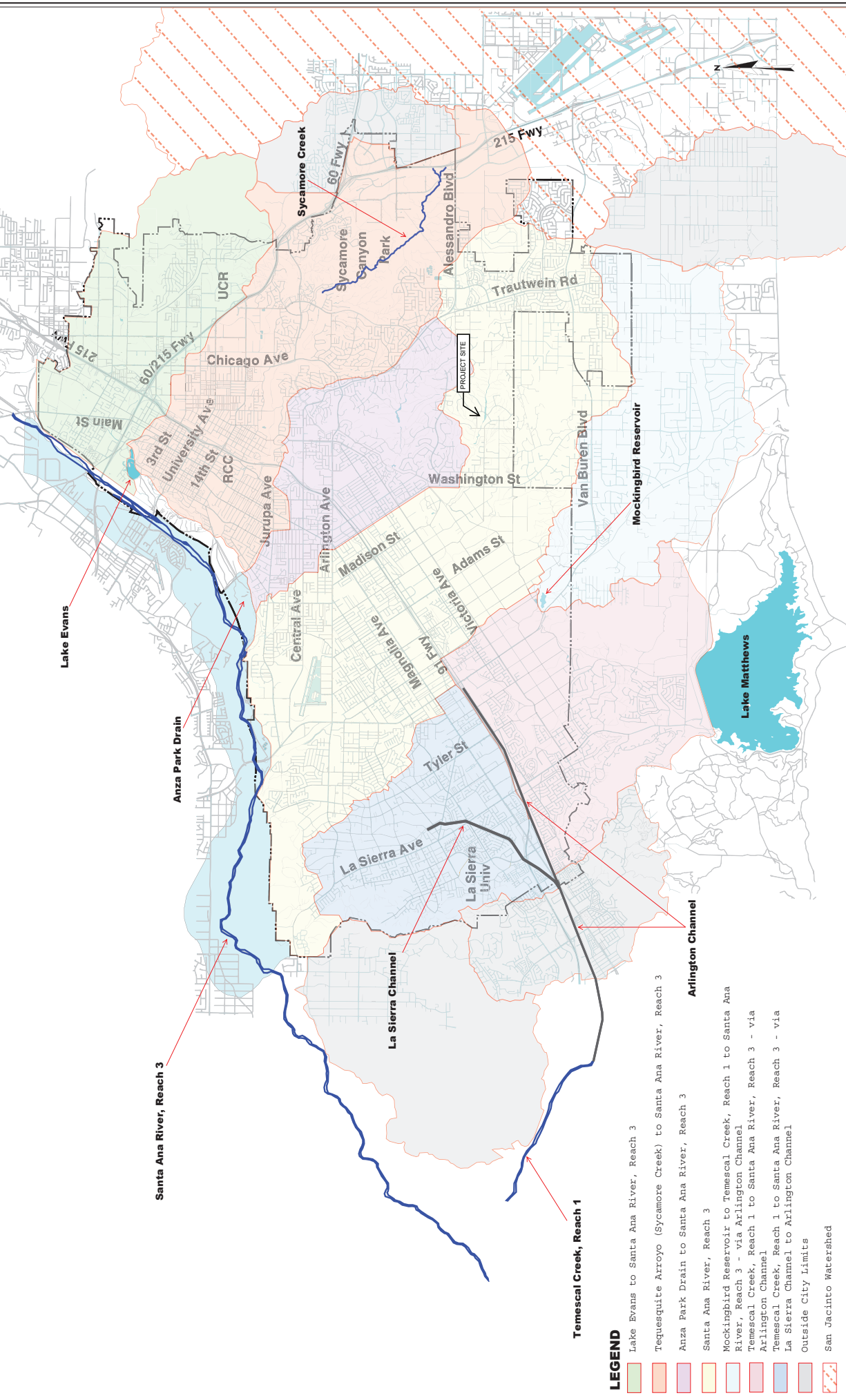


RECEIVING WATERS MAP

RECEIVING WATERS MAP

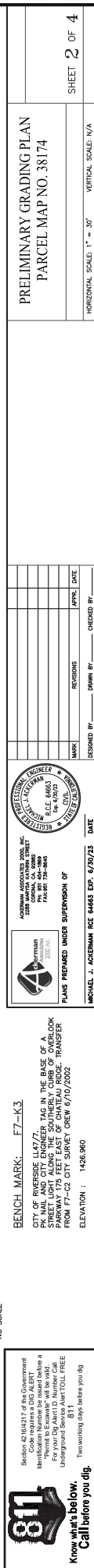


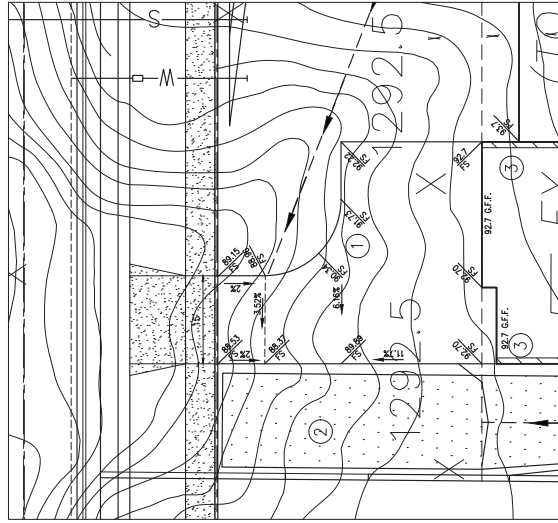
LEGEND

- Lake Evans to Santa Ana River, Reach 3
- Tequesquite Arroyo (Sycamore Creek) to Santa Ana River, Reach 3
- Anza Park Drain to Santa Ana River, Reach 3
- Santa Ana River, Reach 3
- Mockingbird Reservoir to Temescal Creek, Reach 1 to Santa Ana River, Reach 3 - via Arlington Channel
- Temescal Creek, Reach 1 to Santa Ana River, Reach 3 - via Arlington Channel
- Temescal Creek, Reach 1 to Santa Ana River, Reach 3 - via La Sierra Channel to Arlington Channel
- Outside City Limits
- San Jacinto Watershed

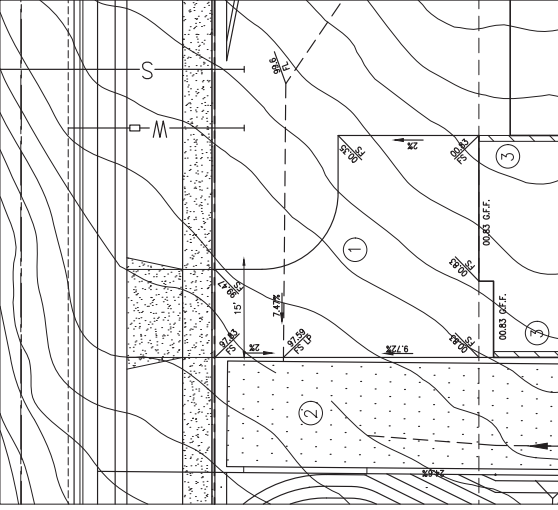
Appendix 2: Construction Plans

Grading and Drainage Plans

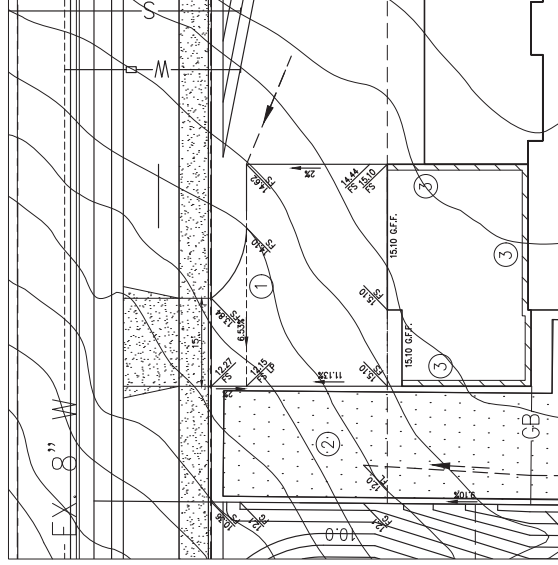




LOT 2 DRIVEWAY DETAIL
SCALE 1" = 10'



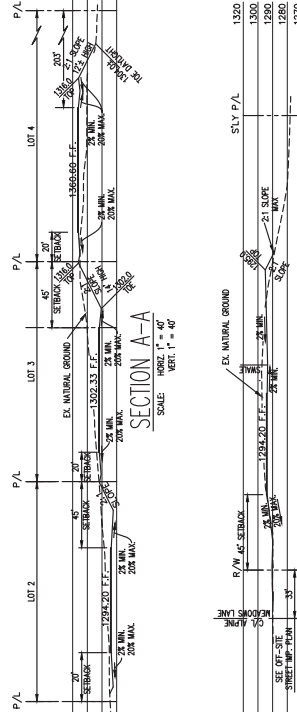
LOT 3 DRIVEWAY DETAIL



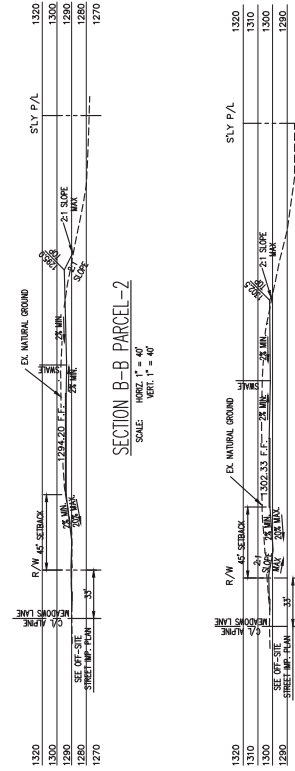
LOT 4 DRIVEWAY DETAIL

CONSTRUCTION NOTES:

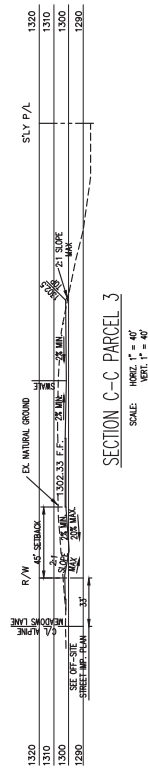
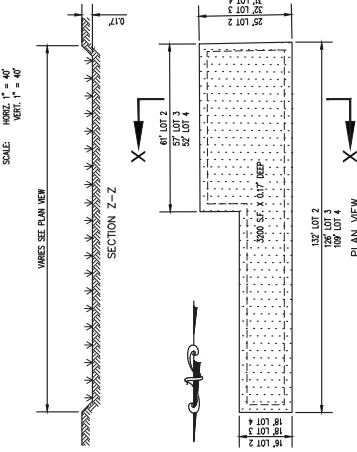
- ① CONSTRUCT CONC. DWY WITH 4" PCC OVER COMPACTED NATIVE.
- ② CONSTRUCT WOMP SELF RETAINING AREA 0.17' DEEP MIN.
- ③ CONSTRUCT STEM WALL



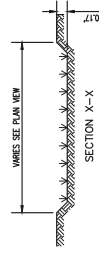
SECTION A-A



SECTION B-B PARCEL-2

SECTION C-C PARCEL 3

TYPICAL WATER RETENTION AREA
NO SCALE



SECTION



Section 42164217 of the Government Code requires a DIGALERT Identification Number be issued before a "Permit to Excavate" will be valid. For your Dig Alert I.D. Number Call Underground Service Alert TOLL FREE 811

BENCH MARK: F7-K3
CITY OF RIVERSIDE LL47/7.
PK NAIL AND CITY ENGINEER TAG IN THE BASE OF A
STREET LIGHT ALONG THE SOUTHERLY CURB OF OVERLOOK
PARKWAY 175 FEET EAST OF CHATEAU RIDGE. TRANSFER
FROM F7-C2. CITY SURVEY CREW 6/10/2002

BENCH MARK: F7-K3

Know what's below.

FROM F7-C2 CITY SURVEY
ELEVATION : 1426.960

ACKERMAN ASSOCIATES 2000, INC.
2250 MARTHA KATHIRN STREET
CORONA, CA 92682
PH 951 454-1869
FAX 951 736-8645

 ACKERMAN ASSOCIATES
2000, INC.

PLANS PREPARED UNDER SUPERVISION OF



MICHAEL J. ACKERMAN RCE 64663 EXP. 6/30/23 DATE

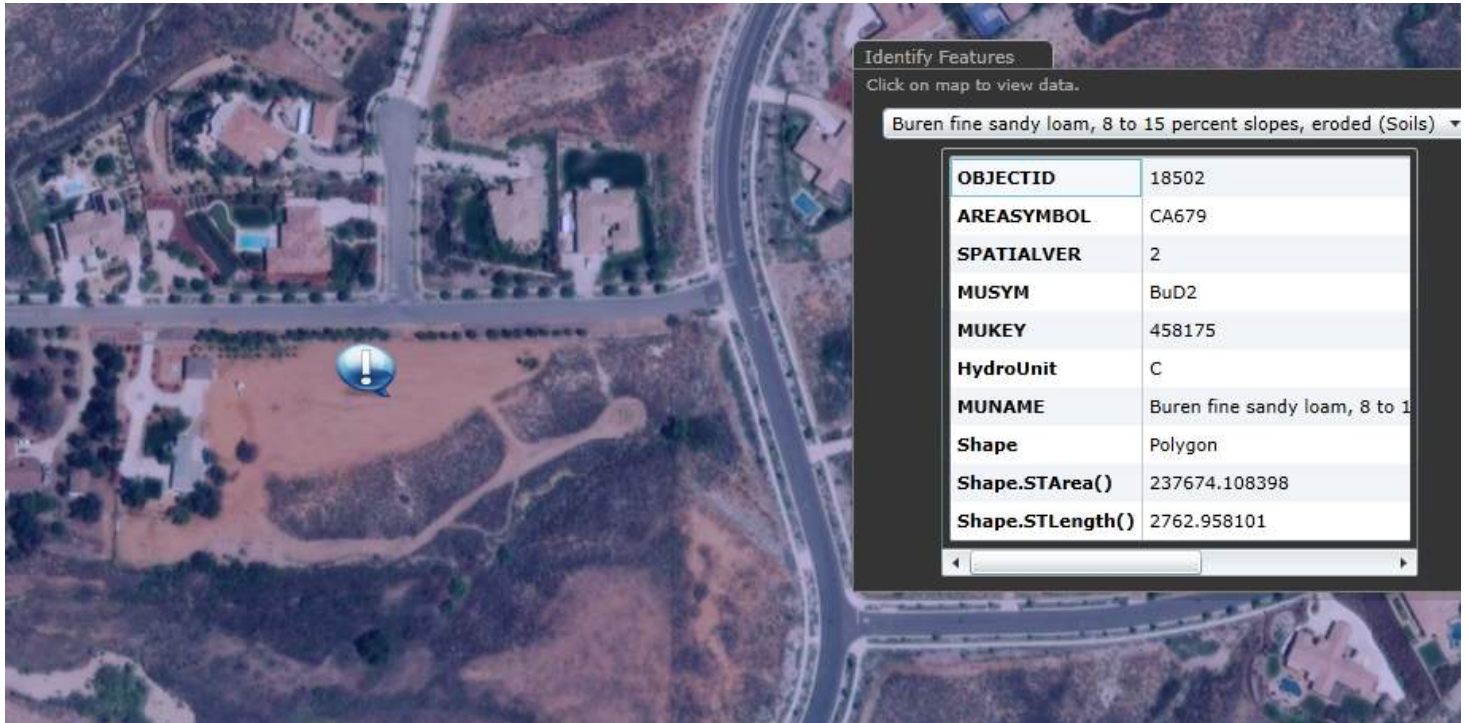
PRELIMINARY GRADING PLAN
PARCEL MAP NO. 38174

DRIZONTAL SCALE: N/A VERTICAL SCALE: N/A

SHEET 3 OF 4

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data



Appendix 4: Historical Site Conditions

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

N/A

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis

LID IS FEASIBLE AND UTILIZED.

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

N/A

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

DMA AREAS ARE SELF TREATING, DRAINS TO SELF RETAINING,
AND SELF RETAINING WHICH FACILITATE INFILTRATION.

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.

1 IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☐ A. On-site storm drain inlets	☐ Locations of 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.	☐ Maintain and periodically repaint 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 ☐ 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.”
☐ B. Interior floor drains and elevator shaft sump pumps		☐ State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.	☐ Inspect and maintain drains to prevent blockages and overflow.
☐ C. Interior parking garages		☐ State that parking garage floor drains will be plumbed to the sanitary sewer.	☐ Inspect and maintain drains to prevent blockages and overflow.

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	1	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE	4
Potential Sources of Runoff Pollutants	2	3	4
D1. Need for future indoor & structural pest control	Permanent Controls—Show on WQMP Drawings	Permanent Controls—List in WQMP Table and Narrative	Operational BMPs—Include in WQMP Table and Narrative
☐ ☒	☐ Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained. ☐ Show self-retaining landscape areas, if any. ☐ Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)	☐ Note building design features that discourage entry of pests. ☐ State that final landscape plans will accomplish all of the following. ☐ 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.	☐ Provide Integrated Pest Management information to owners, lessees, and operators. ☐ 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/Error! Hyperlink reference not valid. ☐ Provide IPM information to new owners, lessees and operators.

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	
☐ E. Pools, spas, ponds, decorative fountains, and other water features.	☐ 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.)	☐ 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.	☐ See applicable operational BMPs in “Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain” at http://rcflood.org/stormwater/	
☐ F. Food service	☐ 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. ☐ On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.	☐ Describe the location and features of the designated cleaning area. ☐ Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.	☐ See the brochure, “The Food Service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries” at http://rcflood.org/stormwater/ Provide this brochure to new site owners, lessees, and operators.	
☒ G. Refuse areas	☐ 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. ☐ 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. ☐ Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.	☐ 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.	☐ 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	

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

1 IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☐ H. Industrial processes.	☐ Show process area.	☐ 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.”	☐ 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

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	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
	☐ 1. Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)	☐ 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. ☐ 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. ☐ 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.	Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains. Where appropriate, reference documentation of compliance with the requirements of Hazardous Materials Programs for: ▪ 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 www.cchealth.org/groups/hazmat/	☐ 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

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings		
3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative		
☐ J. Vehicle and Equipment Cleaning	☐ 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.	☐ 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.	Describe operational measures to implement the following (if applicable): ☐ 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/ ☐ Car dealerships and similar may rinse cars with water only.

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings		
3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative		
☐ K. Vehicle/Equipment Repair and Maintenance	☐ 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. ☐ 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. ☐ 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.	☐ State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area. ☐ 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. ☐ 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.	In the Stormwater Control Plan, note that all of the following restrictions apply to use the site: ☐ 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. ☐ 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. ☐ 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. 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/ 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/

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☐ L. Fuel Dispensing Areas	☐ Fueling areas ⁶ shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable. ☐ Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area ¹ .] The canopy [or cover] shall not drain onto the fueling area.		☐ 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

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

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☐ M. Loading Docks	☐ 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. ☐ 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. ☐ Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.		☐ 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

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
☐ N. Fire Sprinkler Test Water ☐ O. Miscellaneous Drain or Wash Water or Other Sources ☐ Boiler drain lines ☐ Condensate drain lines ☐ Rooftop equipment ☐ Drainage sumps ☐ Roofing, gutters, and trim. ☐ Other sources		☐ Provide a means to drain fire sprinkler test water to the sanitary sewer. ☐ Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system. ☐ 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. ☐ Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water. ☐ Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff. Include controls for other sources as specified by local reviewer.	☐ See the note in Fact Sheet SC-41, “Building and Grounds Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...		... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1	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	
☒ 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.	

Appendix 9: O&M

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

WQMP

Operation & Maintenance (O&M) Plan

Project Title: FOUR LOT SUBDIVISION – 841 ALPINE MEADOWS LANE – PLANNING CASE PR-2021-001078, PM 38174

Development No: PM 38174

Design Review/Case No: PLANNING CASE PR-2021-001078

Prepared for:

Robert Quintero
Land Build
1299 Columbia Ave. Ste. E7
Riverside, CA 9250

Prepared on:

3-1-2022

This O&M Plan describes the designated responsible party for implementation of this WQMP, including: operation and maintenance of all the structural BMP(s), conducting the training/educational program and duties, and any other necessary activities. The O&M Plan includes detailed inspection and maintenance requirements for all structural BMPs, including copies of any maintenance contract agreements, manufacturer's maintenance requirements, permits, etc.

8.1.1 Project Information

Project Title: FOUR LOT SUBDIVISION – 841 ALPINE MEADOWS LANE – PLANNING CASE PR-2021-001078, PM 38174

Development No: PM 38174

Design Review/Case No: PLANNING CASE PR-2021-001078

8.1.2 Responsible Party

The responsible party for implementation of this WQMP is:

Robert Quintero
Land Build
1299 Columbia Ave. Ste. E7
Riverside, CA 9250

8.1.3 Record Keeping

Parties responsible for the O&M plan shall retain records for at least 5 years.

All training and educational activities and BMP operation and maintenance shall be documented to verify compliance with this O&M Plan. A sample Training Log and Inspection and Maintenance Log are included in Appendix C of this document.

The **WQMP Verification Form** (Appendix D) shall be completed accurately and submitted, with associated documentation, to the City of Dana Point by September 30 of each year, or as requested by the City. **Failure to complete and submit the verification form will result in a noncompliance and enforcement actions may be taken.**

8.1.4 Electronic Data Submittal

This document along with the Site Plan and Attachments shall be provided in PDF format. GIS coordinates of BMPs shall also be submitted to the City.

8.1.5 Vector Control

Standing water which exists for longer than 72 hours may contribute to mosquito breeding areas. Best Management Practices (BMPs) shall be inspected for standing water on a regular basis. Standing water may indicate that the BMP is not functioning properly and proper action to remedy the situation shall be taken in a timely manner.

Elimination of standing water and managing garbage, lawn clippings, and pet droppings, can help decrease the presence of mosquitoes and flies in the area.

The Riverside County Flood Control District may be contacted for more information and support at 951-955-1200

Required Permits

A grading permit is required from the City of Riverside.

8.1.6 Inspections

The City may conduct a site inspection to evaluate compliance with the Project WQMP, at any time, in accordance with Dana Point Municipal Code Chapter 15.10, Storm Water/Surface Runoff Water Quality.

8.1.7 Monitoring Plan

No monitoring is required.

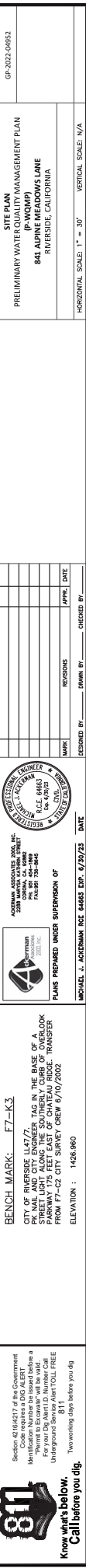
8.1.8 Operation and Maintenance Requirements

BMP	Implementation, Inspection and Maintenance Requirements	Frequency
N1. Education for Property Owners, Tenants and Occupants	RP shall distribute appropriate materials to owners, tenants and/or occupants via contract language, mailings, website or meeting. Brochures can be requested or downloaded from www.ocwatersheds.com . Brochures and educational articles for RP distribution can also be requested from City Water Quality Engineer.	Information to be initially provided to owners & tenants upon sale or lease agreement. Educational materials will be provided to owners and/or tenants annually, thereafter.
N2. Activity Restriction	Within the lease agreement, the following activity restrictions shall be enforced:	Continuous
N3. Common Area Landscape Management & Efficient Landscape Design	Landscape Management Includes: • Mitigation of the potential dangers of fertilizer and pesticide usage through the incorporation of an Integrated Pest Management Program (IPM). • Monitor for runoff and efficiency regularly. • Implementation of a water budget. • Irrigation systems shall be automatically controlled and designed, installed, and maintained so as to minimize overspray and runoff onto streets, sidewalks, driveways, structures, windows, walls, and fences. • Use of native and drought tolerant species when replanting	Inspected once a week

BMP	Implementation, Inspection and Maintenance Requirements	Frequency
N11. Common Area Litter Control	Weekly sweeping and trash pick up as necessary within all project areas and common landscape areas. Daily inspection of trash receptacles to ensure that lids are closed and pick up any excess trash on the ground, noting trash disposal violations by homeowners and reporting the violations to the HOA/RP for investigation.	Daily inspection and weekly sweeping and clean-up or as needed
N12. Contractor/Employee Training	All contractors shall be trained and made aware of this WQMP and operation and maintenance requirements of BMPs.	At first hire and annually thereafter for HOA personnel and employees, to include the educational materials contained in the approved Water Quality Management Plan.
N13. Housekeeping of Loading Docks		
N14. Common Area Catch Basin Inspection	Catch basins will be owned, inspected and maintained by the RP. Catch basins will be inspected at a minimum on a yearly basis, and prior to the storm season, no later than October 1 st of each year.	At a minimum, basins will be inspected and cleaned around October 1 st of each year, prior to "first flush" storm, or as necessary after large storm events to clear inlets of trash, debris and silt.
N15. Street Sweeping Private Streets and Parking Lots	Vacuum street sweeping will occur on a weekly basis.	Streets will be vacuum swept on a weekly basis.
SD-13 Provide Storm Drain System Stenciling and Signage	All catch basins where applicable in paved areas, will be marked or stenciled with "No Dumping - Drains to Ocean, No Descargue Basura" language. This will be done in a location that can be clearly seen by all and will be routinely inspected and re-labeled, as necessary. Thereafter, the owner/operator shall routinely inspect and re-label the catch basins, as necessary.	Catch basin labels will be inspected once annually and relabeled as necessary to maintain legibility.
SD-34 Design and Construct Outdoor Material Storage Areas to Reduce Pollutant Introduction		
Sd-32 Design and Construct Trash and Waste Storage Areas to Reduce Pollutant Introduction	Trash will be removed by the local private solid waste management contractor on a weekly basis for proper disposal of the trash to landfill; with recyclable materials and greenwastes to be processed offsite.	Trash dumpster shall be kept in a non-leaking condition.
SD-31 Loading Docks		

BMP	Implementation, Inspection and Maintenance Requirements	Frequency
BMP-1 AND BMP-2 INFILTRATION	Per recommendations of CASQA BMP Handbook (www.caBMPHandbooks.com) or manufacture's recommendations. Maintenance guidelines/fact sheets are included in this WQMP.	As recommended.

Appendix A
BMP SITE PLAN



Appendix B

EDUCATIONAL MATERIALS

The following is a selection of Educational Materials for Homeowners, Contractors and employees that address BMPS and water quality issues. Many are available in English and Spanish.

To meet the educational requirements of this O&M Plan, educational brochures can be downloaded or requested at no charge for inclusion on a website, in a newsletter or mailed to property owners, tenants and/or contractors. Property owners, tenants, staff and/or contractors must receive education/training at least once per year.

Brochure	Pollutant(s) Addressed	Activities Addressed
"The Ocean Begins At Your Front Door" - English, Spanish, Vietnamese	Household hazardous waste, trash, motor oil, chlorine, overwatering, green waste, dirt, pesticides/fertilizer, pet waste	Household maintenance and activities (i.e. hosing driveway), automotive maintenance and washing, pool maintenance, landscape and gardening, trash disposal, pet care
Homeowners Guide for Sustainable Water Use Pamphlet	Household hazardous waste, trash, motor oil, chlorine, overwatering, green waste, dirt, pesticides/fertilizer, pet waste	Preventing urban runoff through low impact development in residential properties, water conservation, use of IPM techniques and California-friendly landscaping, general water pollution prevention methods
"Help Prevent Ocean Pollution: Your Local Used Oil Collection Center" - South- English, Spanish, Vietnamese	Motor Oil	Automotive Maintenance, Disposal of Used Motor Oil
"Help Prevent Ocean Pollution: Tips for Pool Maintenance" - English, Spanish	Chlorine, runoff	Pool Drainage/Maintenance
"Help Prevent Ocean Pollution: Tips for Landscape and Gardening" - English, Spanish	Fertilizer, pesticide, dirt, overwatering, green waste	Landscape maintenance, pesticide/fertilizer application, proper disposal of household hazardous waste and green waste
"Help Prevent Ocean Pollution: Tips for Pet Care" - English, Spanish	Surfactants, chemicals, pet waste	Proper disposal of pet waste, proper pet bathing techniques
"Help Prevent Ocean Pollution: Household Tips" - English, Spanish	Household hazardous waste, pet waste, pesticides/fertilizers, overwatering, green waste, surfactants, motor oil, trash	Household maintenance and activities (i.e. hosing driveway), automotive maintenance and washing, pool maintenance, landscape and gardening, trash disposal, pet care
"Help Prevent Ocean Pollution: Proper Disposal of Household Hazardous Materials" - English, Spanish, Vietnamese	Household hazardous wastes	Proper identification and disposal of household hazardous wastes

Brochure	Pollutant(s) Addressed	Activities Addressed
"Help Prevent Ocean Pollution: Maintenance Practices for Your Business" - English, Spanish	Fertilizer, pesticides, green waste, overwatering, trash, toxic substances	Landscape maintenance, proper application of pesticides and fertilizers, trash management, proper storage of materials
"Help Prevent Ocean Pollution: Tips for Using Concrete and Mortar" - English, Spanish	Concrete and mortar, slurry	Proper preparation, use, clean up and disposal of concrete and mortar
"Responsible Pest Control"	Pesticides	Proper identification of pests, selection of least toxic chemical, proper pesticide application, spill prevention and proper storage and disposal of pesticides (use of Integrated Pest Management (IPM) techniques)
"Help Prevent Ocean Pollution: Residential Pool, Landscape and Hardscape Drains" - English, Spanish	Chlorine, chemicals, pet waste, green waste, overwatering, motor oil and vehicle fluids	Pool maintenance, spill prevention, proper disposal of household hazardous waste, proper disposal of pet waste, proper use of pesticides and fertilizers, proper vehicle maintenance
"Help Prevent Ocean Pollution: Proper Use and Disposal of Paint" - English, Spanish	Paint, chemicals	Proper use, storage and disposal of paint
"Help Prevent Ocean Pollution: Tips for Home Improvement Projects" - English, Spanish	Construction debris, concrete, paint, household hazardous waste, sediment	Proper storage of construction materials, recycling of construction materials, proper disposal of household hazardous waste, proper erosion and spill control
"Help Prevent Ocean Pollution: Children's Coloring & Activity Book"	Trash, pet waste, motor oil, green waste	Litter control, proper disposal of pet waste, proper spill clean up (e.g. use of cat litter)
"Help Prevent Ocean Pollution: Tips for the Automotive Industry" - English, Spanish	Motor oil, metals, surfactants, toxic substances, dirt	Proper maintenance and washing practices for automobiles, proper storage and disposal of automotive liquids and materials
"Help Prevent Ocean Pollution: Tips for the Home Mechanic"	Motor oil, metals, surfactants, toxic substances	Proper maintenance and washing practices for automobiles and automotive detailing materials, proper storage and disposal of automotive liquids and materials, use of used oil collection centers
"Compliance Best Management Practices for Mobile Businesses"	Surfactants, toxic substances, dirt, metals	Mobile car washing and detailing, proper high pressure cleaning, proper storage and disposal of washwater from mobile automotive detailing, washing and carpet and fabric cleaning

Brochure	Pollutant(s) Addressed	Activities Addressed
"Help Prevent Ocean Pollution: A Guide for Food Service Facilities" - English, Spanish, Vietnamese	Grease, food waste, trash	Proper food waste disposal, proper grease and oil disposal, proper procedures for spill cleanup, proper maintenance of trash dumpsters, proper floor mat cleaning, proper wastewater disposal

Regulatory Information

1. City of Riverside Municipal Code Chapter 14.12 Storm Water/Surface Runoff Water Quality
2. City of Riverside Municipal Code Chapter 6.14 Landscaping Standards and Requirements

Both of the above Code Chapters are available on the City's website at:
https://library.municode.com/ca/riverside/codes/code_of_ordinances

Appendix C

BMP OPERATION & MAINTENANCE AND TRAINING LOGS

**BMP OPERATION & MAINTENANCE LOG
TACO STATION**

Today's Date: _____

**Name of Person Performing Activity
(Printed):** _____

Signature: _____

BMP Name (As Shown in O&M Plan)	Brief Description of Implementation, Maintenance, and Inspection Activity Performed

TRAINING / EDUCATIONAL LOG

Date of Training/Educational Activity: _____

Name of Person Performing Activity
(Printed): _____

Signature: _____

Topic of Training/Educational Activity: _____

Name of Participant	Signature of Participant

For newsletter or mailer educational activities, please include the following information:

- Date of mailing
- Number distributed
- Method of distribution
- Topics addressed

If a newsletter article was distributed, please include a copy of it.

APPENDIX D

CITY OF RIVERSIDE
WATER QUALITY MANAGEMENT PLAN (WQMP) VERIFICATION SURVEY

Project Name/Site Address: TACO STATION, 4088 MISSION INN AVENUE

Responsible Party : MARIO CORTEZ

Contact Phone: 951-544-1295 Contact Email: CORTEZMARIO@MSN.COM

1. Have your contractors (landscape, maintenance, etc.) been educated regarding the applicable requirements to prevent pollution as outlined in the WQMP?

☐ Yes ☐ No Name of Landscape/Maintenance Contractor:

Method of education (contract language, Copy of O&M, educational brochures, etc.):

2. Have the storm drains and inlets been inspected and maintained, at a minimum, annually prior to Oct 1?

☐ Yes ☐ No Date of Last Inspection/Maintenance:

Maintenance conducted by:

3. Have you observed any runoff from the irrigation system?

☐ Yes ☐ No If yes, how was the problem resolved?:

4. What type of Integrated Pest Management (IPM) practices are used on site?

5. Are native and/or drought tolerant plants established and considered for any new landscaping?

☐ Yes ☐ No

6. Have the storm drain stencils been inspected annually for legibility prior to Oct. 1?

☐ Yes ☐ No Total number of stencils on site: _____

How many inlets required restenciling / date of restenciling? _____ / _____

7. **Have education materials been distributed to the residents/tenants/contractors within the past year?**

☐ Yes ☐ No Topic / Date of Distribution: _____ / _____

Method of Distribution: newsletter, billing insert, etc.: _____

8. **Is street sweeping conducted weekly?**

☐ Yes ☐ No Contractor: _____

9. **Are trash areas in common area inspected daily?**

☐ Yes ☐ No

10. **Have any vector concerns been observed (standing water, mosquito larvae, etc.). if yes, please contact Orange County Vector Control District at www.ocvcd.org.**

☐ Yes ☐ No

11. **Have the treatment BMPs been inspected and maintained per Manufacturer instructions? (attach invoices and inspection/maintenance forms).**

☐ Yes ☐ No

12. **Have there been any issues with operation and maintenance of the treatment BMPs units?**

I certify that the above information is correct and that the BMPs for this project have been implemented and operated and maintained in accordance with the Operation and Maintenance (O&M) Plan on site and on file at the City.

Print Name of Responsible Party

Signature (required)

Date

Maintenance Responsibility

Maintenance Responsibilities: Infiltration Trenches and Grass Swale/Depressed Landscape maintenance of common areas and landscape areas within the project.

General Operation and Maintenance Activities

Operation and maintenance (O&M) activities are described below. The categories of O&M activities are "routine" and "major" where routine refer to activity conducted on a regular schedule, whereas major refers to infrequent activities triggered mainly by need. Each category and its respective activities are described in the following sections.

Routine Operation and Maintenance Activities

Site Inspection

The storm drain inlets will be inspected on a regular, scheduled basis to ensure that the facility is operating properly, to record observations, and to initiate any actions that may be required. While the frequency of site inspections may vary depending on the season, it will typically be on a monthly basis.

Trash & Debris Removal

Litter may be picked up at any time during site visits for other purposes. Regular, scheduled trash/debris removal will be performed at all sites on a quarterly basis and/or after storm events that result in heavy trash accumulations.

Minor Vegetation Removal/Thinning

Vegetation growth will be inspected annually, and removed or thinned as necessary. Vegetation at inlets and outlets will be manually or mechanically removed if vegetation is found to be clogging or otherwise affecting the operation of the facility. Access roads will remain clear of vegetation and obstructions. Significant vegetation removal is covered under the major maintenance activities section below.

Snag Removal

This work typically includes the removal of sticks, dead branches, brush, and small trees that block water flow or otherwise interfere with the operations. This work may be performed as needed on a quarterly basis.

Minor Sediment Removal

It is expected that there will be a minor amount of sediment deposition at points within the storm drain inlet, primarily in forebay(s) near the inlet(s). When such deposits obstruct water flow, the deposits will be removed.

Major Operation and Maintenance Activities

Operation and maintenance (O&M) requirements for all Source Control and Treatment Control BMPs shall be identified within this report. The O&M shall include the following:

- Description and Schedule
- Inspection & Monitoring requirements
- Identification of Responsible Parties

The owner of the property, and its successors and assigns is responsible for implementation of this WQMP or BMPs for the project site.

O&M MAINTENANCE/FREQUENCY MATRIX		
BEST MANAGEMENT PRACTICES (BMPs)	INSPECTION FREQUENCY	MAINTENANCE REPAIR PROGRAM
Source Control BMPs		
1. Education For Property owner, tenants and occupants, Maintenance staffs, contracted maintenance crews.	Training and education program must be provided within 6 months of hire date and annually thereafter. Materials are included in the Project WQMP.	Educational materials and training will be provided to Property owner, tenants and occupants, Maintenance staff members, and contracted maintenance crews if any, including education materials and restrictions to reduce pollutants from reaching the storm drain system.
2. Activity Restriction	Daily activity of Operation	The project will establish the following policies prohibiting activities during operations: - Prohibit discharge of fertilizer, pesticide, or animal waste to street or storm drain. - Prohibit blowing or sweeping of debris (leaf litter, grass clippings, litter, etc.) into street or storm drain. - Require dumpster lid to be closed at all times. - Prohibit discharge of paint or masonry waste to street or storm drain. - Prohibit vehicle washing, maintenance or repair on premises.
3. Common Area Landscape Management	Quarterly, as seasonal changes.	The Owner shall direct maintenance staff to employ landscaping practices be consistent with the City of Corona requirements for use of fertilizer, pesticides, and County ordinances for water conservation.

4. Drainage Facility Inspection and Maintenance	Inspect semiannually for beginning (October) and end of the wet season (April).	Maintenance personnel shall remove debris/sediments if necessary within the inlet area. .
5. MS4 Stenciling and Signage	As needed to clearly depict signage.	Replace or repaint as needed.
6. Protect Slopes and Channels	Inspect semiannually and before and after storm events.	Repair BMP and slopes as needed.
Treatment Control BMPs		
7. Infiltration Trenches and Grass Swale/Depressed Landscape.	Inspect semiannually for beginning (October) and end of the wet season (April).	Maintenance personnel shall repair trench surface as needed and remove debris/sediments if necessary.

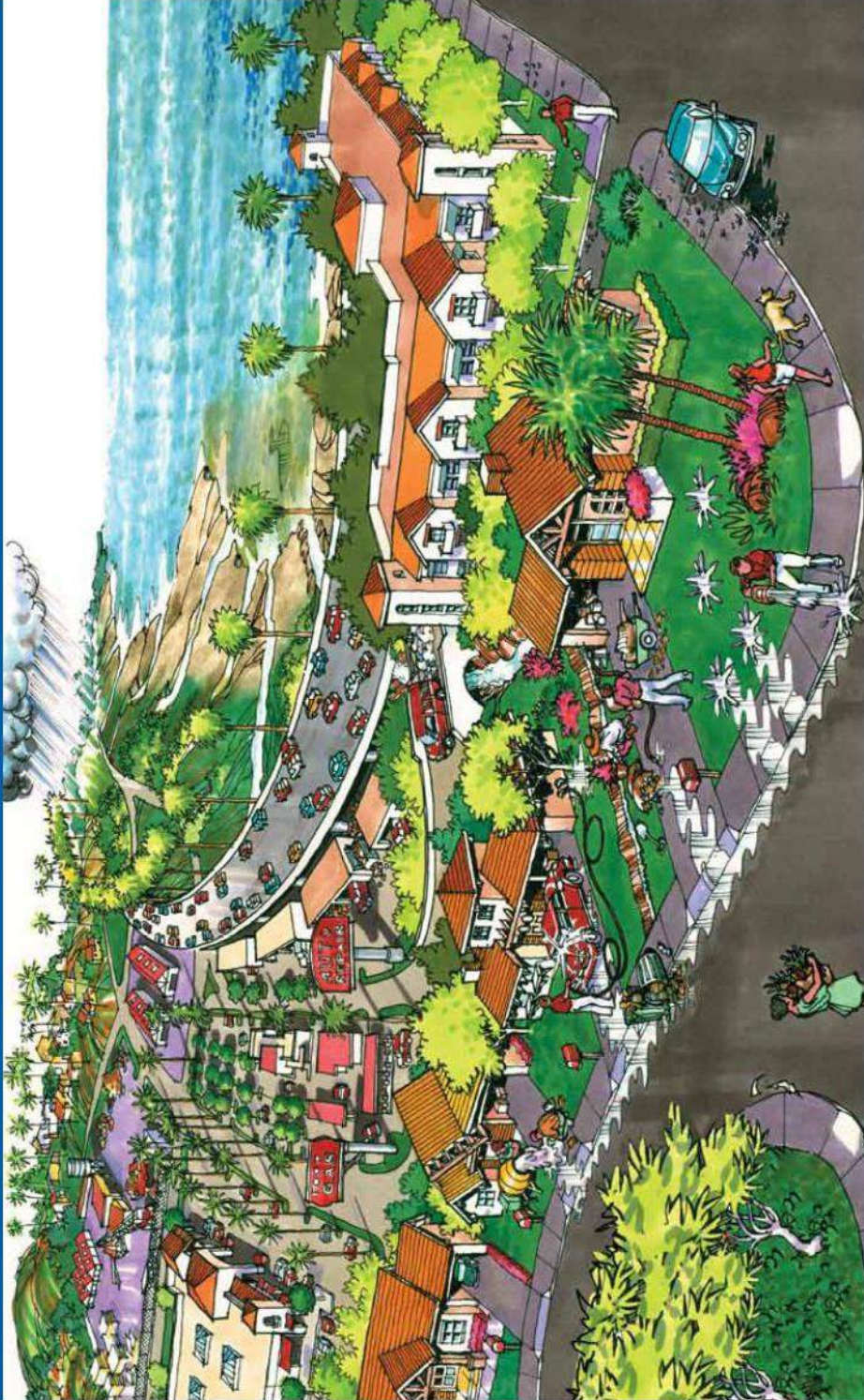
Inspection and Maintenance

Schedule	Inspection and Maintenance Activity
Every two weeks, or as often as necessary to maintain a pleasant appearance	- Maintain adjacent landscaped areas. Remove clippings from landscape maintenance activities. - Remove trash & debris
3 days after Major Storm Events	- Check for surface ponding. If ponding is only above the trench, remove, wash and replace pea gravel. May be needed every 5-10 years. - Check observation well for ponding. If the trench becomes plugged, remove rock materials. Provide a fresh infiltration surface by excavating an additional 2-4 inches of soil. Replace the rock materials.

Appendix 10: Educational Materials

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

The Ocean Begins at Your Front Door



Never allow pollutants to enter the street, gutter or storm drain!

Follow these simple steps to help reduce water pollution:

Household Activities

- Do not rinse spills with water. Use dry cleanup methods such as applying cat litter or another absorbent material, sweep and dispose of in the trash. Take items such as used or excess batteries, oven cleaners, automotive fluids, painting products and cathode ray tubes, like TVs and computer monitors, to a Household Hazardous Waste Collection Center (HHWCC).
- For a HHWCC near you call (714) 834-6752 or visit www.oilandfills.com.
- Do not hose down your driveway, sidewalk or patio to the street, gutter or storm drain. Sweep up debris and dispose of it in the trash.

Automotive

- Take your vehicle to a commercial car wash whenever possible. If you wash your vehicle at home, choose soaps, cleaners, or detergents labeled non-toxic, phosphate-free or biodegradable. Vegetable and citrus-based products are typically safest for the environment.
- Do not allow washwater from vehicle washing to drain into the street, gutter or storm drain. Excess washwater should be disposed of in the sanitary sewer (through a sink or toilet) or onto an absorbent surface like your lawn.
- Monitor your vehicles for leaks and place a pan under leaks. Keep your vehicles well maintained to stop and prevent leaks.
- Never pour oil or antifreeze in the street, gutter or storm drain. Recycle these substances at a service station, a waste oil collection center or used oil recycling center. For the nearest Used Oil Collection Center call 1-800-CLEANUP or visit www.1800cleanup.org.

Pool Maintenance

- Pool and spa water must be dechlorinated and free of excess acid, alkali or color to be allowed in the street, gutter or storm drain.
- When it is not raining, drain dechlorinated pool and spa water directly into the sanitary sewer.
- Some cities may have ordinances that do not allow pool water to be disposed of in the storm drain. Check with your city.

Landscape and Gardening

- Do not over-water. Water your lawn and garden by hand to control the amount of water you use or set irrigation systems to reflect seasonal water needs. If water flows off your yard onto your driveway or sidewalk, your system is over-watering. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of waste by composting, hauling it to a permitted landfill, or as green waste through your city's recycling program.
- Follow directions on pesticides and fertilizer, (measure, do not estimate amounts) and do not use if rain is predicted within 48 hours.
- Take unwanted pesticides to a HHWCC to be recycled. For locations and hours of HHWCC, call (714) 834-6752 or visit www.oilandfills.com.

Trash

- Place trash and litter that cannot be recycled in securely covered trash cans.
- Whenever possible, buy recycled products.
- Remember: Reduce, Reuse, Recycle.

Pet Care

- Always pick up after your pet. Flush waste down the toilet or dispose of it in the trash. Pet waste, if left outdoors, can wash into the street, gutter or storm drain.
- If possible, bathe your pets indoors. If you must bathe your pet outside, wash it on your lawn or another absorbent/permeable surface to keep the washwater from entering the street, gutter or storm drain.
- Follow directions for use of pet care products and dispose of any unused products at a HHWCC.

Common Pollutants

Home Maintenance

- Detergents, cleaners and solvents
- Oil and latex paint
- Swimming pool chemicals
- Outdoor trash and litter

Lawn and Garden

- Pet and animal waste
- Pesticides
- Clippings, leaves and soil
- Fertilizer

Automobile

- Oil and grease
- Radiator fluids and antifreeze
- Cleaning chemicals
- Brake pad dust

Did You Know?

- Most people believe that the largest source of water pollution in urban areas comes from specific sources such as factories and sewage treatment plants. In fact, the largest source of water pollution comes from city streets, neighborhoods, construction sites and parking lots. This type of pollution is sometimes called "non-point source" pollution.
- There are two types of non-point source pollution: stormwater and urban runoff pollution.
- Stormwater runoff results from rainfall. When rainstorms cause large volumes of water to run the urban landscape, picking up pollutants along the way.
- Urban runoff can happen any time of the year when excessive water use from irrigation, vehicle washing and other sources carries trash, lawn clippings and other urban pollutants into storm drains.

Where Does It Go?

- Anything we use outside homes, vehicles and businesses – like motor oil, paint, pesticides, fertilizers and cleaners – can be blown or washed into storm drains.
- A little water from a garden hose or rain can also send materials into storm drains.
- Storm drains are separate from our sanitary sewer systems; unlike water in sanitary sewers (from sinks or toilets), water in storm drains is not treated before entering our waterways.

Sources of Non-Point Source Pollution

- Automotive leaks and spills.
- Improper disposal of used oil and other engine fluids.
- Metals found in vehicle exhaust, weathered paint, rust, metal plating and tires.
- Pesticides and fertilizers from lawns, gardens and farms.
- Improper disposal of cleaners, paint and paint removers.
- Soil erosion and dust debris from landscape and construction activities.
- Litter, lawn clippings, animal waste, and other organic matter.
- Oil stains on parking lots and paved surfaces.



The Effect on the Ocean



Non-point source pollution can have a serious impact on water quality in Orange County. Pollutants from the storm drain system can harm marine life as well as coastal and wetland habitats. They can also degrade recreation areas such as beaches, harbors and bays.

Stormwater quality management programs have been developed throughout Orange County to educate and encourage the public to protect water quality, monitor runoff in the storm drain system, investigate illegal dumping and maintain storm drains.

Support from Orange County residents and businesses is needed to improve water quality and reduce urban runoff pollution. Proper use and disposal of materials will help stop pollution before it reaches the storm drain and the ocean.





A Citizen's Guide to Understanding Stormwater



EPA
United States
Environmental Protection
Agency
EPA 833-B-03-002
January 2003

Revised Edition (URL: <http://www.epa.gov/833/B-03-002>)
This document is available in English and Spanish.
For more information, contact: www.epa.gov/833/B-03-002

After the Storm

For more information contact:
www.epa.gov/nps/stormwater
or visit
www.epa.gov/nps



What is stormwater runoff?



Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, 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.

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.

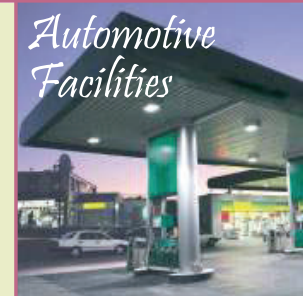
Forestry

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.