project would not cause or contribute to an exceedance of Receiving Water Quality Objectives.”

By complying with the WQMP and implementing LID-based BMPs, the project is mitigating water quality impacts. The BMP strategy for the project is to select Low Impact Development (LID) BMPs that promote infiltration and evapotranspiration, including infiltration basins, bioretention facilities, and extended detention basins. Generally infiltration BMPs have advantages over other types of BMPs, including reduction of the volume and rate of runoff, as well as full treatment of all potential pollutants potentially contained in the stormwater runoff. It is recognized however that infiltration may not be feasible on sites with low infiltration rates, or located on compacted engineered fill. If the BMP is considered in a fill condition, and the infiltration surface of the BMP cannot extend down into native soils, or if the BMP is considered in a cut condition, and there is no practicable way to verify infiltration rates at the final BMP elevation, infiltration BMPs will not be used. Prior to final design, infiltration tests shall be performed within the boundaries of the proposed infiltration BMP and at the bottom elevation (infiltration surface) of the proposed infiltration BMP to confirm the suitability of infiltration. In situations where infiltration BMPs are not appropriate, bioretention and/or biotreatment BMPs (including extended detention basins, bioswales, and constructed wetlands) that provide opportunity for evapotranspiration and incidental infiltration will be considered. Harvest and use BMPs will also be considered as an LID BMP to store runoff for later non-potable uses. Ponds may be used to collect storm water runoff for harvest and use.

The locations of the LID BMPs will be shown in each final Project-Specific WQMP. In order to meet Regional Water Quality Control Board (RWQCB) requirements, in the Santa Ana Watershed the design capture volume (VBMP) is based on capturing the volume of runoff generated from an 85th percentile, 24-hour storm event. The sizing and design criteria for the LID BMPs will follow the Riverside County Design Handbook for Low Impact Development Best Management Practices (Riverside County LID Design Handbook) (RCFCWCD, 2011). The Design Storm Depth (D85) was determined to be 0.68 inches per the Isohyetal Map for the 85th Percentile 24-hour Storm Event. Supporting engineering calculations and LID BMP design details will be provided in each final Project-Specific WQMP.

D.1 Infiltration Applicability

While infiltration testing has not been performed on the site, a preliminary review of the feasibility of infiltration has been conducted. According to the Riverside County Hydrology Manual, the majority of the study area consists of Hydrologic Soil Group (HSG) Type B, which is considered appropriate for infiltration. The HSG map within the study area is included in Appendix 3. A geotechnical evaluation has been performed for the World Logistics Center Specific Plan area, and the geotechnical report is contained in the EIR as a technical appendix. The geotechnical field explorations included 80 test pits,

over 50 borings, and seven cone penetration tests. Based on the laboratory test data, the site mainly consists of silty sands (SM) with zones of silt (ML) beds. The silt beds range anywhere from 5 to 15 feet below ground surface (bgs). In some of the areas, the beds appear to be continuous from boring/pit to boring/pit. Based on the lab data, total fines (silt and clay) range from 36 percent (SM) to 80 percent (ML). Soils in the southeast portion of the site appear to be more granular, however. Based on the geotechnical report, most of the site is considered to be on the borderline between HSG Type B and C soils, with localized areas classified as HSG Type C. Infiltration testing will be performed prior to final design, and infiltration test reports will be included in each final Project-Specific WQMP. The determination of LID BMPs will be based on the results of the infiltration testing.

The remainder of this section will be completed as part of each final Project Specific WQMP.

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 Co-permittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. Both reports have been prepared for the Specific Plan area and are included in the EIR as technical appendices. A project-specific geotechnical report will be prepared at a later date for each project. .

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:		
...have any DMAs located within 100 feet of a water supply well? If Yes, list affected DMAs:		
...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:		
...have measured in-situ infiltration rates of less than 1.6 inches / hour? If Yes, list affected DMAs:		
...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:		
...geotechnical report identify other site-specific factors that would preclude effective and safe infiltration? Describe here:		

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 if it is available.
- Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Co-permittee).
- 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).

To be completed as part of each final Project Specific WQMP if reclaimed water is unavailable.

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

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 Co-permittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

D.4 Feasibility Assessment Summaries

There is an existing 2% slope across the project site from north to south, which will require mass grading and significant cut and fill. The fill condition and/or native soil characteristics may preclude the implementation of infiltration basins at some BMP sites. Thus, while infiltration BMPs are preferred, the final BMPs will likely consist of infiltration basins where appropriate, and bioretention and biotreatment BMPs as the primary means for water quality treatment. A preliminary review of BMP sizing has been conducted, and the project will provide sufficient space to accommodate a combination of bioretention facilities and detention/infiltration basins. Bioretention facilities will be proposed in landscaped spaces, like parking islands, medians, walkways, and site entrances. The goal will be to design landscaped areas on the site as bioretention facilities. The project site will be graded to direct runoff from impervious surfaces into landscaped bioretention facilities. Flows will then be directed to the detention/infiltration basins.

The remainder of this section will be completed as part of each final Project Specific WQMP.

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	
	<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.

Narrative description to be included as part of each final Project Specific WQMP

D.5 LID BMP Sizing

This section will be completed as part of each final Project Specific WQMP.

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 Co-permittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Co-permittee 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]			
						<i>Design Storm Depth (in)</i>	<i>Design Capture Volume, V_{BMP} (cubic feet)</i>	<i>Proposed Volume on Plans (cubic feet)</i>
	$A_T = \Sigma[A]$				$\Sigma = [D]$	[E]	$[F] = \frac{[D] \times [E]}{12}$	[G]

[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)

This section will be completed as part of each final Project Specific WQMP.

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 Co-permittee). 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.

List DMAs here.

E.1 Identify Pollutants of Concern

Utilizing Table A.1 from Section A above which noted the project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference has been done with this information with that of the selected Priority Development Project Category in Table E.1 below.

The potential pollutants associated with the project are metals, nutrients, pesticides, toxic organic compounds, sediments, trash & debris, and oil & grease. The potential pollutants associated with the project that are also present in impaired Receiving Waters are bacterial indicators, nutrients, pesticides, sediments, and toxic organic compounds. There are no anticipated legacy pollutants as a result of past uses. A Phase I Environmental Site Assessment for the World Logistics Center Specific Plan has revealed no evidence of recognized environmental conditions (RECs) indicative of releases or threatened releases of hazardous substances on, at, in, or to the subject site.

The identified General Pollutant Categories that are the same as those listed for the receiving waters are the Pollutants of Concern and the appropriate boxes are checked on the last row. The purpose of this is to document compliance and to help appropriately plan for mitigating the Pollutants of Concern in lieu of implementing LID BMPs which will be determined in each final Project-Specific WQMP.

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 checked="" 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 checked="" type="checkbox"/> Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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

This section will be completed as part of each final Project Specific WQMP.

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
Total Credit Percentage ¹	

¹Cannot Exceed 50%

²Obtain corresponding data from Table 3-8 in the WQMP Guidance Document

E.3 Sizing Criteria

This section will be completed as part of each final Project Specific WQMP.

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 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]	$[F] = \frac{[D]x[E]}{[G]}$	$[F] \times (1-[H])$	[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

This section will be completed as part of each final Project Specific WQMP.

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

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

If the project meets one of the following criteria which will be indicated by the check boxes below, hydromodification does not need to be addressed 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.

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 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:

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.

This project proposes to direct runoff to LID BMPs, where the flows will either be infiltrated, evapotranspired, or be treated. The treated flows will then be reduced to below or equal to pre-development conditions by routing the on-site storm water flows through on-site detention and infiltration basins before flows are released off site. The LID BMPs and detention/infiltration basins proposed at each drainage area will store increased runoff volume for a limited period of a time and release the outflow at a rate that does not exceed the pre-development condition identified in item c. above. As a result, the LID BMPs and detention/infiltration basins will mitigate the impacts of increased peak runoff and reduced time of concentration by attenuating the flows. Riprap or flow blocks will be used in the entrance spillways to reduce the runoff velocity and dissipate the flow energy. Basins with the outflow risers and pipe structures at the downstream end of the watershed will be directed to a spreading area and limit and spread the outflow so that the flow exiting the project boundary will be consistent with the pre-project condition. The sheet flow exiting the southerly boundary will not exceed the flow velocity or the peak flow rate, and will not reduce the overall time of concentration at the most downstream end of the project site compared to the pre-development condition.

The proposed LID BMPs, detention/infiltration basins and outflow structures along with open space will allow flows to infiltrate. The ability of sediment to be conveyed through the existing drainage courses was determined. The majority of the drainage courses deposit sediment in the existing condition and this will occur in the proposed condition through the use of the basins. Runoff leaving the project site via the spreading areas will mimic the sheet flow of the pre-existing condition to maintain the sediment carrying capacity of the existing condition. Thus, the amount of sediment for transport will be in balance

with the storm flows, and no additional erosion is expected at the downstream project boundary. Therefore, there will be no significant impacts on the downstream watershed and the project will not degrade the downstream water quality.

By implementing the items above, the project will address the hydrologic conditions of concern. At the time of final design for each project, detailed hydrologic and hydraulic calculations in accordance with Item c, above will be performed to ensure that the mitigation is appropriately implemented.

Preliminary supporting engineering studies and calculations are contained in the Draft Drainage Report for the World Logistics Center Project, and final studies and calculations will be included in Appendix 7 of each final Project-Specific WQMP.

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, the following procedure was used to specify Source Control BMPs for the 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. **This will be provided as part of each final Project Specific WQMP.**
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. Co-permittee 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.

Source Control BMPs reduce the potential for stormwater runoff and pollutants from coming into contact with one another. Each Source Control BMP that is incorporated into the project is presented in the table below. The locations of the structural Source Control BMPs are not shown in the current Specific Plan phase, but will be shown in each final Project-Specific WQMP.

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
A. On-site storm drain inlets	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.	<ul style="list-style-type: none"> • Maintain and periodically repair or replace inlet markings. • Provide stormwater pollution prevention information to new site owners, lessees, or operators. • See applicable operational BMPs in Fact Sheet SC-44, “Drainage System Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

		<ul style="list-style-type: none"> • 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.”
D2. Landscape/ Outdoor Pesticide Use	<p>State that final landscape plans will accomplish all of the following.</p> <ul style="list-style-type: none"> • Preserve existing native trees, shrubs, and ground cover to the maximum extent possible. • 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. • Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. • Consider using pest-resistant plants, especially adjacent to hardscape. • To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions. 	<ul style="list-style-type: none"> • Maintain landscaping using minimum or no pesticides. • See applicable operational BMPs in “What you should know for.....Landscape and Gardening” at http://rcflood.org/stormwater/ • Provide IPM information to new owners, lessees and operators.
E. Pools, spas, ponds, decorative fountains, and other water features.	<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>See applicable operational BMPs in “Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain” at http://rcflood.org/stormwater/</p>
G. Refuse areas	<ul style="list-style-type: none"> • State how site refuse will be handled and provide supporting detail to what is shown on plans. • State that signs will be posted on or near dumpsters with the words “Do not dump hazardous materials here” or similar. 	<ul style="list-style-type: none"> • State how the following will be implemented: 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
I. Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)	<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</p>	<p>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>

	<p>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>	
L. Fuel Dispensing Areas		The property owner shall dry sweep the fueling area routinely. See the Fact Sheet SD-30 , “Fueling Areas” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
M. Loading Docks		<ul style="list-style-type: none"> • Move loaded and unloaded items indoors as soon as possible. • See Fact Sheet SC-30, “Outdoor Loading and Unloading,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
N. Fire Sprinkler Test Water		See the note in Fact Sheet SC-41, “Building and Grounds Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
<p>O. Miscellaneous Drain or Wash Water or Other Sources:</p> <ul style="list-style-type: none"> • Condensate drain lines • Rooftop equipment • Roofing, gutters, and trim. 	<ul style="list-style-type: none"> • 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. • Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment. • Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff. 	N/A
P. Plazas, sidewalks, and parking lots.		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.

Non-Structural Source Control BMPs

The project will be designed with the following non-structural Source Control BMPs.

- Education for Property Owners, Operators, Tenants, Occupants, or Employees. Practical informational materials to promote the prevention of Urban Runoff pollution will be provided to educate employees/users of the project site. These materials shall include general housekeeping practices that contribute to the protection of stormwater quality. The project owner will request copies of these materials from <http://www.floodcontrol.co.riverside.ca.us/YouCanHelp.asp> at least 30 days prior to distribution, as required by the Riverside County WQMP
- Activity Restrictions. The project owner will enforce activity restrictions. Activity restrictions for water quality protection will include:
 - Prohibit vehicle washing, maintenance, or repair. No car wash racks or maintenance bays will be allowed within the project.
 - Prohibit outdoor work areas and processing areas within the project.
 - Prohibit the blowing, sweeping, or hosing of debris (leaf litter, grass clippings, litter, etc.) into streets, storm drain inlets, or other conveyances.
 - Require dumpster lids to be closed at all times.
- Irrigation System and Landscape Maintenance. The irrigation system and landscaping shall be consistent with the County's water conservation policy. Fertilizer and pesticide usage shall be consistent with the instructions contained on product labels and with regulations administered by California's Department of Pesticide Regulation. Additionally, landscape maintenance must address replacement of dead vegetation, repair of erosion rills, proper disposal of green waste, etc. Irrigation system maintenance must address periodic testing and observation of the irrigation system to detect overspray, broken sprinkler heads, and other system failures.
- Common Area Litter Control. Trash receptacles will be provided at appropriate locations throughout the project area. Trash receptacles will be emptied weekly, or as needed.
- Street Sweeping Private Streets and Parking Lots. The project owner shall provide sweeping of the parking lots on a monthly basis.
- Drainage Facility Inspection and Maintenance. The project owner shall be responsible for having privately owned catch basins inspected and cleaned annually. Ownership of all offsite drainage facilities will be turned over to the City of Moreno Valley at project completion. The City will be responsible for maintaining and inspecting all public drainage facilities.

Section H: Construction Plan Checklist

This section will be completed as part of each final Project Specific WQMP.

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)

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 Co-permittee will periodically verify that Stormwater BMPs on the site are maintained and continue to operate as designed. To make this possible, the following will be included in Appendix 9 of each final 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.

A detailed Stormwater BMP Operation and Maintenance Plan will be prepared as part of each final Project-Specific WQMP that sets forth a maintenance schedule for each of the Stormwater BMPs built on the 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 and will be included in each final Project-Specific WQMP.

The table below describes the preliminary inspection and maintenance activities for each BMP. At the time of final design, an Operation and Maintenance (O&M) Plan will be prepared clearly stating the maintenance activities highlighted in the table, including the designated party to manage the BMPs, self-inspections and record-keeping requirements for BMPs, start-up dates, operating schedule, maintenance frequency, routine service schedule, specific maintenance activities, and any other necessary activities.

Operation and Maintenance Plan

BMP Requiring Maintenance	Visual Inspection Frequency	Responsible Party	Maintenance Frequency	Maintenance Tasks
Infiltration Basins	Ongoing, including just before wet season	Project owner	As needed	<ul style="list-style-type: none"> • Maintain vegetation. • Remove debris and litter. • Check for erosion and sediment laden areas. • Revegetate side slopes where needed.
	Within 72 hours following storm event	Project owner	As needed	<ul style="list-style-type: none"> • Check for standing water. No water should be present 72 hours after an event. Correct problem as needed.

BMP Requiring Maintenance	Visual Inspection Frequency	Responsible Party	Maintenance Frequency	Maintenance Tasks
	Annually	Project owner	Annually	<ul style="list-style-type: none"> Inspect hydraulic and structural facilities. Check for erosion, slumping and overgrowth. Check for sediment build up. Scrape bottom as needed and remove sediment. Replant basin vegetation.
Bioretention Facilities	Ongoing, including just before wet season	Project owner	As needed	<ul style="list-style-type: none"> Maintain vegetation. Remove debris and litter. Replace damaged grass and/or plants. Replace surface mulch layer as needed to maintain a 2-3 inch soil cover.
	Within 72 hours following storm event	Project owner	As needed	<ul style="list-style-type: none"> Check for standing water. No water should be present 72 hours after an event. Correct problem as needed.
	Annually	Project owner	Annually	<ul style="list-style-type: none"> Inspect/clean inlets and outlets.
Extended Detention Basins	Ongoing, including just before wet season	Project owner	As needed	<ul style="list-style-type: none"> Maintain vegetation. Remove debris and litter.
	Within 72 hours following storm event	Project owner	As needed	<ul style="list-style-type: none"> Check for standing water. No water should be present 72 hours after an event. Correct problem as needed.
	Annually	Project owner	Annually	<ul style="list-style-type: none"> Inspect hydraulic and structural facilities. Check for erosion, slumping and overgrowth. Inspect sand media at the filter drain. Scarify top 3 inches by raking the filter drain's sand surface. Check media filter underdrains (via the cleanout) for damage or clogging. Remove accumulated sediment and debris from the forebay. Check gravel filled low flow and collector trenches for sediment buildup and repair as needed.
Irrigation System	Weekly as part of landscape maintenance activities	Project owner	As needed	<ul style="list-style-type: none"> Repair broken sprinkler heads Redirect heads where needed Adjust irrigation interval and schedule as needed
Landscaped Areas	Weekly as part of landscape maintenance activities	Project owner	Weekly	<ul style="list-style-type: none"> Mow, weed, trim, and remove accumulated dead vegetation, pet waste, trash and debris.
Parking Lot Sweeping	Monthly	Project owner	Monthly	<ul style="list-style-type: none"> Sweep parking lots to remove litter, dust, and debris.

BMP Requiring Maintenance	Visual Inspection Frequency	Responsible Party	Maintenance Frequency	Maintenance Tasks
Catch Basin Signage	Annually	Project owner	As needed	<ul style="list-style-type: none"> Refresh or replace as needed.

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

Y N

Only those BMPs proposed in common areas will be maintained by a HOA or POA. Otherwise, the BMPs will be maintained by the Leasee or Owner. The Operation and Maintenance Plan and Maintenance Mechanism will be included in Appendix 9 of each final Project-Specific WQMP. Pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP are included in Appendix 10.

Operation and Maintenance Responsibility

Until construction is completed, the project owner will be responsible for the operation and maintenance for all structural Source Control and Treatment Control BMPs. Contact information for the project owner is as follows:

Highland Fairview
14225 Corporate Way
Moreno Valley, California 92553
(951) 867-5300
Contact: Brian Hixson

Funding

A funding source or sources for the O&M of each BMP identified in each Project-Specific WQMP must be identified. By certifying each Project-Specific WQMP, the Project applicant is certifying that the funding responsibilities have been addressed and will be transferred to future owners. One example of how to adhere to the requirement to transfer O&M responsibilities is to record the Project-Specific WQMP against the title to the property.

The project owner certifies that a funding source will be made available to support the operation and maintenance of each Treatment Control BMP included in the project. The O&M funding will be determined at a future date in the entitlement process. The project owner will have ultimate responsibility for funding all operation and maintenance.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map

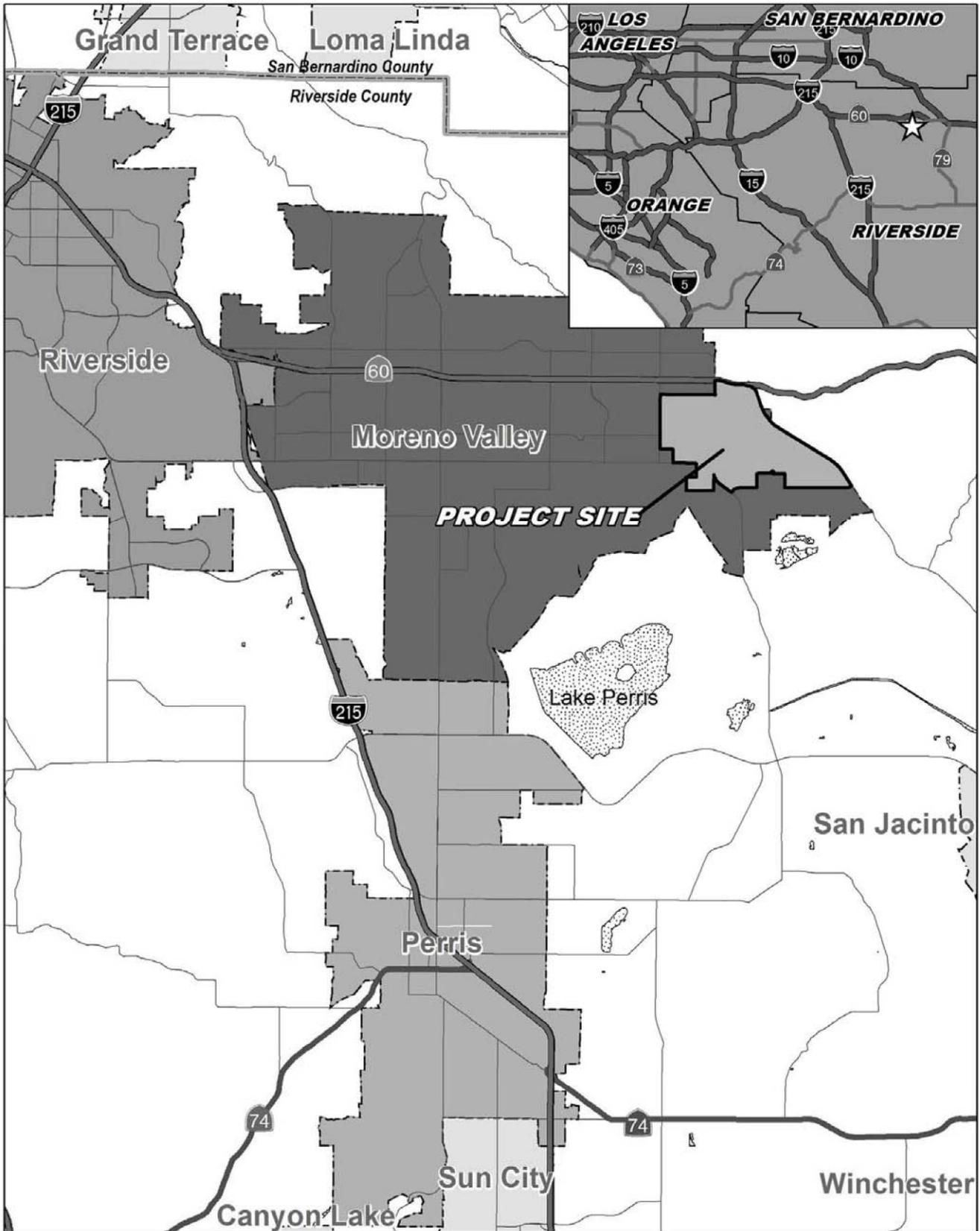
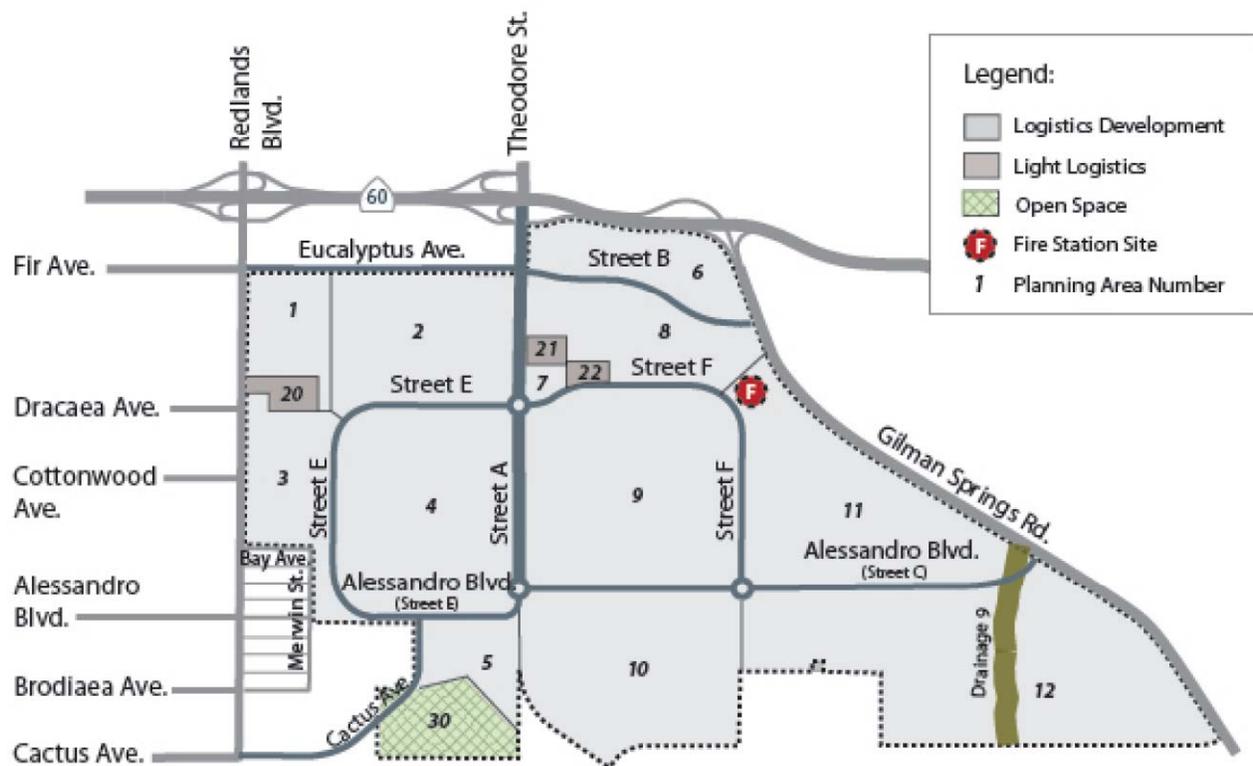


FIGURE 1
Vicinity Map
 World Logistics Center Specific Plan
 Moreno Valley, CA



Planning Area (PA)	Land Use	Area	Building SF
Logistics Development			
1	LD	77.8	1,100,000
2	LD	193.5	4,200,000
3	LD	120.3	1,600,000
4	LD	301.5	5,600,000
5	LD	64.2	1,100,000
6	LD	115.3	500,000
7	LD	10.3	50,000
8	LD	142.9	2,150,000
9	LD	485.8	10,400,000
10	LD	139.9	2,200,000
11	LD	500	8,000,000
12	LD	231.3	3,500,000
		2,382.8	40,400,000
Light Logistics			
20	LL	16.1	45,500
21	LL	10.5	77,250
22	LL	10.5	77,250
		37.1	200,000
Open Space			
30	OS	74.3	
		74.3	
Right of Way			
ROW		115.8	
		115.8	
Grand Total		2,610.0	40,600,000

Appendix 2: Construction Plans

Grading and Drainage Plans

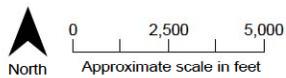
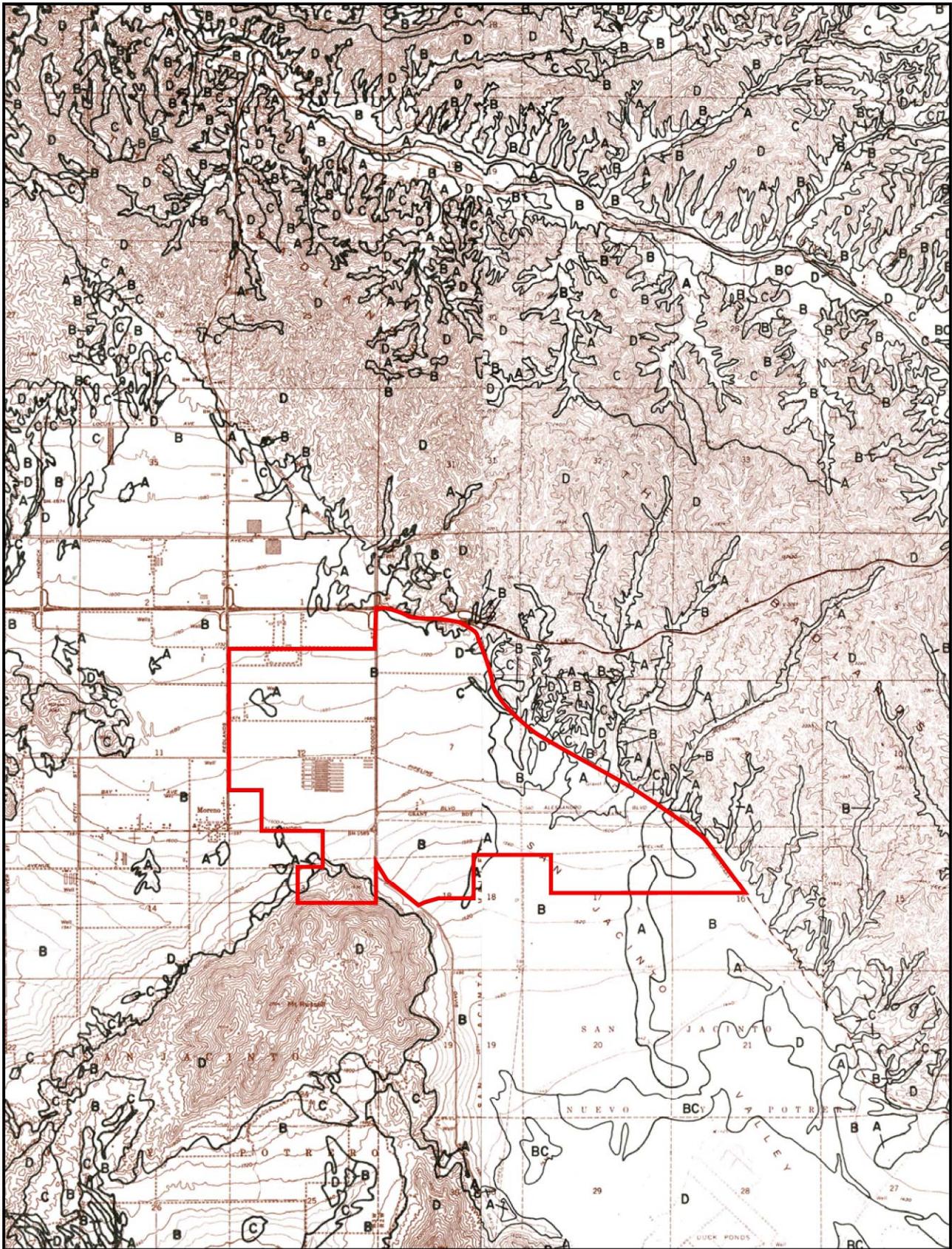
This appendix will be completed as part of each final Project Specific WQMP.

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

Hydrologic Soils Group Map is included in this Appendix.

Geotechnical Report is included in the EIR as a technical appendix.



Study Area

FIGURE 1
Hydrologic Soil Groups Within Study Area
World Logistics Center Specific Plan
Moreno Valley, CA

Appendix 4: Historical Site Conditions

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

Phase 1 Environmental Site Assessment is included in the EIR as a technical appendix.

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis

This appendix will be completed as part of each final Project Specific WQMP.

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

This appendix will be completed as part of each final Project Specific WQMP.

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

This appendix will be completed as part of each final Project Specific WQMP.

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.

... 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 type="checkbox"/> Locations of inlets.	<input 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 type="checkbox"/> Maintain and periodically repaint or replace inlet markings. <input type="checkbox"/> Provide stormwater pollution prevention information to new site owners, leasees, 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.

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

<p>1</p> <p>IF THESE SOURCES WILL BE ON THE PROJECT SITE ...</p>	<p>2</p> <p>Permanent Controls—Show on WQMP Drawings</p>	<p>3</p> <p>Permanent Controls—List in WQMP Table and Narrative</p>	<p>4</p> <p>Operational BMPs—Include in WQMP Table and Narrative</p>
<p><input type="checkbox"/> D1. Need for future indoor & structural pest control</p>	<p><input type="checkbox"/> Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained.</p> <p><input type="checkbox"/> Show self-retaining landscape areas, if any.</p> <p><input type="checkbox"/> Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)</p>	<p><input type="checkbox"/> Note building design features that discourage entry of pests.</p> <p><input type="checkbox"/> State that final landscape plans will accomplish all of the following.</p> <p><input type="checkbox"/> Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.</p> <p><input 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.</p> <p><input type="checkbox"/> Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.</p> <p><input type="checkbox"/> Consider using pest-resistant plants, especially adjacent to hardscape.</p> <p><input 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.</p>	<p><input type="checkbox"/> Provide Integrated Pest Management information to owners, lessees, and operators.</p> <p><input type="checkbox"/> Maintain landscaping using minimum or no pesticides.</p> <p><input type="checkbox"/> See applicable operational BMPs in "What you should know for....Landscape and Gardening" at http://rcfllood.org/stormwater/Error Hyperlink reference not valid.</p> <p><input type="checkbox"/> Provide IPM information to new owners, lessees and operators.</p>
<p><input checked="" type="checkbox"/> D2. Landscape/Outdoor Pesticide Use</p>	<p><input type="checkbox"/> Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained.</p> <p><input type="checkbox"/> Show self-retaining landscape areas, if any.</p> <p><input type="checkbox"/> Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)</p>	<p><input type="checkbox"/> Note building design features that discourage entry of pests.</p> <p><input type="checkbox"/> State that final landscape plans will accomplish all of the following.</p> <p><input type="checkbox"/> Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.</p> <p><input 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.</p> <p><input type="checkbox"/> Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.</p> <p><input type="checkbox"/> Consider using pest-resistant plants, especially adjacent to hardscape.</p> <p><input 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.</p>	<p><input type="checkbox"/> Provide Integrated Pest Management information to owners, lessees, and operators.</p> <p><input type="checkbox"/> Maintain landscaping using minimum or no pesticides.</p> <p><input type="checkbox"/> See applicable operational BMPs in "What you should know for....Landscape and Gardening" at http://rcfllood.org/stormwater/Error Hyperlink reference not valid.</p> <p><input type="checkbox"/> Provide IPM information to new owners, lessees and operators.</p>

STORMWATER 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><input checked="" 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><input type="checkbox"/> 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 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 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			
1	2	3	4
Potential Sources of Runoff Pollutants	Permanent Controls—Show on WQMP Drawings	Permanent Controls—List in WQMP Table and Narrative	Operational BMPs—Include in WQMP Table and Narrative
<input type="checkbox"/> H. Industrial processes.	<input type="checkbox"/> Show process area.	<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."	<input type="checkbox"/> See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com See the brochure "Industrial & Commercial Facilities Best Management Practices for: Industrial, Commercial Facilities" at http://rcflood.org/stormwater/

STORMWATER POLLUTANT SOURCES / SOURCE CONTROL CHECKLIST

<p>IF THESE SOURCES WILL BE ON THE PROJECT SITE ...</p>	<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 checked="" type="checkbox"/></p>	<p>1. 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 L</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>

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

<p align="center">IF THESE SOURCES WILL BE ON THE PROJECT SITE ...</p>	<p align="center">... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE</p>		
<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: (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. (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). (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. (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"/> Wastewater 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>

STORMWATER POLLUTANT SOURCES / SOURCE CONTROL CHECKLIST

<p>1 IF THESE SOURCES WILL BE ON THE PROJECT SITE ...</p>	<p>2 Permanent Controls—Show on WQMP Drawings</p>	<p>3 Permanent Controls—List in WQMP Table and Narrative</p>	<p>4 Operational BMPs—Include in WQMP Table and Narrative</p>
<p><input type="checkbox"/> K. Vehicle/Equipment Repair and Maintenance</p>	<p><input 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><input 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>In the Stormwater Control Plan, note that all of the following restrictions apply to use the site:</p> <p><input 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.</p> <p><input 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.</p> <p><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> <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

<p>IF THESE SOURCES WILL BE ON THE PROJECT SITE ...</p>	<p align="center">... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE</p>		
<p>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 checked="" type="checkbox"/> L. Fuel Dispensing Areas</p>	<p><input type="checkbox"/> Fueling areas⁶ 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.</p> <p><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.] The canopy [or cover] shall not drain onto the fueling area.</p>		<p><input type="checkbox"/> The property owner shall dry sweep the fueling area routinely.</p> <p><input type="checkbox"/> See the Fact Sheet SD-30, "Fueling Areas" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com</p>

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.

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

<p>IF THESE SOURCES WILL BE ON THE PROJECT SITE ...</p>	<p align="center">... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE</p>		
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<p><input checked="" 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>

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

<p>1</p> <p>IF THESE SOURCES WILL BE ON THE PROJECT SITE ...</p>	<p>2</p> <p>Permanent Controls—Show on WQMP Drawings</p>	<p>3</p> <p>Permanent Controls—List in WQMP Table and Narrative</p>	<p>4</p> <p>Operational BMPs—Include in WQMP Table and Narrative</p>
<p><input checked="" 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>	

STORMWATER POLLUTANT SOURCES / SOURCE CONTROL CHECKLIST

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2 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative		
<input checked="" type="checkbox"/> P. Plazas, sidewalks, and parking lots.			<input 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

This appendix will be completed as part of each final Project Specific WQMP.

Appendix 10: Educational Materials

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

Sample educational materials are included in this Appendix.

Educational materials may be ordered at <http://www.floodcontrol.co.riverside.ca.us/stormwater/>.

Stormwater Pollution

What you should know for...



Best Management Practices (BMPs) for:

- Developers
- General Contractors
- Home Builders
- Construction Inspectors
- Anyone in the construction business

To report a hazardous materials spill, call:

Riverside County Hazardous Materials

Emergency Response Team

(909) 358-5055 8:00 a.m. – 5:00 p.m.

(909) 358-5245 after 5:00 p.m.

In an emergency call: 911

For recycling and hazardous waste disposal, call:

(909) 358-5055

To report an illegal dumping or a clogged storm drain, call:

1-800-506-2555

To order additional brochures or to obtain information on other pollution prevention activities, please call (909) 955-1200 or visit the StormWater/CleanWater Protection Program website at:
www.co.riverside.ca.us/depts/flood/waterquality/index.asp



The StormWater/CleanWater Protection Program gratefully acknowledges the Santa Clara Valley Nonpoint Pollution Control Program, Alameda Countywide CleanWater Program and the City of Los Angeles Stormwater Management Division for information provided in this brochure.

Resources

State Water Resources Control Board

Division of Water Quality

1001 I Street

Sacramento CA 95814

(916) 341-5455

www.swrcb.ca.gov/stormwtr/

Colorado River Basin Regional Water

Quality Control Board - Region 7

73-720 Fred Waring Drive, Suite 100

Palm Desert, CA 92260

(760) 346-7491

www.swrcb.ca.gov/~rwqcb7/

Santa Ana Regional Water

Quality Control Board - Region 8

3737 Main Street, Suite 500

Riverside, CA 92501-3348

(909) 782-4130

www.swrcb.ca.gov/~rwqcb8/

San Diego Regional Water

Quality Control Board - Region 9

9771 Clairemont Mesa Blvd., Suite A

San Diego, CA 92124

(858) 467-2952

www.swrcb.ca.gov/~rwqcb9/

STORMWATER POLLUTION FROM CONSTRUCTION ACTIVITIES

The two most common sources of stormwater pollution problems associated with construction activities are **erosion** and **sedimentation**. Failure to maintain adequate erosion and sediment controls at construction sites often results in sediment discharges into the storm drain system, creating multiple problems once it enters local waterways.

Construction vehicles and heavy equipment can also track significant amounts of mud and sediment onto adjacent streets. Additionally, wind may transport construction materials and wastes into streets storm drains, or directly into our local waterways.



StormWater Pollution . . . What You Should Know

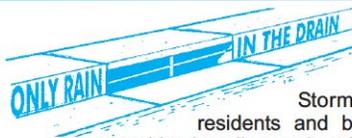
Riverside County has two drainage systems - sewers and storm drains. The storm drain system was designed to reduce flooding by carrying excess rainwater away from streets and developed areas. Since the storm drain system does not provide for water treatment, it also serves the *unintended* function of transporting pollutants directly to our local waterways.

Unlike sanitary sewers, storm drains are not connected to a wastewater treatment plant – they flow directly to our local streams, rivers and lakes.

Stormwater runoff is a part of the natural hydrologic process. However, land development and construction activities can significantly alter natural drainage processes and introduce pollutants into stormwater runoff. Polluted stormwater runoff from construction sites has been identified as a major source of water pollution in California. It jeopardizes the quality of our local waterways and can pose a serious threat to the health of our aquatic ecosystems.



The Cities and County of Riverside StormWater/CleanWater Protection Program



Because preventing pollution is much easier and less costly than cleaning up "after the fact," the Cities and County of Riverside StormWater/CleanWater Protection Program informs residents and businesses on pollution prevention activities. This pamphlet describes various Best Management Practices (BMPs) that construction site operators can use to prevent stormwater pollution.

In accordance with applicable federal and state law, the Cities and County of Riverside have adopted ordinances for stormwater management and discharge control that **prohibit** the discharge of pollutants into the storm drain system or local surface water. This includes discharges from construction sites containing sediment, concrete, mortar, paint, solvents, lubricants, vehicle fluids, fuel, pesticides, and construction debris.

PLEASE NOTE: The Federal, State and local regulations strictly prohibit the discharge of sediment and pollutants into the streets, the storm drain system or waterways. As an owner, operator or supervisor of a construction site, you may be held financially responsible for any environmental damage caused by your subcontractors or employees.

What Should You Do?

Advance Planning to Prevent Pollution

- Remove existing vegetation only as needed.
- Schedule excavation, grading, and paving operations for dry weather periods, if possible.
- Designate a specific area of the construction site, well away from storm drain inlets or watercourses, for material storage and equipment maintenance.
- Develop and implement an effective combination of erosion and sediment controls for the construction site.
- Practice source reduction by ordering only the amount of materials that are needed to finish the project.
- Educate your employees and subcontractors about stormwater management requirements and their pollution prevention responsibilities.
- Control the amount of surface runoff at the construction site by impeding internally generated flows and using berms or drainage ditches to direct incoming offsite flows to go around the site. *Note: Consult local drainage policies for more information.*

BEST MANAGEMENT PRACTICES

The following Best Management Practices (BMPs) can significantly reduce pollutant discharges from your construction site. Compliance with stormwater regulations can be as simple as minimizing stormwater contact with potential pollutants by providing covers and secondary containment for construction materials, designating areas away from storm drain systems for storing equipment and materials and implementing good housekeeping practices at the construction site.

- Protect all storm drain inlets and streams located near the construction site to prevent sediment-laden water from entering the storm drain system.
- Limit access to and from the site. Stabilize construction entrances/exits to minimize the track out of dirt and mud onto adjacent streets. Conduct frequent street sweeping.
- Protect stockpiles and construction materials from winds and rain by storing them under a roof, secured impermeable tarp or plastic sheeting.
- Avoid storing or stockpiling materials near storm drain inlets, gullies or streams.
- Phase grading operations to limit disturbed areas and duration of exposure.
- Perform major maintenance and repairs of vehicles and equipment offsite.
- Wash out concrete mixers only in designated washout areas at the construction site.
- Set-up and operate small concrete mixers on tarps or heavy plastic drop cloths.
- Keep construction sites clean by removing trash, debris, wastes, etc. on a regular basis.
- Clean-up spills immediately using dry clean-up methods (e.g., absorbent materials such as cat litter, sand or rags for liquid spills; sweeping for dry spills such as cement, mortar or fertilizer) and by removing the contaminated soil from spills on dirt areas.
- Prevent erosion by implementing any or a combination of soil stabilization practices such as mulching, surface roughening, permanent or temporary seeding.
- Maintain all vehicles and equipment in good working condition. Inspect frequently for leaks, and repair promptly.
- Practice proper waste disposal. Many construction materials and wastes, including solvents, water-based paint, vehicle fluids, broken asphalt and concrete, wood, and cleared vegetation can be recycled. Materials that cannot be recycled must be taken to an appropriate landfill or disposed of as hazardous waste.
- Cover open dumpsters with secured tarps or plastic sheeting. Never clean out a dumpster by washing it down on the construction site.
- Arrange for an adequate debris disposal schedule to insure that dumpsters do not overflow.

GENERAL CONSTRUCTION ACTIVITIES STORMWATER PERMIT

(Construction Activities General Permit)

The State Water Resources Control Board (SWRCB) adopted a new Construction Activities General Permit (WQ Order No. 99-08DWQ) on August 19, 1999, superseding the now expired SWRCB statewide General Permit (WQ Order No. 92-08DWQ). This permit is administered and enforced by the SWRCB and the local Regional Water Quality Control Boards (RWQCB). The updated Construction Activities General Permit establishes a number of new stormwater management requirements for construction site operator.

NOTE: Some construction activities stormwater permits are issued on a regional basis. Consult your local RWQCB to find out if your project requires coverage under any of these permits.

Frequently Asked Questions:

Does my construction site require coverage under the Construction Activities General Permit?

Yes, if construction activity results in the disturbance of five or more acres of total land area or is part of a common plan of development that results in the disturbance of five or more acres.

How do I obtain coverage under the Construction Activities General Permit?

Obtain the permit package and submit the completed Notice of Intent (NOI) form to the

SWRCB prior to grading or disturbing soil at the construction site. For ongoing construction activity involving a change of ownership, the new owner must submit a new NOI within 30 days of the date of change of ownership. The completed NOI along with the required fee should be mailed to the SWRCB.

What must I do to comply with the requirements of the Construction Activities General Permit?

- Implement BMPs for non-stormwater discharges year-round.
- Prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) prior to commencing construction activities.
- Keep a copy of the SWPPP at the construction site for the entire duration of the project.
- Calculate the anticipated stormwater runoff.
- Implement an effective combination of erosion and sediment control on all soil disturbed areas.
- Conduct site inspections prior to anticipated storm events, every 24-hours during extended storm events, and after actual storm event.
- Perform repair and maintenance of BMPs as soon as possible after storm events depending upon worker safety.

- Update the SWPPP as needed, to manage pollutants or reflect changes in site conditions.
- Include description of post construction BMPs at the construction site, including parties responsible for long-term maintenance.

NOTE: Please refer to the Construction Activities General Permit for detailed information. You may contact the SWRCB, your local RWQCB, or visit the SWRCB website at www.swrcb.ca.gov/stormwtr/ to obtain a State Construction Activities Stormwater General Permit packet.

How long is this Construction Activities General Permit in effect?

The Permit coverage stays in effect until you submit a Notice of Termination (NOT) to the SWRCB. For the purpose of submitting a NOT, all soil disturbing activities have to be completed and one of the three following criteria has to be met:

1. Change of ownership;
2. A uniform vegetative cover with 70 percent coverage has been established; or,
3. Equivalent stabilization measures such as the use of reinforced channel liners, soil cement, fiber matrices, geotextiles, etc., have been employed.

Helpful telephone numbers and links:

RIVERSIDE COUNTY WATER AGENCIES

City of Banning (951) 922-3130
 City of Beaumont/Cherry Valley (951) 845-9581
 City of Blythe (760) 922-6161
 City of Coachella (760) 398-3502
 City of Corona (951) 736-2263
 City of Hemet (951) 765-3710
 City of Norco (951) 270-5607
 City of Riverside Public Works (951) 351-6140
 City of San Jacinto (951) 654-4041
 Coachella Valley Water District (760) 398-2651
 Desert Water Agency (Palm Springs) (760) 323-4971
 Eastern Municipal Water District (951) 928-3777
 Elsinore Valley Municipal Water District (951) 674-3146
 Elsinore Water District (951) 674-2168
 Farm Mutual Water Company (951) 244-4198
 Idyllwild Water District (951) 659-2143
 Indio Water Authority (760) 391-4129
 Jurupa Community Services District (951) 685-7434
 Lee Lake Water (951) 658-3241
 Mission Springs Water (760) 329-6448
 Rancho California Water District (951) 296-6900
 Ripley, CSA #62 (760) 922-4951
 Riverside Co. Service Area #51 (760) 227-3203
 Rubidoux Community Services District (951) 684-7580
 Valley Sanitary District (760) 347-2356
 Western Municipal Water District (951) 789-3000
 Yucaipa Valley Water District (909) 797-5117

REPORT ILLEGAL STORM DRAIN DISPOSAL

1-800-506-2555 or e-mail us at fcnpdes@rcflood.org

- Riverside County Flood Control and Water Conservation District www.rcflood.org

Online resources include:

- California Storm Water Quality Association www.casqa.org
- State Water Resources Control Board www.waterboards.ca.gov
- Power Washers of North America www.thepwna.org

Stormwater Pollution

What you should know for...

Outdoor Cleaning Activities and Professional Mobile Service Providers



Storm drain pollution prevention information for:

- Car Washing / Mobile Detailers
- Window and Carpet Cleaners
- Power Washers
- Waterproofers / Street Sweepers
- Equipment cleaners or degreasers and all mobile service providers

Do you know where street flows actually go?

Storm drains are NOT connected to sanitary sewer systems and treatment plants!



The primary purpose of storm drains is to carry rain water away from developed areas to prevent flooding. Pollutants discharged to storm drains are transported directly into rivers, lakes and streams. Soaps, degreasers, automotive fluids, litter and a host of materials are washed off buildings, sidewalks, plazas and parking areas. Vehicles and equipment must be properly managed to prevent the pollution of local waterways.

Unintentional spills by mobile service operators can flow into storm drains and pollute our waterways. **Avoid mishaps.** Always have a **Spill Response Kit** on hand to clean up unintentional spills. Only emergency **Mechanical** repairs should be done in City streets, using drip pans for spills. **Plumbing** should be done on private property. Always store chemicals in a leak-proof container and keep covered when not in use. **Window/Power Washing** waste water shouldn't be released into the streets, but should be disposed of in a sanitary sewer, landscaped area or in the soil. Soiled **Carpet Cleaning** wash water should be filtered before being discharged into the sanitary sewer. Dispose of all filter debris properly. **Car Washing/Detailing** operators should wash cars on private property and use a regulated hose nozzle for water flow control and runoff prevention. Capture and dispose of waste water and chemicals properly. Remember, storm drains are for receiving rain water runoff only.

REPORT ILLEGAL STORM DRAIN DISPOSAL
1-800-506-2555

Help Protect Our Waterways!

Use these guidelines for Outdoor Cleaning Activities and Wash Water Disposal

Did you know that disposing of pollutants into the street, gutter, storm drain or body of water is **PROHIBITED** by law and can result in stiff penalties?

Best Management Practices

Waste wash water from Mechanics, Plumbers, Window/Power Washers, Carpet Cleaners, Car Washing and Mobile Detailing activities may contain significant quantities of motor oil, grease, chemicals, dirt, detergents, brake pad dust, litter and other materials.

Best Management Practices, or BMPs as they are known, are guides to prevent pollutants from entering the storm drains. *Each of us* can do our part to keep storm water clean by using the suggested BMPs below:

Simple solutions for both light and heavy duty jobs:

Do...consider dry cleaning methods first such as a mop, broom, rag or wire brush. Always keep a spill response kit on site.

Do...prepare the work area before power cleaning by using sand bags, rubber mats, vacuum booms, containment pads or temporary berms to keep wash water away from the gutters and storm drains.

Do...use vacuums or other machines to remove and collect loose debris or litter before applying water.

Do...obtain the property owner's permission to dispose of *small amounts* of power washing waste water on to landscaped, gravel or unpaved surfaces.

Do...check your local sanitary sewer agency's policies on wash water disposal regulations before disposing wash water to the sewer. (See list on reverse side)

Do...be aware that if discharging to landscape areas, soapy wash water may damage landscaping. Residual wash water may remain on paved surfaces to evaporate. Sweep up solid residuals and dispose of properly. Vacuum booms are another option for capturing and collecting wash water.

Do...check to see if local ordinances prevent certain activities.

Do not let...wash or waste water from sidewalk, plaza or building cleaning go into a street or storm drain.

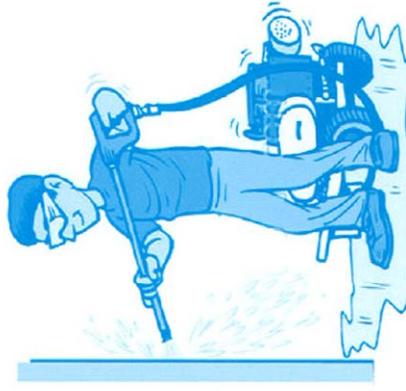


Report illegal storm drain disposal,
Call Toll Free

1-800-506-2555

Using Cleaning Agents

Try using biodegradable/phosphate-free products. They are easier on the environment, but don't confuse them for being toxic free. Soapy water entering the storm drain system can impact the delicate aquatic environment.



When cleaning surfaces with a **high-pressure washer** or **steam cleaner**, additional precautions should be taken to prevent the discharge of pollutants into the storm drain system. These two methods of surface cleaning can loosen additional material that can contaminate local waterways.

Think Water Conservation

Minimize water use by using high pressure, low volume nozzles. Be sure to check all hoses for leaks. Water is a precious resource, don't let it flow freely and be sure to shut it off in between uses.

Screening Wash Water

Conduct thorough dry cleanup before washing exterior surfaces, such as buildings and decks **with loose paint**, sidewalks or plaza areas. Keep debris from entering the storm drain after cleaning by first passing the wash water through a "20 mesh" or finer screen to catch the solid materials, then dispose of the mesh in a refuse container. Do not let the remaining wash water enter a street, gutter or storm drain.

Drain Inlet Protection & Collection of Wash Water

- Prior to any washing, block all storm drains with an impervious barrier such as sandbags or berms, or seal the storm drain with plugs or other appropriate materials.
- Create a containment area with berms and traps or take advantage of a low spot to keep wash water contained.
- Wash vehicles and equipment on grassy or gravel areas so that the wash water can seep into the ground.
- Pump or vacuum up all wash water in the contained area.

Concrete/Coring/Saw Cutting and Drilling Projects

Protect any down-gradient inlet by using dry activity techniques whenever possible. If water is used, minimize the amount of water used during the coring/drilling or saw cutting process. Place a barrier of sandbags and/or absorbent berms to protect the storm drain inlet or watercourse. Use a shovel or wet vacuum to remove the residue from the pavement. Do not wash residue or particulate matter into a storm drain inlet or watercourse.

Stormwater and the Construction Industry



Protect Natural Features



Bad

- Minimize clearing.
- Minimize the amount of exposed soil.
- Identify and protect areas where existing vegetation, such as trees, will not be disturbed by construction activity.
- Protect streams, stream buffers, wild woodlands, wetlands, or other sensitive areas from any disturbance or construction activity by fencing or otherwise clearly marking these areas.

Good

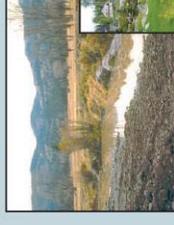


Construction Phasing



- Sequence construction activities so that the soil is not exposed for long periods of time.
- Schedule or limit grading to small areas.
- Install key sediment control practices before site grading begins.
- Schedule site stabilization activities, such as landscaping, to be completed immediately after the land has been graded to its final contour.

Vegetative Buffers



Bad

- Protect and install vegetative buffers along waterbodies to slow and filter stormwater runoff.
- Maintain buffers by mowing or replanting periodically to ensure their effectiveness.

Good



Silt Fencing



Bad

- Inspect and maintain silt fences after each rainstorm.
- Make sure the bottom of the silt fence is buried in the ground.
- Securely attach the material to the stakes.
- Don't place silt fences in the middle of a waterway or use them as a check dam.
- Make sure stormwater is not flowing around the silt fence.

Good



Maintain your BMPs!

**IN RIVERSIDE COUNTY ...Call 1-800-506-2555
TO REPORT ILLEGAL STORMDRAIN DISPOSAL**

E-mail: Flood.fcnpdes@co.riverside.ca.us

Visit our website: www.floodcontrol.co.riverside.ca.us

Brought to you by the Storm Water/Clean Water Pollution Protection Program.....

REMEMBER, ONLY RAIN IN THE STORMDRAIN!

Construction Entrances



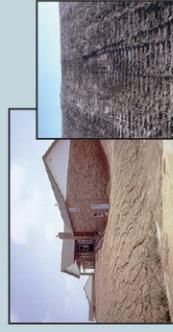
Bad

- Remove mud and dirt from the tires of construction vehicles before they enter a paved roadway.
- Properly size entrance BMPs for all anticipated vehicles.
- Make sure that the construction entrance does not become buried in soil.

Good



Slopes



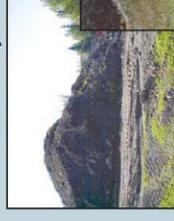
Bad

- Rough grade or terrace slopes.
- Break up long slopes with sediment barriers, or under drain, or divert stormwater away from slopes.

Good



Dirt Stockpiles



Bad

- Cover or seed all dirt stockpiles.

Good



Site Stabilization



Bad

- Vegetate, mulch, or otherwise stabilize all exposed areas as soon as land alterations have been completed.

Good



Storm Drain Inlet Protection



Bad

Good



- Use rock or other appropriate material to cover the storm drain inlet to filter out trash and debris.
- Make sure the rock size is appropriate (usually 1 to 2 inches in diameter).
- If you use inlet filters, maintain them regularly.



Stormwater and the Construction Industry Planning and Implementing Erosion and Sediment Control Practices

The construction industry is a critical participant in the nation's efforts to protect streams, rivers, lakes, wetlands, and oceans. Through the use of best management practices (BMPs), construction site operators are the key defense against erosion and sedimentation.

As stormwater flows over a construction site, it picks up pollutants like sediment, debris, and chemicals. High volumes of storm water can also cause stream bank erosion, and destroy downstream aquatic habitat. Preventing soil erosion and sedimentation is an important responsibility at all construction sites.

In addition to the environmental impact, uncontrolled erosion can have a significant financial impact on a construction project. It costs money and time to repair gullies, replace vegetation, clean sediment-clogged storm drains, replace poorly installed BMPs, and mitigate damage to other people's property or to natural resources.

Best Management Practice (BMP)
A BMP is a method used to prevent or control stormwater runoff and the discharge of pollutants, including sediment, into local waterways. Site fences, silt fences, silt fences, and site-stabilization techniques are typical BMPs on a construction site.

Operator
An operator is someone who has control over and the ability to modify construction plans and specifications (e.g. owner, general contractor)

Someone who has control over the day-to-day operations at a site (e.g. owner, general contractor) that is necessary to assure compliance with the permit requirements. It is the responsibility of a construction site owner or operator to contain stormwater runoff from preventing erosion during all stages of a project.

There may be more than one person at a site who meets these definitions and must apply for permit coverage. (States may have different definitions of the term "operator.")

So what's being done about polluted runoff?

The Clean Water Act includes the National Pollutant Discharge Elimination System (NPDES) permitting program. As of June 2003, 44 states have NPDES programs. The NPDES program is administered by the EPA and authorized to operate the NPDES stormwater permit program. EPA issues the permits. Permits vary from state to state, so contact your state or EPA for specific information. Your permitting authority has specific information on your state's NPDES stormwater permit program. In general, construction permits require construction operators to do all of the following:

- Develop and implement a stormwater pollution prevention plan
 - Submit a permit application or notice of intent (NOI)
 - Comply with the permit, including maintaining BMPs and inspecting the site
- Under the NPDES program, on construction activities that disturb 1 or more acres are required to obtain stormwater permit coverage. States have different names for the plans that construction operators must develop, such as
- Stormwater pollution prevention plan
 - Erosion and sediment control plan
 - Erosion control and stormwater management plan
 - Stormwater management plan
 - Water pollution control plan
 - Pollution prevention plan

This document uses the term "Plan."

I think I need a permit... Where do I start?

All land-disturbing activities, including clearing, grading, and excavation, that disturb 1 or more acres are required to be covered under state or EPA issued NPDES construction stormwater permit prior to land disturbance. Permit requirements vary by state. Begin by researching the specific requirements in your state. You might already be required to local best management practices (BMPs) to prevent erosion, but you may need to meet additional requirements under the NPDES program. If you are not sure if you need a permit, contact your permitting authority to find out exactly what you need to do. A good place to start your search is the Construction Industry Compliance Assistance web site at <http://www.enr.com/ciaca>.

The NPDES permit requirements include small construction activities that are part of a larger common plan of development or sale, such as a single lot within a larger subdivision. For developments with multiple operators, all operators must have permit coverage for their individual parts of the larger development, no matter how large or small each operation happens to be. When there are multiple operators at a site, they're encouraged to develop and share one comprehensive Plan and obtain permit coverage as co-permittees.

The owner or operator of the construction site is responsible for complying with the requirements of the permit. Responsibilities include developing a Plan, obtaining permit coverage, implementing BMPs, and stabilizing the site at the end of the construction activity.

Determine your eligibility
All construction activity that disturbs 1 or more acres of land, as well as activity that disturbs less than 1 acre but is part of a larger common plan of development, must obtain permit coverage.

Read and understand your stormwater permit requirements
Get a copy of the permit, construction activities and a permit application (or notice of intent form) from your state or EPA permitting authority.

Develop a Plan
Most states do not require you to submit your Plan. However, you do need to keep the Plan on site. If that's impractical, you may post a notice that tells where the Plan is kept so it can be accessed by the permitting authority and other interested parties.

You'll need your state or EPA to post a copy of your completed application on site. Put it in a place where the public can see it so they'll know your site is covered by an NPDES permit!

Apply for permit coverage
Once you understand your permit requirements and have developed a Plan, you can submit a permit application (or notice of intent) to your permitting authority. This must be done before beginning any land disturbance on the site. Some states require a few days of lead time, so check with your permitting authority. Once you've submitted the application, you must satisfy the conditions of the permit.

Implement the Plan
Be prepared to implement the BMPs in your Plan before construction begins. Ensure that BMPs are properly maintained, and upgrade and repair them as necessary.

Developing and Implementing a Plan

You must have a Plan that includes erosion and sediment control and pollution prevention BMPs. These Plans require

- Advance planning and training to ensure proper implementation of the BMPs
- Erosion and sediment control BMPs in place until the area is permanently stabilized
- Pollution prevention BMPs to keep the construction site "clean"
- Regular inspection of the construction site to ensure proper installation and maintenance of BMPs

Fortunately, the practices and measures that must be included in your Plan are already part of the standard operating procedures at many construction sites. Site steps are associated with developing and implementing a stormwater Plan. There's a wealth of information available or developing pollution prevention BMPs. For more information on developing and implementing BMPs, visit www.epa.gov/owp/development. A sample construction plan is available at www.epa.gov/owp/development/sample_cplan_swppp.pdf.

1. Site Evaluation and Design Development

- Collect site information
- Develop site plan design
- Prepare pollution prevention site map

The first step in preparing a Plan is to define the characteristics of the site and the type of construction that will occur. This involves collecting site information, identifying natural features that should be protected, developing a site plan design, describing the nature of the construction activity, and preparing a pollution prevention site map.

2. Assessment

- Measure the site area
- Determine the drainage areas
- Calculate the runoff coefficient

The next step is assessing the impact the project will have on stormwater runoff. Determine the drainage area and estimate the runoff amounts and velocities. For more information on calculating the runoff coefficient, go to www.epa.gov/owp/development/chap02_cyfrd.pdf, page 11.

3. Control Selection and Plan Design

- Review and incorporate state or local requirements
- Select erosion and sediment controls
- Select other controls
- Select stormwater management controls
- Indicate the location of controls on the site map
- Prepare an inspection and maintenance plan
- Coordinate controls with construction activity
- Prepare sequence of major activities

In the third step, you'll actually document your requirements to prevent and control polluted stormwater runoff. You must delineate areas that will not be disturbed, including critical natural areas like streambeds, areas, floodplains, and trees. You must also identify the measures (or BMPs) you'll use to protect these areas.

Soil erosion control tips:

- Design the site to address erosion from the ground and to keep it out of storm drains. Eliminate erosion-prone areas, such as steep slopes, and minimize the use of temporary erosion control systems while maintaining the use of permanent infiltration and diversion techniques.
- Minimize the amount of exposed soil on site.
- Minimize the amount of exposed soil on site. Subject to erosion, the best soil exposed, the steepest and shortest will be the control erosion.
- Vegetate disturbed areas with permanent or temporary seeding immediately upon reaching final grade.
- Remove or cover rockpiles that will not be used immediately.
- Separate erosion-prone areas from storm drains.
- Diversion measures can be used to direct flow away from exposed areas toward stable runoff.
- Silt fences and other types of perimeter filters should be used to reduce the velocity of runoff.
- Project-defined channels immediately with measures adequate to handle the storm flows expected.
- Soil potatoes, turned tires, tires, or other materials to measure should be used to show the location of erosion-prone areas. Use other materials like geotextiles or vegetation where possible to prevent down-drain impacts.
- Keep sediment on site.
- Place aggregate or cover on construction vehicles that will be used to access the site.
- Regularly inspect and maintain erosion control measures.
- Regularly remove collected sediment from all silt fences, berms, traps, and other BMPs.
- Monitor tree growth and mulch removal to place until vegetation is well established.
- Maintain a fence that protects sensitive areas, fill fences, diversion structures, and other BMPs.

Other BMPs and Activities to Control Polluted Runoff

You'll need to select other controls to address potential pollutant sources on your site. Construction materials, debris, trash, fuel, paint, and rockpiles become pollution sources when it rains. Pollution prevention practices can significantly reduce the amount of pollution leaving construction sites. The following are some simple practices that should be included in the Plan and implemented on site:

- Cover pollutant sources. Place covers on the site of construction materials, fuel tanks, or other pollutant sources on site periodically.
- Pick, radi, and seal in areas with cracks. Keep up with the local water and sewer utility or other local agency to make sure that cracks in sidewalks and other areas are repaired.
- Practice good housekeeping. Keep the construction site free of litter, construction debris, and leaking containers. Keep all waste in one area to minimize clean up.
- Never hose down paved surfaces to clean dirt, debris, or trash. This water could wash directly into storm drains or streams. Sweep up materials and dispose of them in the trash. Never bury trash or debris.
- Dispose of hazardous materials properly.

4. Certification and Notification

• Certify the Plan

- Submit permit application or notice of intent

Once the Plan is complete, you must certify the Plan. This is an important step in the permit process. Your permit may require that the Plan be kept on site, so be sure to keep it available for the staff implementing the Plan.

Erosion and sedimentation control practices are only as good as their installation and maintenance.

- Inspect and maintain controls
- Update/change the Plan
- Report releases of hazardous materials

A Plan describes the practices and activities you'll use to prevent stormwater contamination and meet the NPDES permit requirements. Make sure that the Plan is implemented and that the Plan is updated as necessary to reflect changes on the site.

Inspection and maintenance procedures for the BMPs have been established to ensure that the BMPs have been installed correctly.

Regularly inspect the BMPs (especially before and after rain events) and perform any necessary repairs or maintenance immediately. Many BMPs are designed to handle a limited amount of sediment. If not maintained, they'll become ineffective as a source of sediment pollution.

It's also important to keep records of BMP installation, implementation, and maintenance. Keep track of major grading activities that occur on the site, when construction activities cease (temporarily or permanently), and when a site is temporarily or permanently stabilized.

If construction plans change any time, or if more appropriate BMPs are chosen for the site, update the Plan accordingly.

6. Completing the Project: Final Stabilization of the Permit

- Final stabilization
- Notice of Termination
- Record retention

Many states and EPA require a Notice of Termination (NOT) or other notification when the construction activity is complete. An NOT is required when:

- Final stabilization has been achieved on all portions of the site for which the permit is required.
- Another operator has assumed control over all areas of the site that have not been finally stabilized. That operator would need to submit a new permit application to the permitting authority.
- For residential construction only, temporary stabilization of a lot has been completed prior to transfer of ownership to a homeowner, with the homeowner being made aware of the need to perform final stabilization.

Permittees must keep a copy of their permit application and their Plan for at least 3 years following final stabilization. This period may be longer depending on state and local requirements.

Preconstruction Checklist

- A site description, including
 - Intended sequence of major construction activities
 - Total area of site and rainfall runoff data
 - A site map with
 - A site map with
 - Approximate slopes after major grading
 - Outline of areas which will not be disturbed
 - Location of major structural and nonstructural soil erosion controls
 - Areas where stabilization practices are expected to occur
 - Stormwater discharge locations
 - Name of the receiving water(s)
 - A description of controls:
 - Erosion and sediment controls, including
 - Silt fences and traps for all east disturbed by construction
 - Stormwater management controls, including
 - Measures used to control pollutants originating on-stormwater discharge locations
 - Velocity dispersion devices to provide nonerosive flow conditions from the discharge point along the length of any outlet channel
 - Other controls, including
 - Waste disposal practices that prevent discharge of solid materials
 - Measures to minimize erosion tracking of sediments by construction vehicles
 - Measures to ensure compliance with state or local waste disposal, sanitary sewer, or septic system regulation
 - Description of the timing during the construction when measures will be implemented
 - Source of materials incorporated into the Plan
 - Inspection and maintenance procedures for control measures identified in the Plan
 - Contractor certification and Plan verification

Implementation Checklist

- Maintain records of construction activities, including
 - Dates when major grading activities occur
 - Dates when construction activities temporarily cease on the site or a portion of the site
 - Dates when construction activities permanently cease on the site or a portion of the site
 - Dates when stabilization measures are completed on the site
 - Prepare inspection reports summarizing
 - Name of person conducting BMP inspections
 - Qualifications of person conducting BMP inspections
 - BMPs inspected
 - Observed conditions
 - Necessary change to the Plan
 - Report releases of any polluting quantities of oil or hazardous materials
 - Notify the National Response Center at 800-424-8802 (in mobility)
 - Report releases to your permitting authority immediately, or as specified in your permit. You must also provide a written report within 14 days.
 - Modify the Plan to include
 - The date of release
 - Circumstances leading to the release
 - Steps taken to prevent recurrence of the release
 - Incorporate Plan as necessary
 - Incorporate requests of the permitting authority to bring the Plan into compliance
 - Address changes in design, construction operation, or maintenance that alter the potential for discharge of pollutants

An ounce of prevention is worth a pound of cure! It's far more efficient and cost-effective to prevent pollution than it is to try to correct problems later. Installing and maintaining simple BMPs and pollution prevention techniques on site can greatly reduce the potential for stormwater pollution and can also save you money!



Visit www.epa.gov/owpdes/stormwater for more information.

What is stormwater runoff?

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground, and streets prevent stormwater from naturally soaking into the ground.



Why is stormwater runoff a problem?

Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.



The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- ◆ Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- ◆ Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- ◆ Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- ◆ Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- ◆ Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.
- ◆ Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.



After the Storm



For more information contact:

or visit
www.epa.gov/npdes/stormwater
www.epa.gov/nps



EPA 833-B-03-002
 January 2003

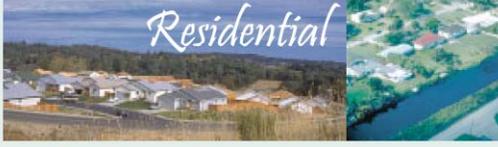


A Citizen's Guide to Understanding Stormwater

Internet Address (URL) • HTTP://www.epa.gov
 Recycled/Postconsumer • Printed with Vegetable Oil Based Ink on 100% Postconsumer
 Process Chlorine Free Recycled Paper

Stormwater Pollution Solutions

Residential



Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.



- ◆ Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- ◆ Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- ◆ Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- ◆ Cover piles of dirt or mulch being used in landscaping projects.

Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.



- ◆ Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- ◆ Don't dispose of household hazardous waste in sinks or toilets.

Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.



- ◆ Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- ◆ Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.



- ◆ When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.



Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.

Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.



Rain Gardens and Grassy Swales—Specially designed areas planted with native plants can provide natural places for



rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.

Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.



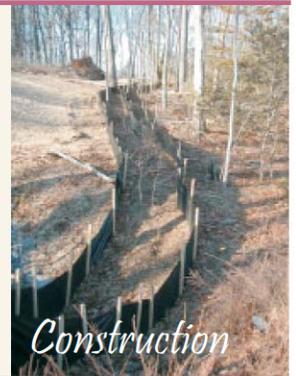
Commercial

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- ◆ Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- ◆ Cover grease storage and dumpsters and keep them clean to avoid leaks.
- ◆ Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- ◆ Divert stormwater away from disturbed or exposed areas of the construction site.
- ◆ Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- ◆ Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.



Construction

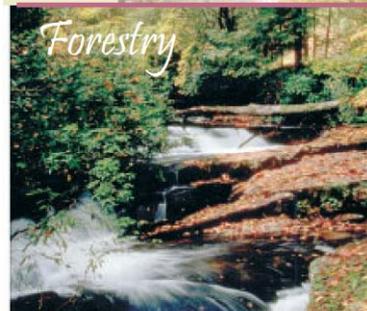


Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.



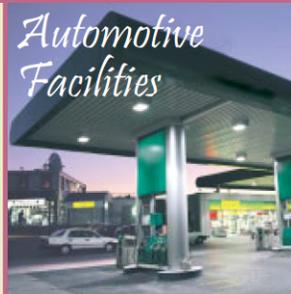
- ◆ Keep livestock away from streambanks and provide them a water source away from waterbodies.
- ◆ Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- ◆ Vegetate riparian areas along waterways.
- ◆ Rotate animal grazing to prevent soil erosion in fields.
- ◆ Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.



Forestry

Improperly managed logging operations can result in erosion and sedimentation.

- ◆ Conduct preharvest planning to prevent erosion and lower costs.
- ◆ Use logging methods and equipment that minimize soil disturbance.
- ◆ Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- ◆ Construct stream crossings so that they minimize erosion and physical changes to streams.
- ◆ Expedite revegetation of cleared areas.



Automotive Facilities

Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- ◆ Clean up spills immediately and properly dispose of cleanup materials.
- ◆ Provide cover over fueling stations and design or retrofit facilities for spill containment.
- ◆ Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- ◆ Install and maintain oil/water separators.

6 What can a business expect when inspected by the city?

The inspection will include a meeting with the business representative, a walk-through of the facility, evaluation of current storm water best management practices and recommendations for additional measures that may be required to comply with the 2002 MS4 Permit and the city's storm water ordinance. Educational material will also be provided to the business representative. If a follow-up inspection is required the city's inspector will schedule one for a later date.

7 What will happen if I do not comply with the city inspector's recommendations?

The city is mandated by the State to establish sanctions for non-compliance. Sanctions may include:

- Verbal or written warnings
- Notice of violation or non-compliance
- Administrative Order
- Stop work or Cease and Desist Order
- Imposition of monetary penalties or criminal prosecution (infraction or misdemeanor)

8 Will the city charge a fee for these inspections?

The State of California has not provided any funding to Moreno Valley for this mandated inspection program, therefore the city is required to charge a fee to recover its costs. If the city ignores the State mandate it will be subject to significant monetary penalties, potentially up to and possibly greater than \$27,500 per day. The city has adopted inspection fees for restaurants, commercial and industrial businesses and will be evaluating them this fiscal year.

9 Businesses are not the only cause of storm water and non-storm water pollution. What is the city doing in those other areas?

Storm water and non-storm water pollution comes from a variety of sources. The city is committed to improving water quality and reducing the amount of pollutants that enter our precious waterways. For example, the city already performs construction site inspections to address erosion and prevent sediment from entering our streets and storm drains. Also, the city is enforcing urban runoff requirements on new and significant redevelopment projects whereby developers must incorporate a variety of BMPs into their projects.

Pollution Abatement

Business Inspection Program
National Pollutant Discharge
Elimination System Permit

The City of Moreno Valley looks forward to working with you to help keep our waterways clean.

For more information or assistance,

please call 951.413.3497.

9/2004



In order to comply with the 2002 Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) Permit for the Santa Ana River Watershed Region issued by the Santa Ana Regional Water

Quality Control Board for the

State of California, the

City of Moreno Valley

is mandated

to perform storm water and non-storm water compliance inspections of local businesses to ensure the businesses are complying with the

MS4 Permit and the city's

storm water ordinance.



Questions & Answers

Below are some frequently asked questions about the NPDES Pollution Abatement Program

1 *Runoff from my business goes to a storm drain inlet in my parking lot or it flows to the city street. Doesn't this runoff eventually go the sewer treatment plant to be cleaned?*

The water that drains down the sink or toilet drains to the sanitary sewer and is treated at the sewer treatment plant, but storm water and non-storm water runoff from parking lots and landscape areas enter our streets and storm drains. This water does not receive any treatment and flows directly to our channels, rivers, lakes and finally the ocean. It is essential that this urban runoff be cleaned to the "maximum extent practicable."

2 *The County Department of Environmental Health Compliance Assistance Program (CAP) already comes to my business and performs a storm water compliance survey. Does this mean I will not be inspected by the city?*

The city is responsible for the inspection program. CAP provides a valuable service that the city will utilize. The city will evaluate the results of the most recent CAP survey to determine if the facility is in compliance with the MS4 Permit and its storm water ordinance. If the facility is in compliance, the city will not perform the currently scheduled inspection. If the facility is not in compliance, the city will contact the business and schedule a follow-up inspection using a city inspector.

3 *What businesses will be inspected?*

All food service facilities, and many existing commercial and industrial businesses must be inspected. If you are already being inspected by CAP you fall under this program. Other businesses not being inspected by CAP will fall under this program if they are the following types of businesses:

- Nurseries and green houses
- Mobile automobile or other vehicle washing - (base of operations)
- Mobile carpet and drapery cleaners - (base of operations)
- Mobile high pressure or steam cleaning - (base of operations)
- Landscape and hardscape installation - (base of operations)
- Painting and coating
- Pool, lake and fountain cleaning - (base of operations)
- Automotive related businesses
- Others that the city determines may contribute a significant pollutant load to the streets and storm drains

4 *How often will a business be inspected?*

Businesses will be prioritized according to their threat to water quality. A number of factors will be used to set the priority. Once the priority is set a business will be inspected annually, bi-annually or once every five years (city inspections may or may not coincide with the county's CAP inspections).

5 *What can I do before the inspection?*

There are many things you can do. Best Management Practices (BMPs) are procedures and practices you can implement with little or no cost to prevent pollutants and other hazardous materials from leaving your site. The city has a number of free brochures that address storm water and non-storm water pollution BMPs.

Some BMPs include:

- Good Housekeeping
- Preventative Maintenance
- Safe Materials & Handling
- Employee Training