Appendix F

Water Quality Management Plan

WQ XX-XXXX

County of Orange/Santa Ana Region Priority Project Water Quality Management Plan (WQMP)

Project Name:

FV Center, LP

8550 WARNER AVENUE FOUNTAIN VALLEY, CA 92708

Prepared for:

FV Center, LP

15261 Transitor Lane

Huntington Beach, CA 92649

(714) 898-7557

Prepared by:

Jones, Cahl, and Associates

18090 Beach Boulevard, Suite #12

Huntington Beach, CA 92648

(714) 848-0566

jca@jonescahl.com

Date Prepared: January 8, 2025

Project Owner's Certification			
Planning Application No.	General Plan Ammendemnt No. 23-01 Zoning Map Ammendment No. 436 C.U.P. No. 1929 Precise Plan No. 577	Grading Permit No.	N/A
Tract/Parcel Map and Lot(s) No.	Parcel 1, P.M.B. 131, Pgs. 46-47	Building Permit No.	N/A
Address of Project Site and APN (If no address, specify Tract/Parcel Map and Lot Numbers)			8550 Warner Avenue APN 167-361-17

This Water Quality Management Plan (WQMP) has been prepared for Robert Stellrecht of FV Center, LP by Jones, Cahl & Associates, Inc.. The WQMP is intended to comply with the requirements of the County of Orange NPDES Stormwater Program requiring the preparation of the plan.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan , including the ongoing operation and maintenance of all best management practices (BMPs), and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the current Orange County Drainage Area Management Plan (DAMP) and the intent of the non-point source NPDES Permit for Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the incorporated Cities of Orange County within the Santa Ana Region. Once the undersigned transfers its interest in the property, its successors-in-interest shall bear the aforementioned responsibility to implement and amend the WQMP. An appropriate number of approved and signed copies of this document shall be available on the subject site in perpetuity.

Owner: Robert Stellrecht			
Title	Owner		
Company	FV Center, LP		
Address	15261 Transitor Lane		
Email	bob@stellrechtcompany.com		
Telephone #	(714) 898-7557		
I understand my responsibility to implement the provisions of this WQMP including the ongoing operation and maintenance of the best management practices (BMPs) described herein.			
Owner Signature		Date	

Preparer (Engineer):			
Title	President	PE Registration #	60934
Company	Jones, Cahl, and Associates		
Address	18090 Beach Blvd. Suite #12, Huntington Beach, CA 92648		
Email	jca@jonescahl.com		
Telephone #	(714) 848-0566		

I hereby certify that this Water Quality Management Plan is in compliance with, and meets the requirements set forth in, Order No. R8-2009-0030/NPDES No. CAS618030, of the Santa Ana Regional Water Quality Control Board.

Preparer Signature	Daniel Rubio	Date	10/18/2024
Place Stamp Here	REGISTERED PROFESSIONAL ENGINEER DANIEL RUBIO NO. 60934 CIVIL STATE OF CALIFORNIA		

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Section I Permit(s) and Water Quality Conditions of Approval or Issuance

Provide discretionary or grading/building permit information and water quality conditions of approval, or permit issuance, applied to the project. If conditions are unknown, please request applicable conditions from staff. *Refer to Section 2.1 in the Technical Guidance Document (TGD) available at https://ocerws.ocpublicworks.com.*

Project Infomation			
Permit/Application No. (If applicable)	General Plan Ammendemnt No. 23-01 Zoning Map Ammendment No. 436 C.U.P. No. 1929 Precise Plan No. 577	Grading or Building Permit No. (If applicable)	N/A
Address of Project Site (or Tract Map and Lot Number if no address) and APN	8550 Warner Avenue Fountain Valley, CA 92649 APN 167-361-17		
Water Quality Conditions of Approval or Issuance			
Water Quality Conditions of Approval or Issuance applied to this project. (Please list verbatim.)	Developer shall prepare for City a preliminary Water Quality Management Plan for new development and significant redevelopment projects that meet one or more of the following criteria: a. All significant redevelopment projects, where significant redevelopment is defined as projects that include the addition or replacement of 5,000 square feet or more of impervious surface on a developed site. Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of the facility, or emergency redevelopment activity required to protect public health and safety. Where redevelopment results in the addition or replacement of less than fifty percent of the impervious surfaces of a previously existing and not to the entire developed site. Where redevelopment results in the addition or replacement of more than fifty percent of the impervious surfaces of a previously existing developed site, the numeric sizing criteria applies to the entire development.		

b. New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single family home subdivisions, multi-family attached subdivisions (town homes), condominiums, apartments, etc.), mixed-use, and public projects. This category includes development projects on public or private land, which fall under the planning and building authority of the permittees.
c. Automotive repair shops (with SIC codes 5013, 5014, 5541, 7532 7534, 7536-7539).
d. Restaurants where the land area of development is 5,000 square feet or more.
e. All hillside developments on 5,000 square feet or more, which are located on areas with known erosive soil conditions or where the natural slope is twenty-five percent or more.
f. Developments of 2,500 square feet of impervious surface or more, adjacent to (within 200 feet) or discharging directly into environmentally sensitive areas, such as areas designated in the Ocean Plan as Areas of Special Biological Significance or waterbodies listed on the CWA Section 303(d) list of impaired waters.
g. Parking lots of 5,000 square feet or more of impervious surface exposed to storm water. Parking lot is defined as a land area or facility for the temporary storage of motor vehicles.
h. Streets, roads, highways and freeways of 5,000 square feet or more of paved surface shall incorporate USEPA guidance, "Managing Wet Weather with Green Infrastructure: Green Streets" in a manner consistent with the maximum extent practicable standard. This category includes any paved surface used for the transportation of automobiles, trucks, motorcycles and other vehicles and excludes any routine road maintenance activities where the footprint is not changed.
i. Retail gasoline outlets of 5,000 or more square feet with a projected average daily traffic of 100 or more vehicles per day.
j. Emergency and public safety projects in any of the above-listed categories may be excluded if the delay caused due the requirement for a WQMP compromises public safety, public health and/or environmental protection.

An approved WQMP is required prior to the City issuing a grading or building permit. Each successor of the business or property is responsible for compliance with the WQMP.

Comply with the applicable provision of City ordinances concerning payment of fees developed site, and the existing development was not

	subject to WQMP requirements, the numeric sizing criteria discussed below applies only to the addition or replacement,
Conceptual WQMP	
Was a Conceptual Water Quality Management Plan previously approved for this project?	N/A
Watershed-Based Plan Conditions	
Provide applicable conditions from watershed - based plans including WIHMPs and TMDLS.	Currently, there is no approved WHIMPs or TMDLS for the Los Alamitos/East Garden grove/Bolsa Chica watershed.

Section II Project Description

II.1 Project Description

Provide a detailed project description including:

- Project areas;
- Land uses;
- Land cover;
- Design elements;
- A general description not broken down by drainage management areas (DMAs).

Include attributes relevant to determining applicable source controls. *Refer to Section 2.2 in the Technical Guidance Document (TGD) for information that must be included in the project description.*

Description of Proposed Project				
Development Category (From Model WQMP, Table 7.11-2; or -3):	Refer to "Table 7.II-.2", Priority Project Categories for North County permit area from Model Water Quality Management Plan. The project is Priority Water Quality Management Plan (WQMP) Category #8. "**Significant redevelopment projects with the addition of 5,000 so of impervious surface on an already development site...**"			
Project Area (ft^2): 92,347	Number of Dwelling Units: 72		SIC Code: 1522 .	
Project Area	Pervious		Impervious	
	Area (acres or sq ft)	Percentage	Area (acres or sq ft)	Percentage
Pre-Project Conditions	10,352	11.2%	81,995	88.8%
Post-Project Conditions	18,924	20.5%	73,423	79.5%
Drainage Patterns/Connections	Existing Drainage flows away from the existing into concrete V-Gutters located North, South, and West of the existing building. The V-Gutters carry the drainage towards the street right-of-way. At the street it drains west to the nearest catch basin. Proposed drainage flows away from the proposed buildings into the concrete V-Gutters. From the concrete V-Gutters the drainage flows into the underground drainage system that eventually leads to the MWS-L-8-16-V. After being cleaned the drainage will exit through the parkway drain to the existing curb and gutter on Warren and flow west to the nearest catch basin.			

Narrative Project Description:

(Use as much space as necessary.)

The project site is 2.12 acres in size and located on the south side of Warner Avenue in between Newland Street and Ross Street. The proposed buildings are located on the North, East, and West sides of the site, and a proposed club house in the center of the site, all are further described below. Parking is located on the East and South perimeter of the site. The entrance onto the site is located on the west side of the property off of Warren Avenue. Proposed drainage is away from the buildings into the concrete gutters around the clubhouse to the underground drainage system that leads to MWS-L-8-16-V biofiltration system and then exits through the parkway drain and directed to the existing concrete curb and gutter on Warner Avenue.

Proposed 72 Unit Apartment complex

The apartment complex consists of three floors with 7 floor plan units

First Floor – 17 units

2 – (C1) Studio apartments with balcony = 1,258 s.f.

7 – (A1) One bedroom apartments with balcony = 6,076 s.f.

4 – (B1) Two bedroom apartments with balcony = 4,972 s.f.

2– (B2) Two bedroom apartments with balcony = 2,520 s.f.

2– (B3) Two bedroom apartments with balcony = 2,522 s.f.

Total = 17,348 s.f.

Second Floor –29 units

2 – (C1) Studio apartments with balcony = 1,258 s.f.

7 – (A1) One bedroom apartments with balcony = 6,076 s.f.

9 – (A2) One bedroom apartments with balcony = 7,794 s.f.

3 – (B1) Two bedroom apartments with balcony = 3,729 s.f.

2– (B2) Two bedroom apartments with balcony = 2,520 s.f.

2– (B3) Two bedroom apartments with balcony = 2,522 s.f.

4– (B3) Two bedroom apartments with balcony = 4,460 s.f.

Total = 21,440 s.f.

Third Floor –26 units

2 – (C1) Studio apartments with balcony = 1,258 s.f.

7 – (A1) One bedroom apartments with balcony = 6,076 s.f.

7 – (A2) One bedroom apartments with balcony = 6,076 s.f.

3 – (B1) Two bedroom apartments with balcony = 3,729 s.f.

2– (B2) Two bedroom apartments with balcony = 2,520 s.f.

1– (B3) Two bedroom apartments with balcony = 1,261 s.f.

4– (B3) Two bedroom apartments with balcony = 4,460 s.f.

Total = 20,177 s.f.

Total entire 72 Units = 71,073 s.f.

Amenity Club House = 820 s.f.

Two Trash enclosures are located on the project

The westerly Trash Enclosure = 212.3 s.f.

The easterly Trash Enclosure = 317.7 s.f.

Total Trash Enclosures S.F. = 530 s.f.

Total Stairs S.F. = 6,840 s.f.

Private Parking Garages = 8,411 s.f.

Carports and Open Parking = 12,089 s.f.

Concrete Hardscape = 8,157 s.f.

Landscaping = 18,294 s.f.

Asphalt pavement drive aisles = 19,228 s.f.

Total all first-floor buildings, private garages, trash enclosures, stairs occupied 33,949 s.f. (0.78 Acres) and remaining is concrete walkway, landscaping, asphalt parking and drive aisles.

Lot size is 92,347 s.f. = (2.12 Acres). Lot coverage 36.8%.

II.2 Potential Stormwater Pollutants

Determine and list expected stormwater pollutants based on land uses and site activities. *Refer to Section 2.2.2 and Table 2.1 in the Technical Guidance Document (TGD) for guidance.*

Pollutants of Concern			
Pollutant	Check One for each: E=Expected to be of concern N=Not Expected to be of concern		Additional Information and Comments
Suspended-Solid/ Sediment	E ☒	N ☐	Expected from general use
Nutrients	E ☒	N ☐	Expected from general use
Heavy Metals	E ☐	N ☒	Not expected from this site
Pathogens (Bacteria/Virus)	E ☒	N ☐	Expected in landscape areas and general use
Pesticides	E ☒	N ☐	Expected in landscaped areas
Oil and Grease	E ☒	N ☐	Expected from general use of uncovered parking areas
Toxic Organic Compounds	E ☒	N ☐	Expected in landscaped areas
Trash and Debris	E ☒	N ☐	Expected from general use

II.3 Hydrologic Conditions of Concern

Determine if streams located downstream from the project area are potentially susceptible to hydromodification impacts. *Refer to Section 2.2.3.1 in the Technical Guidance Document (TGD) for North Orange County or Section 2.2.3.2 for South Orange County.*

☒ No – Show map

☐ Yes – Describe applicable hydrologic conditions of concern below. *Refer to Section 2.2.3 in the Technical Guidance Document (TGD).*

Based on Susceptibility Analysis Anaheim Bay- Huntington Harbor Map Figure 2: North Orange County Hydromodification Susceptibility Maps in the Technical Guidance Document (TGD) for North Orange County, See Attachment B.

II.4 Post Development Drainage Characteristics

Describe post development drainage characteristics. *Refer to Section 2.2.4 in the Technical Guidance Document (TGD).*

Post drainage from the proposed buildings flows away from the buildings into proposed concrete V-Gutters. The V-Gutters will then flow into an underground drainage system that leads to the biofiltration system MWS-L-8-16-V. The runoff will then exit onto the existing curb and gutter through a parkway drain.

II.5 Property Ownership/Management

Describe property ownership/management. *Refer to Section 2.2.5 in the Technical Guidance Document (TGD).*

Privately Owned By: FV Center, LP

Section III Site Description

III.1 Physical Setting

Fill out table with relevant information. *Refer to Section 2.3.1 in the Technical Guidance Document (TGD).*

Name of Planned Community/Planning Area (if applicable)	N/A
Location/Address	8550 Warner Avenue
	Fountain Valley, CA 92708
General Plan Land Use Designation	Multi-Family Residential
Zoning	R3
Acreage of Project Site	2.12
Predominant Soil Type	C

III.2 Site Characteristics

Fill out table with relevant information and include information regarding BMP sizing, suitability, and feasibility, as applicable. *Refer to Section 2.3.2 in the Technical Guidance Document (TGD).*

Site Characteristics	
Precipitation Zone	0.75, Based on Rainfall Zones Map Figure XVI-1: In the Technical Guidance Document (TGD) for North Orange County, See Attachment C.
Topography	Flat
Drainage Patterns/Connections	Drains away from building into V-gutters that leads to underground drainage that leads to MWS-L-8-16-V filtration system and exits through parkway drain onto Warner.

Soil Type, Geology, and Infiltration Properties	Soils Category C, Soils report in progress to verify findings.
Hydrogeologic (Groundwater) Conditions	Depth to groundwater 5-10', Based on North Orange County Mapped Shallow Groundwater Figure XVI-2e: In the Technical Guidance Document (TGD) for North Orange County, See Attachment D.
Geotechnical Conditions (relevant to infiltration)	Soils Category C, Based on NRCS Hydrologic Soils Group Map Figure XVI-2a: In the Technical Guidance Document (TGD) for North Orange County, See Attachment E.
Off-Site Drainage	No offsite drainage enters the project site
Utility and Infrastructure Information	Proposed 4" domestic water line with backflow, proposed 2" irrigation waterline with backflow, and proposed 8" fire service water line with DDCV with FDC.

III.3 Watershed Description

Fill out table with relevant information and include information regarding BMP sizing, suitability, and feasibility, as applicable. *Refer to Section 2.3.3 in the Technical Guidance Document (TGD).*

Receiving Waters	The site is in the Talbert/Greenville Banning Channel watershed but runoff drains westerly in Warner Avenue into the Los Alamitos/East Garden Grove/Bolsa Chica watershed. Oceanview Channel, East Garden Grove Wintersburg Channel, Bolsa Bay Marsh and Pacific Ocean
303(d) Listed Impairments	East Garden Grove Wintersburg Channel - Ammonia Bolsa Bay Marsh - Toxicity
Applicable TMDLs	East Garden Grove Wintersburg Channel - Ammonia Bolsa Bay March - Toxicity
Pollutants of Concern for the Project	Suspended-Solid/Sediment, Nutrients, Pathogens (Bacteria/Virus), Pesticides, Oil and Grease, Toxic Organic Compounds, Trash and Debris.
Environmentally Sensitive and Special Biological Significant Areas	N/A

Section IV Best Management Practices (BMPs)

IV. 1 Project Performance Criteria

Describe project performance criteria. Several steps must be followed in order to determine what performance criteria will apply to a project. These steps include:

- If the project has an approved WIHMP or equivalent, then any watershed specific criteria must be used and the project can evaluate participation in the approved regional or sub-regional opportunities. (Please ask your assigned planner or plan checker regarding whether your project is part of an approved WIHMP or equivalent.)
- Determine applicable hydromodification control performance criteria. *Refer to Section 7.II-2.4.2.2 of the Model WQMP.*
- Determine applicable LID performance criteria. *Refer to Section 7.II-2.4.3 of the Model WQMP.*
- Determine applicable treatment control BMP performance criteria. *Refer to Section 7.II-*3.2.2 *of the Model WQMP.*
- Calculate the LID design storm capture volume for the project. *Refer to Section 7.II-2.4.3 of the Model WQMP.*

(NOC Permit Area only) Is there an approved WIHMP or equivalent for the project area that includes more stringent LID feasibility criteria or if there are opportunities identified for implementing LID on regional or sub-regional basis?	YES ☐	NO ☒
If yes, describe WIHMP feasibility criteria or regional/sub-regional LID opportunities.	N/A	

Project Performance Criteria	
If HCOC exists, list applicable hydromodification control performance criteria (Section 7.II-2.4.2.2 in MWQMP)	Implement on-site or regional hydromodification controls such that post-development runoff volume for the two-year frequency storm does not exceed that of the predevelopment condition by more than five percent, and time of concentration of post-development runoff for the two-year storm event is not less than that for the predevelopment condition by more than five percent. HCOC does not exist for this project as the post-development impervious area is less than that of the pre-development.
List applicable LID performance criteria (Section 7.II-2.4.3 from MWQMP)	Infiltrate, harvest and use, evapotranspire, or biotreat/biofilter, the 85th percentile, 24-hour storm event (Design Capture Volume). LID BMPs must be designed to retain, on-site storm water runoff up to 80 percent average annual capture efficiency.
List applicable treatment control BMP performance criteria (Section 7.II-3.2.2 from MWQMP)	If it's not feasible to meet LID performance criteria through retention and/ or biotreatment, treatment control BMPs shall be provided on-site or offsite prior to discharge to waters of the US. Sizing of TC BMPs shall be based on either the unmet volume after claiming applicable water quality credits, if appropriate, and as calculated in TGD Appendix VI Not applicable. The project will meet the LID performance criteria through biotreatment.
Calculate LID design storm capture volume for Project.	<u>DCV onsite:</u> DCV = C x D x A C= (0.75 x 0.795) + 0.15 = 0.7463 D=0.75” A= 2.12 ac DCV = (0.7463) x (0.75 in) x (2.12 ac) x (1’/12”) x (43,560 sf/ 1 ac) = 4,308 cf

IV.2. Site Design and Drainage

Describe site design and drainage including

- A narrative of site design practices utilized or rationale for not using practices;
- A narrative of how site is designed to allow BMPs to be incorporated to the MEP
- A table of DMA characteristics and list of LID BMPs proposed in each DMA.
- Reference to the WQMP "BMP Exhibit."
- Calculation of Design Capture Volume (DCV) for each drainage area.
- A listing of GIS coordinates for LID and Treatment Control BMPs.

Refer to Section 2.4.2 in the Technical Guidance Document (TGD).

Proposed drainage flows away from proposed buildings to the concrete v-gutters in the center of the site. From the v-gutters the drainage will flow to the underground drainage through grates located in the southwest corner of the lot. The underground drainage will flow to the MWS-L-8-16-V biofiltration system and exit through a parkway drain that leads to Warner Avenue.

DCV was calculated at 4,308 cf.

IV.3 LID BMP Selection and Project Conformance Analysis

Each sub-section below documents that the proposed design features conform to the applicable project performance criteria via check boxes, tables, calculations, narratives, and/or references to worksheets. *Refer to Section 2.4.2.3 in the Technical Guidance Document (TGD) for selecting LID BMPs and Section 2.4.3 in the Technical Guidance Document (TGD) for conducting conformance analysis with project performance criteria.*

IV.3.1 Hydrologic Source Controls (HSCs)

If required HSCs are included, fill out applicable check box forms. If the retention criteria are otherwise met with other LID BMPs, include a statement indicating HSCs not required.

Name	Included?
Localized on-lot infiltration	☐
Impervious area dispersion (e.g. roof top disconnection)	☐
Street trees (canopy interception)	☐
Residential rain barrels (not actively managed)	☐
Green roofs/Brown roofs	☐
Blue roofs	☐
Impervious area reduction (e.g. permeable pavers, site design)	☐
Other:	☐
Other:	☐
Other:	☐
Other:	☐
Other:	☐
Other:	☐
Other:	☐
Other:	☐

IV.3.2 Infiltration BMPs

Identify infiltration BMPs to be used in project. If design volume cannot be met, state why.

Name	Included?
Bioretention without underdrains	☐
Rain gardens	☐
Porous landscaping	☐
Infiltration planters	☐
Retention swales	☐
Infiltration trenches	☐
Infiltration basins	☐
Drywells	☐
Subsurface infiltration galleries	☐
French drains	☐
Permeable asphalt	☐
Permeable concrete	☐
Permeable concrete pavers	☐
Other:	☐
Other:	☐

Show calculations below to demonstrate if the LID Design Strom Capture Volume can be met with infiltration BMPs. If not, document how much can be met with infiltration and document why it is not feasible to meet the full volume with infiltration BMPs.

The site has type C soils (see attached OC Technical Guidance Document Figure XVI-2a in Attachment E). For this reason, the infiltration is not feasible at the site.

IV.3.3 Evapotranspiration, Rainwater Harvesting BMPs

If the full Design Storm Capture Volume cannot be met with infiltration BMPs, describe any evapotranspiration and/or rainwater harvesting BMPs included.

Name	Included?
All HSCs; *See Section IV.3.1*	☐
Surface-based infiltration BMPs	☒
Biotreatment BMPs	☐
Above-ground cisterns and basins	☐
Underground detention	☐
Other:	☐
Other:	☐
Other:	☐

Show calculations below to demonstrate if the LID Design Storm Capture Volume can be met with evapotranspiration and/or rainwater harvesting BMPs in combination with infiltration BMPs. If not, document below how much can be met with either infiltration BMPs, evapotranspiration, rainwater harvesting BMPs, or a combination, and document why it is not feasible to meet the full volume with these BMP categories.

This is infeasible per Worksheet J: Summary of Harvested Water Demand and Feasibility, See Attachment G.

IV.3.4 Biotreatment BMPs

If the full Design Storm Capture Volume cannot be met with infiltration BMPs, and/or evapotranspiration and rainwater harvesting BMPs, describe biotreatment BMPs included. Include sections for selection, suitability, sizing, and infeasibility, as applicable.

Name	Included?
Bioretention with underdrains	☐
Stormwater planter boxes with underdrains	☐
Rain gardens with underdrains	☐
Constructed wetlands	☐
Vegetated swales	☐
Vegetated filter strips	☐
Proprietary vegetated biotreatment systems	☒
Wet extended detention basin	☐
Dry extended detention basins	☐
Other:	☐
Other:	☐

Show calculations below to demonstrate if the LID Design Storm Capture Volume can be met with infiltration, evapotranspiration, rainwater harvesting and/or biotreatment BMPs. If not, document how much can be met with either infiltration BMPs, evapotranspiration, rainwater harvesting BMPs, or a combination, and document why it is not feasible to meet the full volume with these BMP categories.

MWS-L-8-16-V biofiltration system was installed to treat runoff before it exits the site.
One MWS-L-8-16-V unit was installed to meet the required treatment flow rate of 0.411 cfs.

A MWS-L-8-16-V unit has the treatment capacity of 0.462 cfs as shown on the attached sizing chart.

For sizing calculations See Attachment F.

IV.3.5 Hydromodification Control BMPs

Describe hydromodification control BMPs. *See Section 5 of the Technical Guidance Document (TGD).* Include sections for selection, suitability, sizing, and infeasibility, as applicable. Detail compliance with Prior Conditions of Approval (if applicable).

Hydromodification Control BMPs	
BMP Name	**BMP Description**

IV.3.6 Regional/Sub-Regional LID BMPs

Describe regional/sub-regional LID BMPs in which the project will participate. *Refer to Section 7.II-2.4.3.2 of the Model WQMP.*

Regional/Sub-Regional LID BMPs
N/A

IV.3.7 Treatment Control BMPs

Treatment control BMPs can only be considered if the project conformance analysis indicates that it is not feasible to retain the full design capture volume with LID BMPs. Describe treatment control BMPs including sections for selection, sizing, and infeasibility, as applicable.

Treatment Control BMPs	
BMP Name	**BMP Description**

IV.3.8 Non-structural Source Control BMPs

Fill out non-structural source control check box forms or provide a brief narrative explaining if non-structural source controls were not used.

Non-Structural Source Control BMPs				
Identifier	**Name**	**Check One**		**If not applicable, state brief reason**
		Included	**Not Applicable**	
N1	Education for Property Owners, Tenants and Occupants	☒	☐	
N2	Activity Restrictions	☒	☐	
N3	Common Area Landscape Management	☒	☐	
N4	BMP Maintenance	☒	☐	
N5	Title 22 CCR Compliance (How development will comply)	☒	☐	
N6	Local Industrial Permit Compliance	☐	☒	Multi-family residential property
N7	Spill Contingency Plan	☐	☒	Multi-family residential property
N8	Underground Storage Tank Compliance	☐	☒	No underground storage
N9	Hazardous Materials Disclosure Compliance	☐	☒	No hazardous materials
N10	Uniform Fire Code Implementation	☒	☐	
N11	Common Area Litter Control	☒	☐	
N12	Employee Training	☒	☐	
N13	Housekeeping of Loading Docks	☐	☒	No loading docks
N14	Common Area Catch Basin Inspection	☒	☐	
N15	Street Sweeping Private Streets and Parking Lots	☒	☐	
N16	Retail Gasoline Outlets	☐	☒	Multi-family residential property

N1 Education for Property Owners, Tenants and Occupants
Property management will periodically provide environmental awareness education materials, made available by the municipalities, to all of its members. Among other things, these materials will describe the use of chemicals (including household type) that should be limited to the property, with no discharge of wastes via hosing or other direct discharge to gutters, catch basins and storm drains.

N2 Activity Restrictions
Conditions, covenants and restrictions (CCRs) will be prepared by the developer for the purpose of surface water quality protection. Not allowing car washing outside of established community car wash areas in multi-unit complexes. Alternatively, use restrictions may be developed by a building operator through lease terms,

N3 (SC-73) Common Area Landscape Management
Landscape maintenance requirements that are consistent with those in the County Water Conservation Resolution (or city equivalent) that include fertilizer and/or pesticide usage consistent with Management Guidelines for Use of Fertilizers (DAMP Section 5.5).

N4 BMP Maintenance
The Project WQMP shall identify responsibility for implementation of each non-structural BMP and scheduled cleaning and/or maintenance of all structural BMP facilities.

N5 Title 22 CCR Compliance
Compliance with Title 22 of the California Code of Regulations (CCR) and relevant sections of the California Health & Safety Code regarding hazardous waste management is enforced by County Environmental Health on behalf of the State.

N10 Uniform Fire Code Implementation
Compliance with Article 80 of the Uniform Fire Code enforced by fire protection agency.

N11 (SC-60) Common Area Litter Control
Property management should be required to implement trash management and litter control procedures in the common areas aimed at reducing pollution of drainage water. The property management may contract with their landscape maintenance firms to provide this service during regularly scheduled maintenance, which should consist of litter patrol, emptying of trash receptacles in common areas, and noting trash disposal violations by tenants and reporting the violations to the property managaement for investigation.

N12 Employee Training
Education program (see N1) as it would apply to future employees of property management. Developer either prepares manual(s) for development that is constructed for an unspecified use makes commitment on behalf of the property management.

N14 (SC-74) Common Area Catch Basin Inspection

Property management is required to have at least 80 percent of drainage facilities inspected, cleaned and maintained on an annual basis with 100 percent of the facilities included in a two-year period. Cleaning should take place in the late summer/early fall prior to the start of the rainy season. Drainage facilities include catch basins (storm drain inlets). Records should be kept to document the annual maintenance.

N15 (SC-43, SC-70) Street Sweeping Private Streets and Parking Lots

Streets and parking lots are required to be swept prior to the storm season, in late summer or early fall, prior to the start of the rainy season or equivalent as required by the governing jurisdiction.

IV.3.9 Structural Source Control BMPs

Fill out structural source control check box forms or provide a brief narrative explaining if structural source controls were not used.

Structural Source Control BMPs				
Identifier	**Name**	**Check One**		**If not applicable, state brief reason**
		Included	**Not Applicable**	
S1	Provide storm drain system stenciling and signage	☒	☐	
S2	Design and construct outdoor material storage areas to reduce pollution introduction	☐	☒	No material storage
S3	Design and construct trash and waste storage areas to reduce pollution introduction	☒	☐	
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	☒	☐	
S5	Protect slopes and channels and provide energy dissipation	☐	☒	No channels
	Incorporate requirements applicable to individual priority project categories (from SDRWQCB NPDES Permit)	☐	☐	
S6	Dock areas	☐	☒	No docks
S7	Maintenance bays	☐	☒	No maintenance bays
S8	Vehicle wash areas	☐	☒	Multi-family residential
S9	Outdoor processing areas	☐	☒	Multi-family residential
S10	Equipment wash areas	☐	☒	Multi-family residential
S11	Fueling areas	☐	☒	Multi-family residential
S12	Hillside landscaping	☐	☒	No hillside landscaping
S13	Wash water control for food preparation areas	☐	☒	Multi-family residential
S14	Community car wash racks	☐	☒	Multi-family residential

S1 (SD-13) Provide Storm Drain System Stenciling and Signage

Storm drain stencils are highly visible source control messages, typically placed directly adjacent to storm drain inlets. The stencils contain a brief statement that prohibits the dumping of improper materials into the municipal storm drain system. Graphical icons, either illustrating anti-dumping symbols or images of receiving water fauna, are effective supplements to the antidumping message. Stencils and signs alert the public to the destination of pollutants discharged into stormwater. The following requirements should be included in the project design and shown on the project plans:

1. Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language (such as: "NO DUMPING DRAINS TO OCEAN") and/or graphical icons to discourage illegal dumping.
2. Post signs and prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.
3. Maintain legibility of stencils and signs.

See CASQA Stormwater Handbook BMP Fact Sheet SD-13 for additional information.

S3 (SD-32) Design Trash Enclosures to Reduce Pollutant Introduction

Design of trash storage areas to reduce pollutant introduction. All trash container areas shall meet the following requirements (limited exclusion: detached residential homes):

1. Paved with an impervious surface, designed not to allow run-on from adjoining areas, designed to divert drainage from adjoining roofs and pavements diverted around the area, screened or walled to prevent off-site transport of trash; and
2. Provide solid roof or awning to prevent direct precipitation.

Connection of trash area drains to the municipal storm drain system is prohibited.

See CASQA Stormwater Handbook Section 3.2.9 and BMP Fact Sheet SD-32 for additional information.

S4 (SD-12) Use Efficient Irrigation Systems and Landscape Design

Projects shall design the timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the municipal storm drain system. (Limited exclusion: detached residential homes.) The following methods to reduce excessive irrigation runoff shall be considered, and incorporated on common areas of development and other areas where determined applicable and feasible by the Permittee:

1. Employing rain shutoff devices to prevent irrigation after precipitation.
2. Designing irrigation systems to each landscape area's specific water requirements.
3. Using flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
4. Implementing landscape plan consistent with County Water Conservation Resolution or city equivalent, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.
5. The timing and application methods of irrigation water shall be designed to minimize the runoff of excess irrigation water into the municipal storm drain system.
6. Employing other comparable, equally effective, methods to reduce irrigation water runoff.
7. Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider other design features, such as:

    - Use mulches (such as wood chips or shredded wood products) in planter areas without ground cover to minimize sediment in runoff.
    - Install appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant material where possible and/or as recommended by the landscape architect.
    - Leave a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible.
    - Choose plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth.

    Irrigation practices shall comply with local and statewide ordinances related to irrigation efficiency.

IV.4 Alternative Compliance Plan (If Applicable)

Describe an alternative compliance plan (if applicable). Include alternative compliance obligations (i.e., gallons, pounds) and describe proposed alternative compliance measures. *Refer to Section 7.II 3.0 in the WQMP.*

IV.4.1 Water Quality Credits

Determine if water quality credits are applicable for the project. *Refer to Section 3.1 of the Model WQMP for description of credits and Appendix VI of the Technical Guidance Document (TGD) for calculation methods for applying water quality credits.*

<table>
<tr><th colspan="5">Description of Proposed Project</th></tr>
<tr><td colspan="5">Project Types that Qualify for Water Quality Credits (Select all that apply):</td></tr>
<tr><td colspan="2">☐Redevelopment projects that reduce the overall impervious footprint of the project site.</td><td colspan="2">☐Brownfield redevelopment, meaning redevelopment, expansion, or reuse of real property which may be complicated by the presence or potential presence of hazardous substances, pollutants or contaminants, and which have the potential to contribute to adverse ground or surface WQ if not redeveloped.</td><td>☐ Higher density development projects which include two distinct categories (credits can only be taken for one category): those with more than seven units per acre of development (lower credit allowance); vertical density developments, for example, those with a Floor to Area Ratio (FAR) of 2 or those having more than 18 units per acre (greater credit allowance).</td></tr>
<tr><td colspan="2">☐ Mixed use development, such as a combination of residential, commercial, industrial, office, institutional, or other land uses which incorporate design principles that can demonstrate environmental benefits that would not be realized through single use projects (e.g. reduced vehicle trip traffic with the potential to reduce sources of water or air pollution).</td><td colspan="2">☐ Transit-oriented developments, such as a mixed use residential or commercial area designed to maximize access to public transportation; similar to above criterion, but where the development center is within one half mile of a mass transit center (e.g. bus, rail, light rail or commuter train station). Such projects would not be able to take credit for both categories, but may have greater credit assigned</td><td>☐ Redevelopment projects in an established historic district, historic preservation area, or similar significant city area including core City Center areas (to be defined through mapping).</td></tr>
<tr><td>☐Developments with dedication of undeveloped portions to parks, preservation areas and other pervious uses.</td><td>☐ Developments in a city center area.</td><td>☐ Developments in historic districts or historic preservation areas.</td><td>☐ Live-work developments, a variety of developments designed to support residential and vocational needs together – similar to criteria to mixed use development; would not be able to take credit for both categories.</td><td>☐In-fill projects, the conversion of empty lots and other underused spaces into more beneficially used spaces, such as residential or commercial areas.</td></tr>
<tr><td>Calculation of Water Quality Credits
(if applicable)</td><td colspan="4">N/A</td></tr>
</table>

IV.4.2 Alternative Compliance Plan Information

Describe an alternative compliance plan (if applicable). Include alternative compliance obligations (i.e., gallons, pounds) and describe proposed alternative compliance measures. *Refer to Section 7.II 3.0 in the Model WQMP.*

None

Section V Inspection/Maintenance Responsibility for BMPs

Fill out information in table below. Prepare and attach an Operation and Maintenance Plan. Identify the funding mechanism through which BMPs will be maintained. Inspection and maintenance records must be kept for a minimum of five years for inspection by the regulatory agencies. *Refer to Section 7.II 4.0 in the Model WQMP.*

BMP Inspection/Maintenance			
BMP	**Reponsible Party(s)**	**Inspection/ Maintenance Activities Required**	**Minimum Frequency of Activities**
EDUCATION FOR PROPERTY OWNERS TENANTS AND OCCUPANTS	OWNER		
ACTIVITY RESTRICTIONS	OWNER	Washing and storage restrictions outlined in this WQMP shall be enforced at all times	Continuously
COMMON AREA LANDSCAPE MANAGEMENT	OWNER	All pesticides shall be applied in strict accordance to pesticide applications laws as stated in the State of California Agricultural Code. All pesticide applicators shall be certified by the State as a Qualified Applicator or be directly supervised by a Qualified Applicator. All fertilizers shall be applied at the rate stipulated by the	Weekly during routine landscaping activities.

		manufacturer. Fertilizer Applicators shall be trained in the proper procedures of determining fertilizer rates and calibration of application equipment. Fertilizer shall be applied in such a manner as to avoid application onto hardscape surfaces. Annual soil test is recommended to advise on which fertilizer elements are needed to avoid application of unnecessary elements or over application. The local water agency or resource conservation district can assist with detailed information concerning this BMP.	
BMP MAINTENANCE	OWNER	The implementation of each non-structural BMP and scheduled cleaning of all structural BMP controls shall be the responsibility of the owner	Weekly during routine landscaping activities.
UNIFORM FIRE CODE IMPLEMENTATION	OWNER	Compliance with Article 80 of the Uniform Fire Code enforced by fire protection agency will be required.	Continuous

USE EFFICENT IRRIGATION SYSTEMS & LANDSCAPE DESIGN, WATER CONSERVATION, SMART CONTROLLERS, AND SOURCE CONTROL	OWNER	Project plans include applications methods to minimize irrigation water discharged into stormwater drainage systems.	Make sure all Irrigation systems are working properly. Repair as necessary.
Modular Wetlands Biofiltration System (MWS-L-8-16-V)	OWNER	Per Manufacturers recommendation within the Inspection and Maintenance Guide.	Monthly in first year, prior to October 1st, the start of the rainy season, then spring and fall.

Section VI BMP Exhibit (Site Plan)

VI.1 BMP Exhibit (Site Plan)

Include a BMP Exhibit (Site Plan), at a size no less than 24" by 36," which includes the following minimum information:

- Insert in the title block (lower right hand corner) of BMP Exhibit: the WQMP Number (assigned by staff) and the grading/building or Planning Application permit numbers
- Project location (address, tract/lot number(s), etc.)
- Site boundary
- Land uses and land covers, as applicable
- Suitability/feasibility constraints
- Structural BMP locations
- Drainage delineations and flow information
- Delineate the area being treated by each structural BMP
- GIS coordinates for LID and Treatment Control BMPs
- Drainage connections
- BMP details
- Preparer name and stamp

Please do not include any areas outside of the project area or any information not related to drainage or water quality. The approved BMP Exhibit (Site Plan) shall be submitted as a plan sheet on all grading and building plan sets submitted for plan check review and approval. The BMP Exhibit shall be at the same size as the rest of the plan sheets in the submittal and shall have an approval stamp and signature prior to plan check submittal.

VI.2 Submittal and Recordation of Water Quality Management Plan

Following approval of the Final Project-Specific WQMP, three copies of the approved WQMP (including BMP Exhibit, Operations and Maintenance (O&M) Plan, and Appendices) shall be submitted. In addition, these documents shall be submitted in a PDF format.

Each approved WQMP (including BMP Exhibit, Operations and Maintenance (O&M) Plan, and Appendices) shall be recorded in the Orange County Clerk-Recorder's Office, prior to close-out of grading and/or building permit. Educational Materials are not required to be included.



LEGEND

- XXX.XX — PROPOSED ELEVATIONS
- (XXX.XX) — EXISTING ELEVATIONS
- PROPERTY LINE
- X — CHAIN LINK FENCE
- S — SEWER LINE
- W — WATER LINE
- BLOCK WALL
- BUILDING
- PROPOSED CONCRETE
- LANDSCAPING
- PROPOSED ASPHALT PAVEMENT

CP	SURVEY CONTROL POINT
AC	ASPHALTIC CONCRETE
BSW	BACK OF SIDEWALK
CL	CENTERLINE
CLF	CHAIN LINK FENCE
+ ED	EXTRA DEPTH FOOTING
ED VLT	EDISON VAULT
EP	EDGE OF PAVEMENT
FF	FINISHED FLOOR
FL	FLOW LINE
FS	FINISHED SURFACE
GH SPK	GEARHEAD SPIKE
GTE VLT	GTE VAULT
LF	LINEAR FEET
LS	LANDSCAPE AREA
L.S.	LUMP SUM
NG	NATURAL GRADE
PP	POWER POLE
SF	SQUARE FEET
SMH	SEWER MANHOLE
SW	SIDEWALK
TC	TOP OF CURB
TG	TOP OF GRATE
TS	TOP OF STEP
TSW	TOP OF STEM WALL
WM	WATER METER
WV	WATER VALVE
WTR	WATER SERVICE

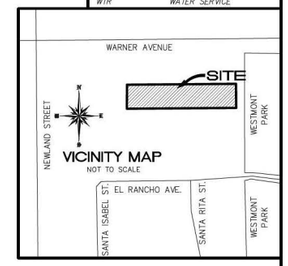
LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF FOUNTAIN VALLEY, COUNTY OF ORANGE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL NO. 1, AS SHOWN ON A MAP RECORDED IN BOOK 131, PAGES 46 AND 47 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM AN UNDIVIDED ONE-HALF INTEREST IN ALL OIL, GAS, MINERALS, AND HYDROCARBON SUBSTANCES LYING BELOW A DEPTH OF 500 FEET FROM THE SURFACE OF SAID LAND, BUT WITHOUT THE RIGHT OF ENTRY UPON ANY PORTION OF THE SURFACE OF SAID LAND FOR REMOVING OR MARKETING SAID SUBSTANCES, AS RESERVED IN THE DEED FROM C.C. BREADING AND WIFE, RECORDED JULY 15, 1955 IN BOOK 3139, PAGE 583, OFFICIAL RECORDS.

FOR CONVEYANCING PURPOSES ONLY: APN 167-361-17



SO. CAL. EDISON CO. R/W
R.S. 95/1-10
O.R. 8222-221

BMP LEGEND

STRUCTURAL BMPS

- (S1) CATCH BASIN STENCILING
- (S4) COMMON AREA EFFICIENT IRRIGATION
- (S4) COMMON AREA RUNOFF-MINIMIZING LANDSCAPE DESIGN
- (BIO-7) BIO-CLEAN MWS-L-8-16-V

NON - STRUCTURAL BMPS

- (N1) EDUCATION FOR PROPERTY OWNERS AND OCCUPANTS
- (N2) ACTIVITY RESTRICTIONS
- (N3) COMMON AREA LANDSCAPE MANAGEMENT
- (N4) BMP MAINTENANCE
- (N7) SPILL CONTIGENCY PLAN
- (N11) COMMON AREA LITTER CONTROL
- (N12) EMPLOYEE TRAINING
- (N14) CATCH BASIN INSPECTION
- (N15) STREET SWEEPING PRIVATE STREETS AND PARKING LOTS

SURFACE FLOW

PROPOSED ASPHALT PAVEMENT

PROPOSED CONCRETE HARDSCAPE

BMP'S FOR ENTIRE SITE
(N1) (N2) (N3) (N4) (N7) (N11) (N12)

(S1) (N14) ALL CATCH BASINS

SCALE: 1" = 20'
20' 10' 0 20' 40'
GRAPHIC SCALE

OWNER/DEVELOPER:

FV CENTER, LP
15261 TRANSISTOR LN.
HUNTINGTON BEACH, CA 92649
TELEPHONE: (714) 898-7557
FAX: (714) 892-5966
CONTACT: ROBERT STELLRECHT
E-MAIL: bob@stellrechtcompany.com

ARCHTIECT:

AO ARCHITECTS
144 NORTH ORANGE STREET
ORANGE, CA 92866
TELEPHONE: (714) 639-9860
CONTACT: SCOTT RUTLEDGE
E-MAIL: scottr@aoarchitects.com

SURVEYOR

JONES, CAHL & ASSOCIATES
18090 BEACH BLVD, SUITE #12
HUNTINGTON BEACH, CA 92648
TELEPHONE: (714) 848-0566
FAX: (714) 848-6322
CONTACT: DANIEL RUBIO, P.E., P.L.S
E-MAIL: jca@jonescahl.com

BASIS OF BEARINGS:

BEARINGS BASED ON FOUND MONUMENTS ALONG THE CENTERLINE OF WARNER AVENUE BEING NORTH 89°32'38" WEST AS PER PARCEL MAP, BOOK 131 PAGE 47, IN THE CITY OF FOUNTAIN VALLEY, COUNTY OF ORANGE, STATE OF CALIFORNIA.

BENCHMARK: 1D-93-87

DESCRIBED BY OCS 2002 – FOUND 3 3\4" OCS ALUMINUM BENCHMARK DISK STAMPED "1D-93-87 RESET FEB 1987", SET IN THE NORTHWEST CORNER OF A 5 FT. BY 5 FT. CONCRETE CATCH BASIN. MONUMENT IS LOCATED 6 FT. NORTH OF THE NORTHERLY CURB AND 104 FT. EAST OF THE END OF MERLE CIRCLE. MONUMENT IS SET LEVEL WITH THE SIDEWALK.

ELEV. 27.643 ; NAVD 88, YEAR LEVELED 2005
O.C.S. 1995 ADJUSTMENT

DIGALERT

SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES A DIG ALERT 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** TWO WORKING DAYS BEFORE YOU DIG

DATE	BY	REVISION	APPROVED BY	REFERENCES

JONES, CAHL & ASSOCIATES
CONSULTING ENGINEERS
18090 Beach Boulevard - Huntington Beach
California 92648 - (714) 848-0566

DESIGNED:	R.H.	SCALE:	1" = 20'
DRAWN:	R.H.	DATE:	10/18/2024
CHECKED	D.R.	JOB NO.	23-2670

PREPARED UNDER THE DIRECTION OF:
DANIEL RUBIO R.C.E. 60934 DATE

FV CENTER, LP

WQMP SITE PLAN
8550 WARNER AVENUE

FOUNTAIN VALLEY **CALIFORNIA**

DWG. NO. 23-2670 | SHEET NO. 1 OF 1 | REV. 0

Section VII Educational Materials

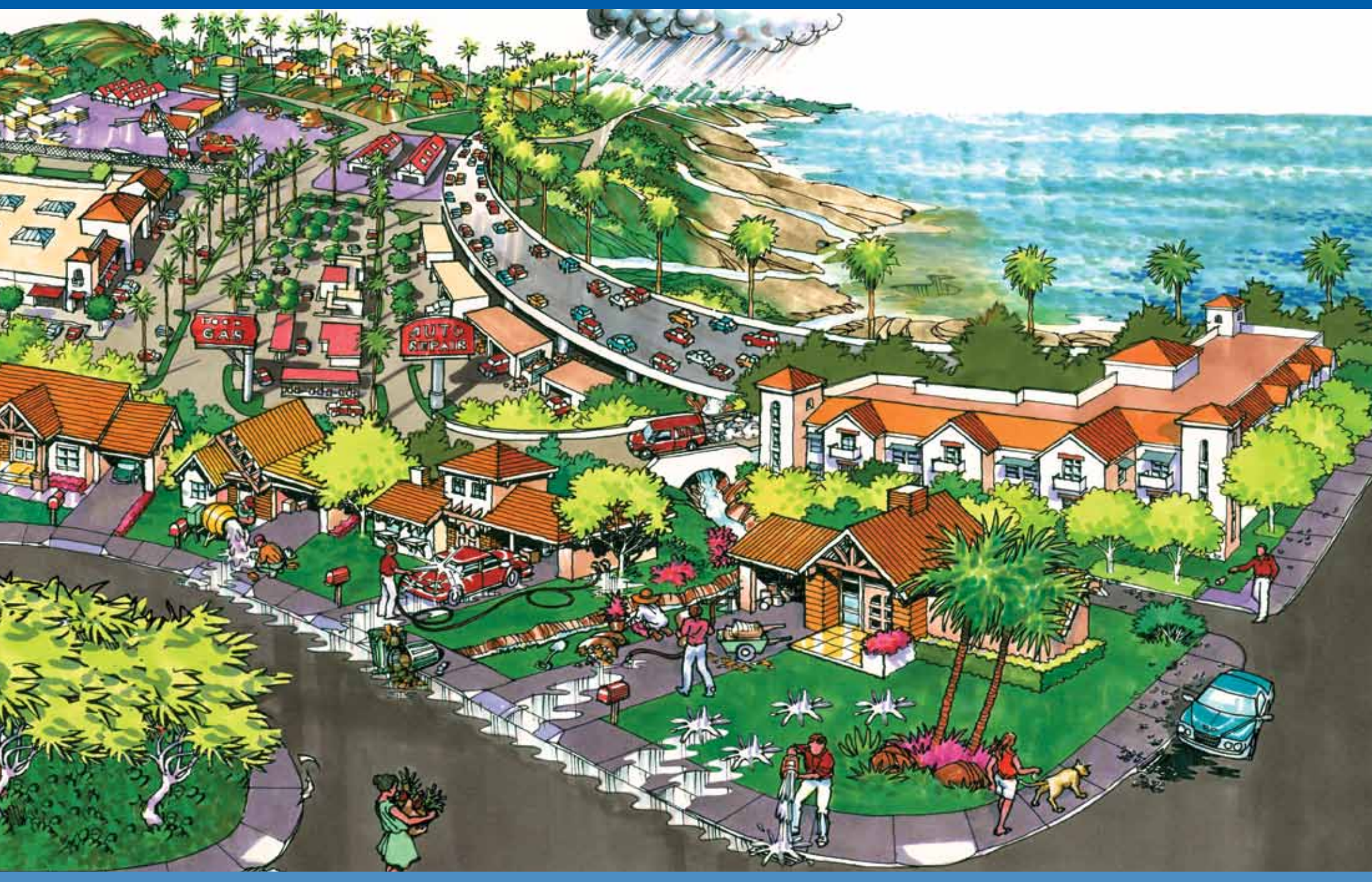
Refer to the Orange County Stormwater Program (ocwatersheds.com) for a library of materials available. Please only attach the educational materials specifically applicable to this project. Other materials specific to the project may be included as well and must be attached.

Education Materials			
Residential Material (http://www.ocwatersheds.com)	**Check If Applicable**	**Business Material (http://www.ocwatersheds.com)**	**Check If Applicable**
The Ocean Begins at Your Front Door	☒	Tips for the Automotive Industry	☐
Tips for Car Wash Fund-raisers	☐	Tips for Using Concrete and Mortar	☒
Tips for the Home Mechanic	☒	Tips for the Food Service Industry	☐
Homeowners Guide for Sustainable Water Use	☒	Proper Maintenance Practices for Your Business	☐
Household Tips	☒	**Other Material**	**Check If Attached**
Proper Disposal of Household Hazardous Waste	☒		
Recycle at Your Local Used Oil Collection Center (North County)	☐		☐
Recycle at Your Local Used Oil Collection Center (Central County)	☒		☐
Recycle at Your Local Used Oil Collection Center (South County)	☐		☐
Tips for Maintaining a Septic Tank System	☐		☐
Responsible Pest Control	☒		☐
Sewer Spill	☒		☐
Tips for the Home Improvement Projects	☒		☐
Tips for Horse Care	☐		☐
Tips for Landscaping and Gardening	☒		☐
Tips for Pet Care	☒		☐
Tips for Pool Maintenance	☐		☐
Tips for Residential Pool, Landscape and Hardscape Drains	☐		☐
Tips for Projects Using Paint	☒		☐

Attachment A

Educational Materials

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.oclandfills.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.oclandfills.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

The Ocean Begins at Your Front Door

Even if you live miles from the Pacific Ocean, you may be unknowingly polluting it.



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 rinse 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.



Dumping one quart of motor oil into a storm drain can contaminate 250,000 gallons of water.

For More Information

Orange County Stormwater Program

California Environmental Protection Agency
www.calepa.ca.gov

- **Air Resources Board**
  www.arb.ca.gov
- **Department of Pesticide Regulation**
  www.cdpr.ca.gov
- **Department of Toxic Substances Control**
  www.dtsc.ca.gov
- **Integrated Waste Management Board**
  www.ciwmb.ca.gov
- **Office of Environmental Health Hazard Assessment**
  www.oehha.ca.gov
- **State Water Resources Control Board**
  www.waterboards.ca.gov

Earth 911 - Community-Specific Environmental Information 1-800-cleanup or visit www.1800cleanup.org

Health Care Agency's Ocean and Bay Water Closure and Posting Hotline
(714) 433-6400 or visit www.ocbeachinfo.com

Integrated Waste Management Dept. of Orange County (714) 834-6752 or visit www.oclandfills.com for information on household hazardous waste collection centers, recycling centers and solid waste collection

O.C. Agriculture Commissioner
(714) 447-7100 or visit www.ocagcomm.com

Stormwater Best Management Practice Handbook
Visit www.cabmphandbooks.com

UC Master Gardener Hotline
(714) 708-1646 or visit www.uccemg.com

The Orange County Stormwater Program has created and moderates an electronic mailing list to facilitate communications, take questions and exchange ideas among its users about issues and topics related to stormwater and urban runoff and the implementation of program elements. To join the list, please send an email to ocstormwaterinfo-join@list.ocwatersheds.com

Aliso Viejo	(949)	425-2535
Anaheim Public Works Operations	(714)	765-6860
Brea Engineering	(714)	990-7666
Buena Park Public Works	(714)	562-3655
Costa Mesa Public Services	(714)	754-5323
Cypress Public Works	(714)	229-6740
Dana Point Public Works	(949)	248-3584
Fountain Valley Public Works	(714)	593-4441
Fullerton Engineering Dept.	(714)	738-6853
Garden Grove Public Works	(714)	741-5956
Huntington Beach Public Works	(714)	536-5431
Irvine Public Works	(949)	724-6315
La Habra Public Services	(562)	905-9792
La Palma Public Works	(714)	690-3310
Laguna Beach Water Quality	(949)	497-0378
Laguna Hills Public Services	(949)	707-2650
Laguna Niguel Public Works	(949)	362-4337
Laguna Woods Public Works	(949)	639-0500
Lake Forest Public Works	(949)	461-3480
Los Alamitos Community Dev.	(562)	431-3538
Mission Viejo Public Works	(949)	470-3056
Newport Beach, Code & Water Quality Enforcement	(949)	644-3215
Orange Public Works	(714)	532-6480
Placentia Public Works	(714)	993-8245
Rancho Santa Margarita	(949)	635-1800
San Clemente Environmental Programs	(949)	361-6143
San Juan Capistrano Engineering	(949)	234-4413
Santa Ana Public Works	(714)	647-3380
Seal Beach Engineering	(562)	431-2527 x317
Stanton Public Works	(714)	379-9222 x204
Tustin Public Works/Engineering	(714)	573-3150
Villa Park Engineering	(714)	998-1500
Westminster Public Works/Engineering	(714)	898-3311 x446
Yorba Linda Engineering	(714)	961-7138
Orange County Stormwater Program	(877)	897-7455

Orange County 24-Hour
Water Pollution Problem Reporting Hotline
1-877-89-SPILL (1-877-897-7455)

On-line Water Pollution Problem Reporting Form

www.ocwatersheds.com

Printed on Recycled Paper

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, not properly disposing of used oil is illegal and can lead to fines. If you pour or drain oil onto driveways, sidewalks or streets, it can be washed into the storm drain.

Help prevent water pollution by taking your used oil and oil filters to a used oil collection center. Most major automotive maintenance centers will accept up to five gallons of used motor oil at no cost. For a list of locations, please visit www.cleanup.org.



For more information, please call the **Orange County Stormwater Program** at **1-877-89-SPILL (1-877-897-7455)** or visit **www.ocwatersheds.com.**

For information about the proper disposal of household hazardous waste, call the **Household Waste Hotline** at **1-877-89-SPILL (1-877-897-7455)** or visit **www.oclandfills.com.**

For additional information about the nearest oil recycling center, call the **Used Oil Program** at **1-800-CLEANUP** or visit **www.cleanup.org.**

RECYCLE USED OIL

emc/rev9/08

Help Prevent Ocean Pollution:

Tips for the Home Mechanic



PROJECT Pollution PREVENTION

The Ocean Begins at Your Front Door

Tips for the Home Mechanic

WORK SITE

- Locate the storm drains on or near your property. Do not allow used oil or any materials to flow into these drains.
- Examine your home for sources of pollution.
- Perform automotive projects under cover and in a controlled area to prevent stormwater runoff.
- Sweep or vacuum your automotive workspace regularly
- Use a damp mop to clean work areas. Never hose down surfaces into the street, gutter or storm drain.



- Pour mop water into a sink or toilet. Never dispose of water in a parking lot, street, gutter or storm drain.

PREVENT LEAKS AND SPILLS

- Keep absorbent materials such as rags and/or cat litter in the work area
- Empty drip pans into a labeled, seal container before they are full
- Wipe up any spills or repair leaks as they happen. Don't let them sit.
- Place large pans under any wrecked cars until all fluids are drained.
- Promptly dispose of collected fluids into a hazardous waste drum or deliver them to an oil recycling center. Used oil recycling locations can be found at http://www.ochealthinfo.com/regulatory/usedoil.htm

CLEANING SPILLS

- Clean up spills immediately by using absorbent material such as rags, cat litter or sand. If the material spilled is hazardous, dispose of the rag, litter or sand in the same manner as hazardous waste. If the material spill is non-hazardous, dispose of it in the trash.



- Immediately report spills that have entered the street, gutter or storm drain to the County's 24-Hour Water Pollution Problem Reporting Hotline at 1-877-89-SPILL (1-877-897-7455) or visit www.ocwatersheds.com to fill out an incident report.
- Report emergencies to 911.

VEHICLE FLUID MANAGEMENT

- Vehicle fluids are hazardous waste and must be stored and disposed of in accordance with all local, state and federal laws.
- Designate an area to drain vehicle fluids away from storm drains and sanitary drains.
- When possible, drain vehicle fluids indoors or within covered areas, and only over floors that are constructed of a non-porous material such as concrete. Asphalt and dirt floors absorb spilled or leaked fluids, making the cleanup extremely difficult.



PROJECT Pollution PREVENTION

The Pollution Solution

Several residential activities can result in water pollution. Among these activities are car washing and hosing off driveways and sidewalks. Both activities can waste water and result in excess runoff. Water conservation methods described in this pamphlet can prevent considerable amounts of runoff and conserve water. By taking your car to a commercial car wash and by sweeping driveways and sidewalks, you can further prevent the transport of pollutants to Orange County waterways. Here are some of the common pollutants for which you can be part of the solution:

1 Pesticides and Fertilizer



- **Pollution:** The same pesticides that are designed to be toxic to pests can have an equally lethal impact on our marine life. The same fertilizer that promotes plant growth in lawns and gardens can also create nuisance algae blooms, which remove oxygen from the water and clog waterways when it decomposes.

- **Solution:** Never use pesticides or fertilizer within 48 hours of an anticipated rainstorm. Use only as much as is directed on the label and keep it off driveways and sidewalks.

2 Dirt and Sediment

- **Pollution:** Dirt or sediment can impede the flow of the stormwater and negatively impact stream habitat as it travels through waterways and deposits downstream. Pollutants can attach to sediment, which can then be transported through our waterways.

- **Solution:** Protect dirt stockpiles by covering them with tarps or secure plastic sheets to prevent wind or rain from allowing dirt or sediment to enter the storm drain system.

3 Metals

- **Pollution:** Metals and other toxins present in car wash water can harm important plankton, which forms the base of the aquatic food chain.

- **Solution:** Take your car to a commercial car wash where the wash water is captured and treated at a local wastewater treatment plant.

DID YOU KNOW?

Did you know that most of the pollution found in our waterways is not from a single source, but from a "non-point" source meaning the accumulation of pollution from residents and businesses throughout the community

4 Pet Waste

- **Pollution:** Pet waste carries bacteria through our watersheds and eventually will be washed out to the ocean. This can pose a health risk to swimmers and surfers.

- **Solution:** Pick up after your pets!

5 Trash and Debris



- **Pollution:** Trash and debris can enter waterways by wind, littering and careless maintenance of trash receptacles. Street sweeping collects some of this trash; however, much of what isn't captured ends up in our storm drain system where it flows untreated out to the ocean.

- **Solution:** Don't litter and make sure trash containers are properly covered. It is far more expensive to clean up the litter and trash that ends up in our waterways than it is to prevent it in the first place. Come out to one of Orange County's many locations for Coastal and Inner-Coastal Cleanup Day, which is held in September.

6 Motor Oil / Vehicle Fluids

- **Pollution:** Oil and petroleum products from our vehicles are toxic to people, wildlife and plants.



- **Solution:** Fix any leaks from your vehicle and keep the maintenance up on your car. Use absorbent material such as cat litter on oil spills, then sweep it up and dispose of it in the trash. Recycle used motor oil at a local Household Hazardous Waste Collection Center.



A TEAM EFFORT

The Orange County Stormwater Program has teamed with the Municipal Water District of Orange County (MWDOC) and the University of California Cooperative Extension Program (UCCE) to develop this pamphlet.

Low Impact Development (LID) and sustainable water use prevents water pollution and conserves water for drinking and reuse. Reducing your water use and the amount of water flowing from your home protects the environment and saves you money.

Thank you for making water protection a priority!

For more information, please visit www.ocwatersheds.com/publiced/

www.mwdoc.com

www.uccemg.com



To report a spill, call the Orange County 24-Hour Water Pollution Prevention Reporting Hotline at 1-877-89-SPILL \(1-877-897-7455)

Special Thanks to
The City of Los Angeles Stormwater Program for the use of its artwork

The Metropolitan Water District of Southern California for the use of the California-Friendly Plant and Native Habitat photos



Homeowners Guide for Sustainable Water Use

Low Impact Development, Water Conservation & Pollution Prevention



The Ocean Begins at Your Front Door







RUNOFF, RAINWATER AND REUSE

Where Does Water Runoff Go?

Stormwater, or water from rainfall events, and runoff from outdoor water use such as sprinklers and hoses flows from homes directly into catch basins and the storm drain system. After entering the storm drain, the water flows untreated into streams, rivers, bays and ultimately the Pacific Ocean. Runoff can come from lawns, gardens, driveways, sidewalks and roofs. As it flows over hard, impervious surfaces, it picks up pollutants. Some pollutants carried by the water runoff include trash, pet waste, pesticides, fertilizer, motor oil and more.

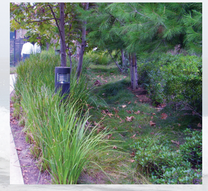




Water Conservation

Pollution not only impairs the water quality for habitat and recreation, it can also reduce the water available for reuse. Runoff allowed to soak into the ground is cleaned as it percolates through the soil, replenishing depleted groundwater supplies. Groundwater provides at least 50% of the total water for drinking and other indoor household activities in north and central Orange County. When land is covered with roads, parking lots, homes, etc., there is less land to take in the water and more hard surfaces over which the water can flow.

In Orange County, 60-70% of water used by residents and businesses goes to irrigation and other outdoor uses. Reusing rainwater to irrigate our lawn not only reduces the impact of water pollution from runoff, but it also is a great way to conserve our precious water resources and replenish our groundwater basin.



What is Low Impact Development (LID)?

Low Impact Development (LID) is a method of development that seeks to maintain the natural hydrologic character of an area. LID provides a more sustainable and pollution-preventative approach to water management.

New water quality regulations require implementation of LID in larger new developments and encourage implementation of LID and other sustainable practices in existing residential areas. Implementing modifications to your lawn or garden can reduce pollution in our environment, conserve water and reduce your water bill.



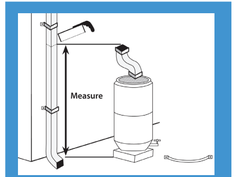
Permeable pavement allows water runoff to infiltrate through the soil and prevents most pollutants from reaching the storm drain system.

OPTIONS FOR RAINWATER HARVESTING AND REUSE

Rainwater harvesting is a great way to save money, prevent pollution and reduce potable water use. To harvest your rainwater, simply redirect the runoff from roofs and downspouts to rain barrels. Rain gardens are another option; these reduce runoff as well as encourage infiltration.

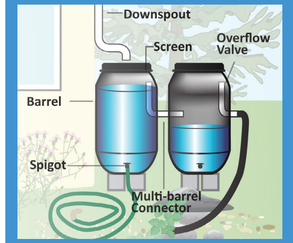
Downspout Disconnection/Redirection

Disconnecting downspouts from pipes running to the gutter prevents runoff from transporting pollutants to the storm drain. Once disconnected, downspouts can be redirected to rain gardens or other vegetated areas, or be connected to a rain barrel.



Rain Barrels

Rain barrels capture rainwater flow from roofs for reuse in landscape irrigation. Capacity of rain barrels needed for your home will depend on the amount of roof area and rainfall received. When purchasing your rain barrel, make sure it includes a screen, a spigot to siphon water for use, an overflow tube to allow for excess water to run out and a connector if you wish to connect multiple barrels to add capacity of water storage.

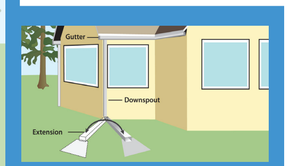


Mosquito growth prevention is very important when installing a rain barrel. The best way to prevent mosquito breeding is to eliminate entry points by ensuring all openings are sealed tightly. If these methods are unsuccessful, products are available to kill mosquito larvae, but that are harmless to animals and humans. Regular application of these products is essential. Please visit the Orange County Vector Control website for more information at www.ocvcd.org/mosquitoes3.php.

Rain Gardens

Rain gardens allow runoff to be directed from your roof downspout into a landscaped area. Vegetation and rocks in the garden will slow the flow of water to allow for infiltration into the soil. Plants and soil particles will absorb pollutants from the roof runoff. By utilizing a native plant palate, rain gardens can be maintained all year with minimal additional irrigation. These plants are adapted to the semi-arid climate of Southern California, require less water and can reduce your water bill.

Before modifying your yard to install a rain garden, please consult your local building and/or planning departments to ensure your garden plan follows pertinent building codes and ordinances. Besides codes and ordinances, some home owner associations also have guidelines for yard modifications. If your property is in hill areas or includes engineered slopes, please seek professional advice before proceeding with changes.







For information on how to disconnect a downspout or to install and maintain a rain barrel or rain garden at your home, please see the Los Angeles Rainwater Harvesting Program, A Homeowner's "How-To" Guide, November 2009 at www.larainwaterharvesting.org/

OTHER WATER CONSERVATION AND POLLUTION PREVENTION TECHNIQUES

Native Vegetation and Maintenance

"California Friendly" plants or native vegetation can significantly reduce water use. These plants often require far less fertilizers and pesticides, which are two significant pollutants found in Orange County waterways. Replacing water "thirsty" plants and grass types with water efficient natives is a great way to save water and reduce the need for potentially harmful pesticides and fertilizer.

Please see the California Friendly Garden Guide produced by the Metropolitan Water District of Southern California and associated Southern California Water Agencies for a catalog of California friendly plants and other garden resources at www.bewaterwise.com/Gardensoft.

Weed Free Yards

Weeds are water thieves. They often reproduce quickly and rob your yard of both water and nutrients. Weed your yard by hand if possible. If you use herbicides to control the weeds, use only the amount recommended on the label and never use it if rain is forecast within the next 48 hours.



Soil Amendments

Soil amendments such as green waste (e.g. grass clippings, compost, etc.) can be a significant source of nutrients and can help keep the soil near the roots of plants moist. However, they can cause algal booms if they get into our waterways, which reduces the amount of oxygen in the water and impacts most aquatic organisms. It is important to apply soil amendments more than 48 hours prior to predicted rainfall.

IRRIGATE EFFICIENTLY



Water runoff from sprinklers left on too long will carry pollutants into our waterways.

Smart Irrigation Controllers

Smart Irrigation Controllers have internal clocks as well as sensors that will turn off the sprinklers in response to environmental changes. If it is raining, too windy or too cold, the smart irrigation control sprinklers will automatically shut off.

Check with your local water agency for available rebates on irrigation controllers and smart timers.

- Aim your sprinklers at your lawn, not the sidewalk – By simply adjusting the direction of your sprinklers you can save water, prevent water pollution from runoff, keep your lawn healthy and save money.
- **Set a timer for your sprinklers** – lawns absorb the water they need to stay healthy within a few minutes of turning on the sprinklers. Time your sprinklers; when water begins running off your lawn, you can turn them off. Your timer can be set to water your lawn for this duration every time.
- **Water at Sunrise** – Watering early in the morning will reduce water loss due to evaporation. Additionally, winds tend to die down in the early morning so the water will get to the lawn as intended.
- **Water by hand** – Instead of using sprinklers, consider watering your yard by hand. Hand-watering ensures that all plants get the proper amount of water and you will prevent any water runoff, which wastes water and carries pollutants into our waterways.
- **Fix leaks** - Nationwide, households waste one trillion gallons of water a year to leaks – that is enough water to serve the entire state of Texas for a year. If your garden hose is leaking, replace the nylon or rubber hose washer and ensure a tight connection. Fix broken sprinklers immediately.

Do your part to prevent water pollution in our creeks, rivers, bays and ocean.

Clean beaches and healthy creeks, rivers, bays, and ocean are important to Orange County. However, many common household activities can lead to water pollution if you're not careful.

Remember the Water in Your Storm Drain is Not Treated BEFORE It Enters Our Waterways

Litter, oil, chemicals and other substances that are left on your yard or driveway can be blown or washed into storm drains that flow to the ocean. Over-watering your lawn and washing your car can also flush materials into the storm drains. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated.

You would never pour soap, fertilizers or oil into the ocean, so don't let them enter streets, gutters or storm drains. Follow the easy tips in this brochure to help prevent water pollution.

For more information, please call the **Orange County Stormwater Program** at **1-877-89-SPILL** (1-877-897-7455) or visit **www.ocwatersheds.com**

To report a spill, call the **Orange County 24-Hour Water Pollution Problem Reporting Hotline 1-877-89-SPILL** (1-877-897-7455).

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while performing everyday household activities. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

GENUINE RECYCLED PAPER
50% PRE-CONSUMER AND 15% POST-CONSUMER

RECYCLE USED OIL

Help Prevent Ocean Pollution:

Household Tips



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Pollution Prevention

Household Activities

- **Do not rinse spills with water!** Sweep outdoor spills and dispose of in the trash. For wet spills like oil, apply cat litter or another absorbent material, then sweep and bring to a household hazardous waste collection center (HHWCC).
- Securely cover trash cans.
- Take household hazardous waste to a household hazardous waste collection center.
- Store household hazardous waste in closed, labeled containers inside or under a cover.
- Do not hose down your driveway, sidewalk or patio. Sweep up debris and dispose of in trash.
- Always pick up after your pet. Flush waste down the toilet or dispose of in the trash.
- Bathe pets indoors or have them professionally groomed.

Household Hazardous Wastes include:

- ▲ **Batteries**
- ▲ **Paint thinners, paint strippers and removers**
- ▲ **Adhesives**
- ▲ **Drain openers**
- ▲ **Oven cleaners**
- ▲ **Wood and metal cleaners and polishes**
- ▲ **Herbicides and pesticides**
- ▲ **Fungicides/wood preservatives**
- ▲ **Automotive fluids and products**
- ▲ **Grease and rust solvents**
- ▲ **Thermometers and other products containing mercury**
- ▲ **Fluorescent lamps**
- ▲ **Cathode ray tubes, e.g. TVs, computer monitors**
- ▲ **Pool and spa chemicals**

Gardening Activities

- Follow directions on pesticides and fertilizers, (measure, do not estimate amounts) and do not use if rain is predicted within 48 hours.
- Water your lawn and garden by hand to control the amount of water you use. Set irrigation systems to reflect seasonal water needs. If water flows off your yard and onto your driveway or sidewalk, your system is over-watering.
- Mulch clippings or leave them on the lawn. If necessary, dispose in a green waste container.
- Cultivate your garden often to control weeds.

Washing and Maintaining Your Car

- Take your car to a commercial car wash whenever possible.
- Choose soaps, cleaners, or detergents labeled "non-toxic," "phosphate free" or "biodegradable." Vegetable and citrus-based products are typically safest for the environment, **but even these should not be allowed into the storm drain.**
- Shake floor mats into a trash can or vacuum to clean.
- Do not use acid-based wheel cleaners and "hose off" engine degreasers at home. They can be used at a commercial facility, which can properly process the washwater.
- **Do not dump washwater onto your driveway, sidewalk, street, gutter or storm drain.** Excess washwater should be disposed of in the sanitary sewers (through a sink, or toilet) or onto an absorbent surface like your lawn.
- Use a nozzle to turn off water when not actively washing down automobile.
- Monitor vehicles for leaks and place pans under leaks. Keep your car well maintained to stop and prevent leaks.
- Use cat litter or other absorbents and sweep to remove any materials deposited by vehicles. Contain sweepings and dispose of at a HHWCC.
- Perform automobile repair and maintenance under a covered area and use drip pans or plastic sheeting to keep spills and waste material from reaching storm drains.
- **Never pour oil or antifreeze in the street, gutter or storm drains.** Recycle these substances at a service station, HHWCC, or used oil recycling center. For the nearest Used Oil Collection Center call 1-800-CLEANUP or visit www.ciwmb.ca.gov/UsedOil.

For locations and hours of Household Hazardous Waste Collection Centers in Anaheim, Huntington Beach, Irvine and San Juan Capistrano, call (714)834-6752 or visit www.oclandfills.com.



Do your part to prevent water pollution in our creeks, rivers, bays and ocean.

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, not properly disposing of household hazardous waste can lead to water pollution. Batteries, electronics, paint, oil, gardening chemicals, cleaners and other hazardous materials cannot be thrown in the trash. They also must never be poured or thrown into yards, sidewalks, driveways, gutters or streets. Rain or other water could wash the materials into the storm drain and eventually into our waterways and the ocean. In addition, hazardous waste must not be poured in the sanitary sewers (sinks and toilets).

NEVER DISPOSE OF HOUSEHOLD HAZARDOUS WASTE IN THE TRASH, STREET, GUTTER, STORM DRAIN OR SEWER.

For more information, please call the **Orange County Stormwater Program** at **1-877-89-SPILL** (1-877-897-7455) or visit **www.ocwatersheds.com**

To Report Illegal Dumping of Household Hazardous Waste call 1-800-69-TOXIC

To report a spill, call the **Orange County 24-Hour Water Pollution Problem Reporting Hotline 1-877-89-SPILL** (1-877-897-7455).

For emergencies, dial 911.

RECYCLE USED OIL

Printed on Recycled Paper

Help Prevent Ocean Pollution:

Proper Disposal of Household Hazardous Waste



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

ORANGE COUNTY

Pollution Prevention

Leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients are considered to be "household hazardous waste" or "HHW." HHW can be found throughout your home, including the bathroom, kitchen, laundry room and garage.

WHEN POSSIBLE, USE NON-HAZARDOUS OR LESS-HAZARDOUS PRODUCTS.

Disposal of HHW down the drain, on the ground, into storm drains, or in the trash is illegal and unsafe.

Proper disposal of HHW is actually easy. Simply drop them off at a Household Hazardous Waste Collection Center (HHWCC) for free disposal and recycling. Many materials including anti-freeze, latex-based paint, motor oil and batteries can be recycled. Some centers have a "Stop & Swap" program that lets you take partially used home, garden, and automobile products free of charge. There are four HHWCCs in Orange County:

Anaheim:.....1071 N. Blue Gum St
Huntington Beach:.....17121 Nichols St
Irvine:..... 6411 Oak Canyon
San Juan Capistrano:... 32250 La Pata Ave

Centers are open Tuesday-Saturday, 9 a.m.-3 p.m. Centers are closed on rainy days and major holidays. For more information, call **(714) 834-6752** or visit **www.oclandfills.com.**

Common household hazardous wastes

- Batteries
- Paint and paint products
- Adhesives
- Drain openers
- Household cleaning products
- Wood and metal cleaners and polishes
- Pesticides
- Fungicides/wood preservatives
- Automotive products (antifreeze, motor oil, fluids)
- Grease and rust solvents
- Fluorescent lamps
- Mercury (thermometers & thermostats)
- All forms of electronic waste including computers and microwaves
- Pool & spa chemicals
- Cleaners
- Medications
- Propane (camping & BBQ)
- Mercury-containing lamps
- Television & monitors (CRTs, flatscreens)

Tips for household hazardous waste

- Never dispose of HHW in the trash, street, gutter, storm drain or sewer.
- Keep these materials in closed, labeled containers and store materials indoors or under a cover.
- When possible, use non-hazardous products.
- Reuse products whenever possible or share with family and friends.
- Purchase only as much of a product as you'll need. Empty containers may be disposed of in the trash.
- HHW can be harmful to humans, pets and the environment. Report emergencies to 911.





Did you know that just one quart of oil can pollute 250,000 gallons of water?

A clean ocean and healthy creeks, rivers, bays and beaches are important to Orange County. However, not properly disposing of used oil can lead to water pollution. If you pour or drain oil onto driveways, sidewalks or streets, it can be washed into the storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering the ocean. Help prevent water pollution by taking your used oil to a used oil collection center.

Included in this brochure is a list of locations that will accept up to five gallons of used motor oil at no cost. Many also accept used oil filters. Please contact the facility before delivering your used oil. This listing of companies is for your reference and does not constitute a recommendation or endorsement of the company.

Please note that used oil filters may not be disposed of with regular household trash. They must be taken to a household hazardous waste collection or recycling center in Anaheim, Huntington Beach, Irvine or San Juan Capistrano. For information about these centers, visit www.oclandfills.com.

Please do not mix your oil with other substances!

For more information, please call the Orange County Stormwater Program at 1-877-89-SPILL (1-877-897-7455) or visit www.watersheds.com.

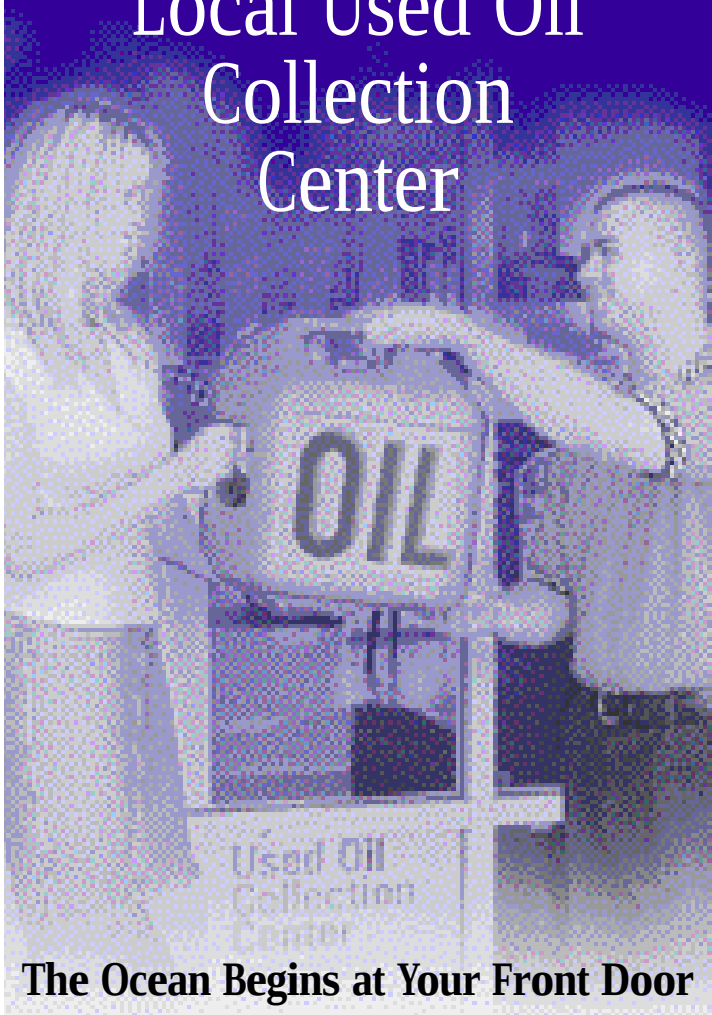
For information about the proper disposal of household hazardous waste, call the Household Waste Hotline at (714) 834-6752 or visit www.oclandfills.com.

RECYCLE USED OIL

For additional information about the nearest oil recycling center, call the Used Oil Program at 1-800-CLEANUP or visit www.cleanup.org.

Help Prevent Ocean Pollution:

Recycle at Your Local Used Oil Collection Center



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

SOUTH COUNTY

Used Oil Collection Centers

ALISO VIEJO

Big O Tires
27812 Aliso Creek Rd, Suite E-100
(949) 362-4225

Econo Lube N' Tune
22932 Glenwood Dr.
(949) 643-9667

Jiffy Lube
27832 Aliso Creek Road
(949) 362-0005

Pep Boys
26881 Aliso Creek Road
(949) 362-9254

DANA POINT

Dana Point Fuel Dock
34661 Puerto Pl. (949) 496-6113

EZ Lube Inc.
34242 Doheny Park Rd.
(949) 477-1223

FOOTHILL RANCH

USA Express Tire & Service
26492 Town Center Dr.
(714) 826-1001

LAGUNA BEACH

USA Express Tire & Service Inc.
350 Broadway (949) 494-7111

LAKE FOREST

Big O Tires
20742 Lake Forest Dr.
(949) 443-4155

EZ Lube
26731 Rancho Parkway
(949) 465-9912

Firestone Store
24421 Rockfield Blvd.
(949) 581-2660

Jiffy Lube
20781 Lake Forest Dr.
(949) 583-0470

Kragen Auto Parts
24601 Raymond Way
(949) 829-8292

Pep Boys
22671 Lake Forest Dr.
(949) 855-9593

Ryan's Foothill Ranch Transmission
20622 Pascal Way (949) 770-6888

USA Express Tire & Service
24561 Trabuco Rd (949) 454-8001

LAGUNA NIGUEL

Econo Lube N Tune
27912 Forbes Rd. (949) 364-5833

Laguna Niguel Auto Center
26042 Cape Dr. #12
(949) 582-2191

LAGUNA HILLS

David J Phillips Buick
24888 Alicia Pkwy.
(949) 831-0434

EZ Lube
24281 Moulton Pkwy.
(949) 830-9840

EZ Lube
26921 Moulton Pkwy.
(949) 751-3436

Kragen Auto Parts
26562 Moulton Ave.
(949) 831-0434

Firestone Store
24196 Laguna Hills Mall
(949) 581-4700

MISSION VIEJO

AAA Complete Auto Care & Tire
27913 Center Street
(949) 347-8200

Autobahn West
25800 Jeronimo Rd. Suite 401
(949) 770-2312

Auto Zone
22942 Los Alisos (949) 830-8181

Econo Lube & Tune
25902 El Paseo (949) 582-5483

Jiffy Lube
27240 La Paz Rd. (949) 455-0470

Kragen Auto Parts
24510 Alicia Pkwy. (949) 951-9175

Mission Viejo Chevron
27742 Crown Vly. Pkwy.
(949) 364-0137

Oilmax 10 Minute Lube
25800 Jeronimo Rd. #300
(949) 859-9271

Ramona Auto Service
27210 La Paz Rd. (949) 583-1233

RANCHO SANTA MARGARITA

Jiffy Lube
23401 Antonio Parkway
(949) 589-7447

SAN CLEMENTE

EZ Lube
525 Avenida Pico (949) 940-1850

Kragen Auto Parts
1113 S. El Camino Real
(949) 492-9850

Kragen Auto Parts
400 Camino de Estrella
(949) 240-9195

San Clemente Car Wash & Oil
1731 N. El Camino Real
(949) 847-4924

SAN JUAN CAPISTRANO

Saturn of San Juan Capistrano
33033 Camino Capistrano
(949) 248-5411

Texaco Xpress Lube
27201 Ortega Hwy.
(949) 489-8008

This information was provided by the County of Orange Integrated Waste Management Department and the California Integrated Waste Management Board (CIWMB).



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities such as pest control can lead to water pollution if you're not careful. Pesticide treatments must be planned and applied properly to ensure that pesticides do not enter the street, gutter or storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never dump pesticides into the ocean, so don't let it enter the storm drains. Pesticides can cause significant damage to our environment if used improperly. If you are thinking of using a pesticide to control a pest, there are some important things to consider.

For more information,
please call
University of California Cooperative
Extension Master Gardeners at
(714) 708-1646
or visit these Web sites:
www.uccemg.org
www.ipm.ucdavis.edu

For instructions on collecting a specimen sample visit the Orange County Agriculture Commissioner's website at:
http://www.ocagcomm.com/ser_lab.asp

To report a spill, call the
Orange County 24-Hour Water Pollution Problem Reporting Hotline at 1-877-89-SPILL (1-877-897-7455).

For emergencies, dial 911.

Information From:
Cheryl Wilen, Area IPM Advisor; Darren Haver, Watershed Management Advisor; Mary Louise Flint, IPM Education and Publication Director; Pamela M. Geisel, Environmental Horticulture Advisor; Carolyn L. Unruh, University of California Cooperative Extension staff writer. Photos courtesy of the UC Statewide IPM Program and Darren Haver.

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Help Prevent Ocean Pollution:

Responsible Pest Control



Tips for Pest Control

Key Steps to Follow:

Step 1: **Correctly identify the pest (insect, weed, rodent, or disease) and verify that it is actually causing the problem.**



Three life stages of the common lady beetle, a beneficial insect.

This is important because beneficial insects are often mistaken for pests and sprayed with pesticides needlessly.

Consult with a Certified Nursery Professional at a local nursery or garden center or send a sample of the pest to the Orange County Agricultural Commissioner's Office.

Determine if the pest is still present – even though you see damage, the pest may have left.

Step 2: **Determine how many pests are present and causing damage.**



Small pest populations may be controlled more safely using non-pesticide techniques. These include removing food sources, washing off leaves with a strong stream of water, blocking entry into the home using caulking and replacing problem plants with ones less susceptible to pests.

Integrated Pest Management (IPM) usually combines several least toxic pest control methods for long-term prevention and management of pest problems without harming you, your family, or the environment.

UC CE University of California Cooperative Extension

Step 3: **If a pesticide must be used, choose the least toxic chemical.**

Obtain information on the least toxic pesticides that are effective at controlling the target pest from the UC Statewide Integrated Pest Management (IPM) Program's Web site at www.ipm.ucdavis.edu.

Seek out the assistance of a Certified Nursery Professional at a local nursery or garden center when selecting a pesticide. Purchase the smallest amount of pesticide available.

Apply the pesticide to the pest during its most vulnerable life stage. This information can be found on the pesticide label.

Step 4: **Wear appropriate protective clothing.**

Follow pesticide labels regarding specific types of protective equipment you should wear. Protective clothing should always be washed separately from other clothing.

Step 5: **Continuously monitor external conditions when applying pesticides such as weather, irrigation, and the presence of children and animals.**

Never apply pesticides when rain is predicted within the next 48 hours. Also, do not water after applying pesticides unless the directions say it is necessary.

Apply pesticides when the air is still; breezy conditions may cause the spray or dust to drift away from your targeted area.

In case of an emergency call 911 and/or the regional poison control number at (714) 634-5988 or (800) 544-4404 (CA only).

For general questions you may also visit www.calpoison.org.

Step 6: **In the event of accidental spills, sweep up or use an absorbent agent to remove any excess pesticides. Avoid the use of water.**

Be prepared. Have a broom, dust pan, or dry absorbent material, such as cat litter, newspapers or paper towels, ready to assist in cleaning up spills.

Contain and clean up the spill right away. Place contaminated materials in a doubled plastic bag. All materials used to clean up the spill should be properly disposed of according to your local Household Hazardous Waste Disposal site.

Step 7: **Properly store and dispose of unused pesticides.**



Purchase Ready-To-Use (RTU) products to avoid storing large concentrated quantities of pesticides.

Store unused chemicals in a locked cabinet.

Unused pesticide chemicals may be disposed of at a Household Hazardous Waste Collection Center.

Empty pesticide containers should be triple rinsed prior to disposing of them in the trash.

Household Hazardous Waste Collection Center
(714) 834-6752
www.oclandfills.com

PROJECT Pollution PREVENTION

Sewage Spill Regulatory Requirements

Allowing sewage to discharge to a gutter or storm drain may subject you to penalties and/or out-of-pocket costs to reimburse cities or public agencies for clean-up efforts.

Here are the pertinent codes, fines, and agency contact information that apply.

Orange County Stormwater Program
24 Hour Water Pollution Reporting Hotline
1-877-89-SPILL (1-877-897-7455)

- County and city water quality ordinances prohibit discharges containing pollutants.

Orange County Health Care Agency Environmental Health
(714) 433-6419

California Health and Safety Code, Sections 5410-5416

- No person shall discharge raw or treated sewage or other waste in a manner that results in contamination, pollution or a nuisance.
- Any person who causes or permits a sewage discharge to any state waters:
  - must immediately notify the local health agency of the discharge.
  - shall reimburse the local health agency for services that protect the public's health and safety (water-contact receiving waters).
  - who fails to provide the required notice to the local health agency is guilty of a misdemeanor and shall be punished by a fine (between $500–$1,000) and/or imprisonment for less than one year.

Regional Water Quality Control Board
Santa Ana Region (951) 782-4130
San Diego Region (858) 467-2952

- Requires the prevention, mitigation, response to and reporting of sewage spills.

California Office of Emergency Services
(800) 852-7550

California Water Code, Article 4, Chapter 4, Sections 13268-13271
California Code of Regulations, Title 23, Division 3, Chapter 9.2, Article 2, Sections 2250-2260

- Any person who causes or permits sewage in excess of 1,000 gallons to be discharged to state waters **shall immediately notify the Office of Emergency Services.**
- Any person who fails to provide the notice required by this section is **guilty of a misdemeanor** and shall be punished by a fine (less than $20,000) and/or imprisonment for not more than one year.

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Sewage Spill
Reference Guide

Your Responsibilities as a Private Property Owner

Residences
Businesses
Homeowner/Condominium Associations
Federal and State Complexes
Military Facilities



Orange County Sanitation District

Health Care Agency
Environmental Health

PROJECT Pollution PREVENTION
www.ocwatersheds.com

This brochure was designed courtesy of the Orange County Sanitation District (OCSD). For additional information, call (714) 962-2411, or visit their website at www.ocsd.com

What is a Sewage Spill?

Sewage spills occur when the wastewater being transported via underground pipes overflows through a manhole, cleanout or broken pipe. Sewage spills can cause health hazards, damage to homes and businesses, and threaten the environment, local waterways and beaches.

Common Causes of Sewage Spills

Grease builds up inside and eventually blocks sewer pipes. Grease gets into the sewer from food establishments, household drains, as well as from poorly maintained commercial grease traps and interceptors.

Structure problems caused by tree roots in the lines, broken/cracked pipes, missing or broken cleanout caps or undersized sewers can cause blockages.

Infiltration and inflow (I/I) impacts pipe capacity and is caused when groundwater or rainwater enters the sewer system through pipe defects and illegal connections.

You Are Responsible for a Sewage Spill Caused by a Blockage or Break in Your Sewer Lines!

Time is of the essence in dealing with sewage spills. You are required to **immediately**:

Control and minimize the spill. Keep spills contained on private property and out of gutters, storm drains and public waterways by shutting off or not using the water.

Use sandbags, dirt and/or plastic sheeting to prevent sewage from entering the storm drain system.

Clear the sewer blockage. Always wear gloves and wash your hands. It is recommended that a plumbing professional be called for clearing blockages and making necessary repairs.

Always notify your city sewer/public works department or public sewer district of sewage spills. If the spill enters the storm drains also notify the Health Care Agency. In addition, if it exceeds 1,000 gallons notify the Office of Emergency Services. Refer to the numbers listed in this brochure.



Overflowing cleanout pipe located on private property

You Could Be Liable

Allowing sewage from your home, business or property to discharge to a gutter or storm drain may subject you to penalties and/or out-of-pocket costs to reimburse cities or public agencies for clean-up and enforcement efforts. See Regulatory Codes & Fines section for pertinent codes and fines that apply.

What to Look For

Sewage spills can be a very noticeable gushing of water from a manhole or a slow water leak that may take time to be noticed. Don't dismiss unaccounted-for wet areas.

Look for:

- Drain backups inside the building.
- Wet ground and water leaking around manhole lids onto your street.
- Leaking water from cleanouts or outside drains.
- Unusual odorous wet areas: sidewalks, external walls or ground/landscape around a building.

Caution

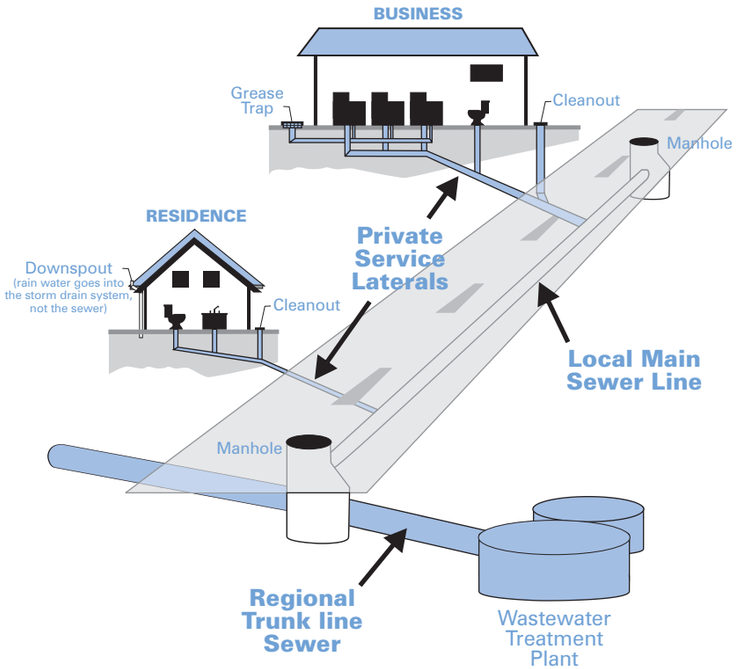
Keep people and pets away from the affected area. Untreated sewage has high levels of disease-causing viruses and bacteria. Call your local health care agency listed on the back for more information.

If You See a Sewage Spill Occurring, Notify Your City Sewer/Public Works Department or Public Sewer District IMMEDIATELY!

How a Sewer System Works

A property owner's sewer pipes are called service laterals and are connected to larger local main and regional trunk lines. Service laterals run from the connection at the home to the connection with the public sewer (including the area under the street). These laterals are the responsibility of the property owner and must be maintained by the property owner. Many city agencies have adopted ordinances requiring maintenance of service laterals. Check with your city sewer/local public works department for more information.

Operation and maintenance of **local and regional sewer lines** are the responsibility of the city sewer/public works departments and public sewer districts.



How You Can Prevent Sewage Spills

1. **Never put grease down garbage disposals, drains or toilets.**
2. **Perform periodic cleaning to eliminate grease, debris and roots in your service laterals.**
3. **Repair any structural problems in your sewer system and eliminate any rainwater infiltration/inflow leaks into your service laterals.**



Preventing Grease Blockages

The drain is not a dump! Recycle or dispose of grease properly and never pour grease down the drain.

Homeowners should mix fats, oils and grease with absorbent waste materials such as paper, coffee grounds, or kitty litter and place it in the trash. Wipe food scraps from plates and pans and dump them in the trash.

Restaurants and commercial food service establishments should always use "Kitchen Best Management Practices." These include:

- Collecting all cooking grease and liquid oil from pots, pans and fryers in covered grease containers for recycling.
- Scraping or dry-wiping excess food and grease from dishes, pots, pans and fryers into the trash.
- Installing drain screens on all kitchen drains.
- Having spill kits readily available for cleaning up spills.
- Properly maintaining grease traps or interceptors by having them serviced regularly. Check your local city codes.

Orange County Agency Responsibilites

- **City Sewer/Public Works Departments—** Responsible for protecting city property and streets, the local storm drain system, sewage collection system and other public areas.
- **Public Sewer/Sanitation District—** Responsible for collecting, treating and disposing of wastewater.
- **County of Orange Health Care Agency—** Responsible for protecting public health by closing ocean/bay waters and may close food-service businesses if a spill poses a threat to public health.
- **Regional Water Quality Control Boards—** Responsible for protecting State waters.
- **Orange County Stormwater Program—** Responsible for preventing harmful pollutants from being discharged or washed by stormwater runoff into the municipal storm drain system, creeks, bays and the ocean.

You Could Be Liable for Not Protecting the Environment

Local and state agencies have legal jurisdiction and enforcement authority to ensure that sewage spills are remedied.

They may respond and assist with containment, relieving pipe blockages, and/or clean-up of the sewage spill, especially if the spill is flowing into storm drains or onto public property.

A property owner may be charged for costs incurred by these agencies responding to spills from private properties.



Report Sewage Spills!

City Sewer/Public Works Departments

Aliso Viejo	(949) 425-2500
Anaheim	(714) 765-6860
Brea	(714) 990-7691
Buena Park	(714) 562-3655
Costa Mesa	(949) 645-8400
Cypress	(714) 229-6760
Dana Point	(949) 248-3562
Fountain Valley	(714) 593-4600
Fullerton	(714) 738-6897
Garden Grove	(714) 741-5375
Huntington Beach	(714) 536-5921
Irvine	(949) 453-5300
Laguna Beach	(949) 497-0765
Laguna Hills	(949) 707-2650
Laguna Niguel	(949) 362-4337
Laguna Woods	(949) 639-0500
La Habra	(562) 905-9792
Lake Forest	(949) 461-3480
La Palma	(714) 690-3310
Los Alamitos	(562) 431-3538
Mission Viejo	(949) 831-2500
Newport Beach	(949) 644-3011
Orange	(714) 532-6480
Orange County	(714) 567-6363
Placentia	(714) 993-8245
Rancho Santa Margarita	(949) 635-1800
San Clemente	(949) 366-1553
San Juan Capistrano	(949) 443-6363
Santa Ana	(714) 647-3380
Seal Beach	(562) 431-2527
Stanton	(714) 379-9222
Tustin	(714) 962-2411
Villa Park	(714) 998-1500
Westminster	(714) 893-3553
Yorba Linda	(714) 961-7170

Public Sewer/Water Districts

Costa Mesa Sanitary District	(714) 393-4433/ (949) 645-8400
El Toro Water District	(949) 837-0660
Emerald Bay Service District	(949) 494-8571
Garden Grove Sanitary District	(714) 741-5375
Irvine Ranch Water District	(949) 453-5300
Los Alamitos/Rossmoor Sewer District	(562) 431-2223
Midway City Sanitary District (Westminster)	(714) 893-3553
Moulton Niguel Water District	(949) 831-2500
Orange County Sanitation District	(714) 962-2411
Santa Margarita Water District	(949) 459-6420
South Coast Water District	(949) 499-4555
South Orange County Wastewater Authority	(949) 234-5400
Sunset Beach Sanitary District	(562) 493-9932
Trabuco Canyon Sanitary District	(949) 858-0277
Yorba Linda Water District	(714) 777-3018

Other Agencies

Orange County Health Care Agency	(714) 433-6419
Office of Emergency Services	(800) 852-7550



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Home improvement projects and work sites must be maintained to ensure that building materials do not enter the street, gutter or storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never dump building materials into the ocean, so don't let them enter the storm drains. Follow these tips to help prevent water pollution.

For more information,
please call the
Orange County Stormwater Program
at **1-877-89-SPILL** (1-877-897-7455)
or visit
www.ocwatersheds.com

To report a spill,
call the
Orange County 24-Hour
Water Pollution Problem
Reporting Hotline
at **1-877-89-SPILL** (1-877-897-7455).

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while performing home improvement projects. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

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Help Prevent Ocean Pollution:

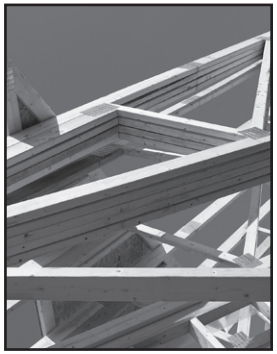
Tips for Home Improvement Projects



Tips for Home Improvement Projects

Home improvement projects can cause significant damage to the environment. Whether you hire a contractor or work on the house yourself, it is important to follow these simple tips while renovating, remodeling or improving your home:

General Construction



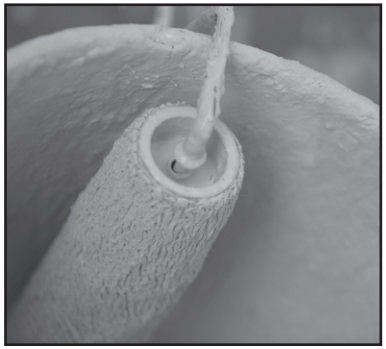
- Schedule projects for dry weather.
- Keep all construction debris away from the street, gutter and storm drain.
- Store materials under cover with temporary roofs or plastic sheets to eliminate or reduce the possibility that rainfall, runoff or wind will carry materials from the project site to the street, storm drain or adjacent properties.

Building Materials

- Never hose materials into a street, gutter or storm drain.
- Exposed piles of construction material should not be stored on the street or sidewalk.
- Minimize waste by ordering only the amount of materials needed to complete the job.
- Do not mix more fresh concrete than is needed for each project.
- Wash concrete mixers and equipment in a designated washout area where the water can flow into a containment area or onto dirt.
- Dispose of small amounts of dry excess materials in the trash. Powdery waste, such as dry concrete, must be properly contained within a box or bag prior to disposal. Call your local trash hauler for weight and size limits.

Paint

- Measure the room or object to be painted, then buy only the amount needed.
- Place the lid on firmly and store the paint can upside-down in a dry location away from the elements.
- Tools such as brushes, buckets and rags should never be washed where excess water can drain into the street, gutter or storm drain. All tools should be rinsed in a sink connected to the sanitary sewer.
- When disposing of paint, never put wet paint in the trash.
- Dispose of water-based paint by removing the lid and letting it dry in the can. Large amounts must be taken to a Household Hazardous Waste Collection Center (HHWCC).



- Oil-based paint is a household hazardous waste. All leftover paint should be taken to a HHWCC.
- For HHWCC locations and hours, call **(714) 834-6752** or visit **www.oclandfills.com**.

Erosion Control

- Schedule grading and excavation projects for dry weather.
- When temporarily removing soil, pile it in a contained, covered area where it cannot spill into the street, or obtain the required temporary encroachment or street closure permit and follow the conditions instructed by the permit.
- When permanently removing large quantities of soil, a disposal location must be found prior to excavation. Numerous businesses are available to handle disposal needs. For disposal options, visit **www.ciwmb.ca.gov/SWIS**.
- Prevent erosion by planting fast-growing annual and perennial grasses. They will shield and bind the soil.

Recycle

- Use a construction and demolition recycling company to recycle lumber, paper, cardboard, metals, masonry (bricks, concrete, etc.), carpet, plastic, pipes (plastic, metal and clay), drywall, rocks, dirt and green waste.



- For a listing of construction and demolition recycling locations in your area, visit **www.ciwmb.ca.gov/recycle.**

Spills

- Clean up spills immediately by using an absorbent material such as cat litter, then sweep it up and dispose of it in the trash.
- Immediately report spills that have entered the street, gutter or storm drain to the County's 24-Hour Water Pollution Problem Reporting Hotline at **(714) 567-6363** or visit **www.ocwatersheds.com** to fill out an incident reporting form.

PROJECT Pollution PREVENTION



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Fertilizers, pesticides and other chemicals that are left on yards or driveways can be blown or washed into storm drains that flow to the ocean. Overwatering lawns can also send materials into storm drains. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never pour gardening products into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information,
please call the
Orange County Stormwater Program
at **1-877-89-SPILL** (1-877-897-7455)
or visit
www.ocwatersheds.com

UCCE Master Gardener Hotline:
(714) 708-1646

To report a spill,
call the
Orange County 24-Hour
Water Pollution Problem
Reporting Hotline
1-877-89-SPILL (1-877-897-7455).

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while landscaping or gardening. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

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Help Prevent Ocean Pollution:

Tips for Landscape & Gardening



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Tips for Landscape & Gardening

Never allow gardening products or polluted water to enter the street, gutter or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.
- Plant native vegetation to reduce the amount of water, fertilizers, and pesticide applied to the landscape.



- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.

Garden & Lawn Maintenance

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro spray systems. 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 green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.



- Use slow-release fertilizers to minimize leaching, and use organic fertilizers.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.



- Rinse empty pesticide containers and re-use rinse water as you would use the product. Do not dump rinse water down storm drains. Dispose of empty containers in the trash.
- When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting. For more information, visit **www.ipm.ucdavis.edu**.
- If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply an absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.
- Take unwanted pesticides to a Household Hazardous Waste Collection Center to be recycled. Locations are provided below.

Household Hazardous Waste Collection Centers

Anaheim:	1071 N. Blue Gum St.
Huntington Beach:	17121 Nichols St.
Irvine:	6411 Oak Canyon
San Juan Capistrano:	32250 La Pata Ave.

For more information, call (714) 834-6752 or visit www.oclandfills.com



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Pet waste and pet care products can be washed into the storm drains that flow to the ocean. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never put pet waste or pet care products into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information,
please call the
Orange County Stormwater Program
at **1-877-89-SPILL** (1-877-897-7455)
or visit
www.ocwatersheds.com

To report a spill,
call the
Orange County 24-Hour Water Pollution Problem Reporting Hotline
1-877-89-SPILL (1-877-897-7455).

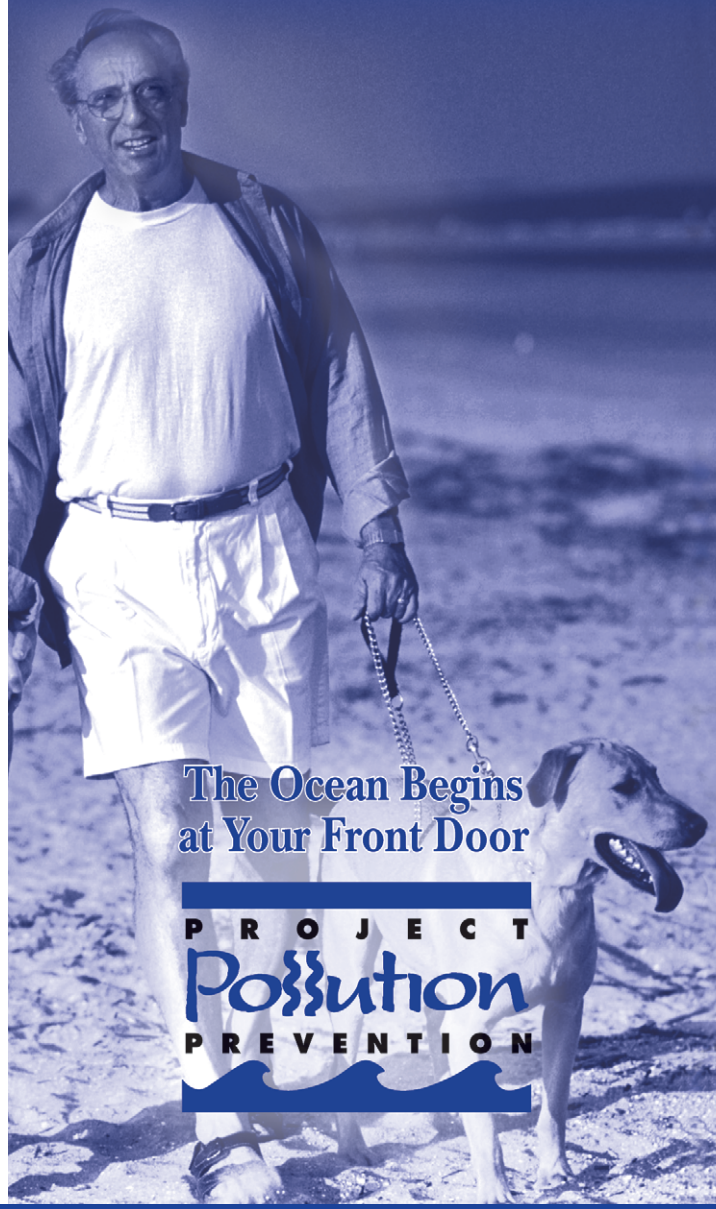
For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while caring for your pet. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

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Help Prevent Ocean Pollution:

Tips for Pet Care



Tips for Pet Care

Never let any pet care products or washwater run off your yard and into the street, gutter or storm drain.

Washing Your Pets

Even biodegradable soaps and shampoos can be harmful to marine life and the environment.

- If possible, bathe your pets indoors using less-toxic shampoos or have your pet professionally groomed. Follow instructions on the products and clean up spills.

- If you bathe your pet outside, wash it on your lawn or another absorbent/ permeable surface to keep the washwater from running into the street, gutter or storm drain.



Flea Control

- Consider using oral or topical flea control products.

- If you use flea control products such as shampoos, sprays or collars, make sure to dispose of any unused products at a Household Hazardous Waste Collection Center. For location information, call **(714) 834-6752**.



Why You Should Pick Up After Your Pet

It's the law! Every city has an ordinance requiring you to pick up after your pet. Besides being a nuisance, pet waste can lead to water pollution, even if you live inland. During rainfall, pet waste left outdoors can wash into storm drains. This waste flows directly into our waterways and the ocean where it can harm human health, marine life and the environment.



As it decomposes, pet waste demands a high level of oxygen from water. This decomposition can contribute to killing marine life by reducing the amount of dissolved oxygen available to them.



Have fun with your pets, but please be a responsible pet owner by taking care of them and the environment.

- Take a bag with you on walks to pick up after your pet.

- Dispose of the waste in the trash or in a toilet.

PROJECT Pollution PREVENTION



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities such as painting can lead to water pollution if you're not careful. Paint must be used, stored and disposed of properly to ensure that it does not enter the street, gutter or storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never dump paint into the ocean, so don't let it enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information,
please call the
Orange County Stormwater Program
at **1-877-89-SPILL** (1-877-897-7455)
or visit
www.ocwatersheds.com

To report a spill,
call the
Orange County 24-Hour Water Pollution Problem Reporting Hotline
at **1-877-89-SPILL** (1-877-897-7455).

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while using, storing and disposing of paint. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

Printed on Recycled Paper

Help Prevent Ocean Pollution:

Tips for Projects Using Paint



Tips for Projects Using Paint

Paint can cause significant damage to our environment. Whether you hire a contractor or do it yourself, it is important to follow these simple tips when purchasing, using, cleaning, storing and disposing of paint.

Purchasing Paint

- Measure the room or object to be painted, then buy only the amount needed.
- Whenever possible, use water-based paint since it usually does not require hazardous solvents such as paint thinner for cleanup.

Painting

- Use only one brush or roller per color of paint to reduce the amount of water needed for cleaning.
- Place open paint containers or trays on a stable surface and in a position that is unlikely to spill.
- Always use a tarp under the area or object being painted to collect paint drips and contain spills.

Cleaning

- Never clean brushes or rinse paint containers in the street, gutter or storm drain.
- For oil-based products, use as much of the paint on the brushes as possible. Clean brushes with thinner. To reuse thinner, pour it through a fine filter (e.g. nylon, metal gauze or filter paper) to remove solids such as leftover traces of paint.
- For water-based products, use as much of the paint on the brushes as possible, then rinse in the sink.
- Collect all paint chips and dust. Chips and dust from marine paints or paints containing lead, mercury or tributyl tin are hazardous waste. Sweep up and dispose of at a Household Hazardous Waste Collection Center (HHWCC).

Storing Paint

- Store paint in a dry location away from the elements.
- Store leftover water-based paint, oil-based paint and solvents separately in original or clearly marked containers.
- Avoid storing paint cans directly on cement floors. The bottom of the can will rust much faster on cement.
- Place the lid on firmly and store the paint can upside-down to prevent air from entering. This will keep the paint usable longer. Oil-based paint is usable for up to 15 years. Water-based paint remains usable for up to 10 years.

Alternatives to Disposal

- Use excess paint to apply another coat, for touch-ups, or to paint a closet, garage, basement or attic.
- Give extra paint to friends or family. Extra paint can also be donated to a local theatre group, low-income housing program or school.
- Take extra paint to an exchange program such as the **"Stop & Swap"** that allows you to drop off or pick up partially used home care products free of charge. **"Stop & Swap"** programs are available at most HHWCCs.
- For HHWCC locations and hours, call **(714) 834-6752** or visit **www.oclandfills.com**.



Disposing of Paint

- Never put wet paint in the trash.

For water-based paint:

- If possible, brush the leftover paint on cardboard or newspaper. Otherwise, allow the paint to dry in the can with the lid off in a well-ventilated area protected from the elements, children and pets. Stirring the paint every few days will speed up the drying.
- Large quantities of extra paint should be taken to a HHWCC.
- Once dried, paint and painted surfaces may be disposed of in the trash. When setting a dried paint can out for trash collection, leave the lid off so the collector will see that the paint has dried.

For oil-based paint:

- Oil-based paint is a household hazardous waste. All leftover paint should be taken to a HHWCC.

Aerosol paint:

- Dispose of aerosol paint cans at a HHWCC.

Spills

- Never hose down pavement or other impermeable surfaces where paint has spilled.
- Clean up spills immediately by using an absorbent material such as cat litter. Cat litter used to clean water-based paint spills can be disposed of in the trash. When cleaning oil-based paint spills with cat litter, it must be taken to a HHWCC.
- Immediately report spills that have entered the street, gutter or storm drain to the County's 24-Hour Water Pollution Problem Reporting Hotline at **(714) 567-6363** or visit **www.ocwatersheds.com** to fill out an incident reporting form.

PROJECT Pollution PREVENTION



Clean beaches and healthy creeks, rivers, bays, and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Materials and excess concrete or mortar can be blown or washed into the storm drains that flow to the ocean. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never throw building materials into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

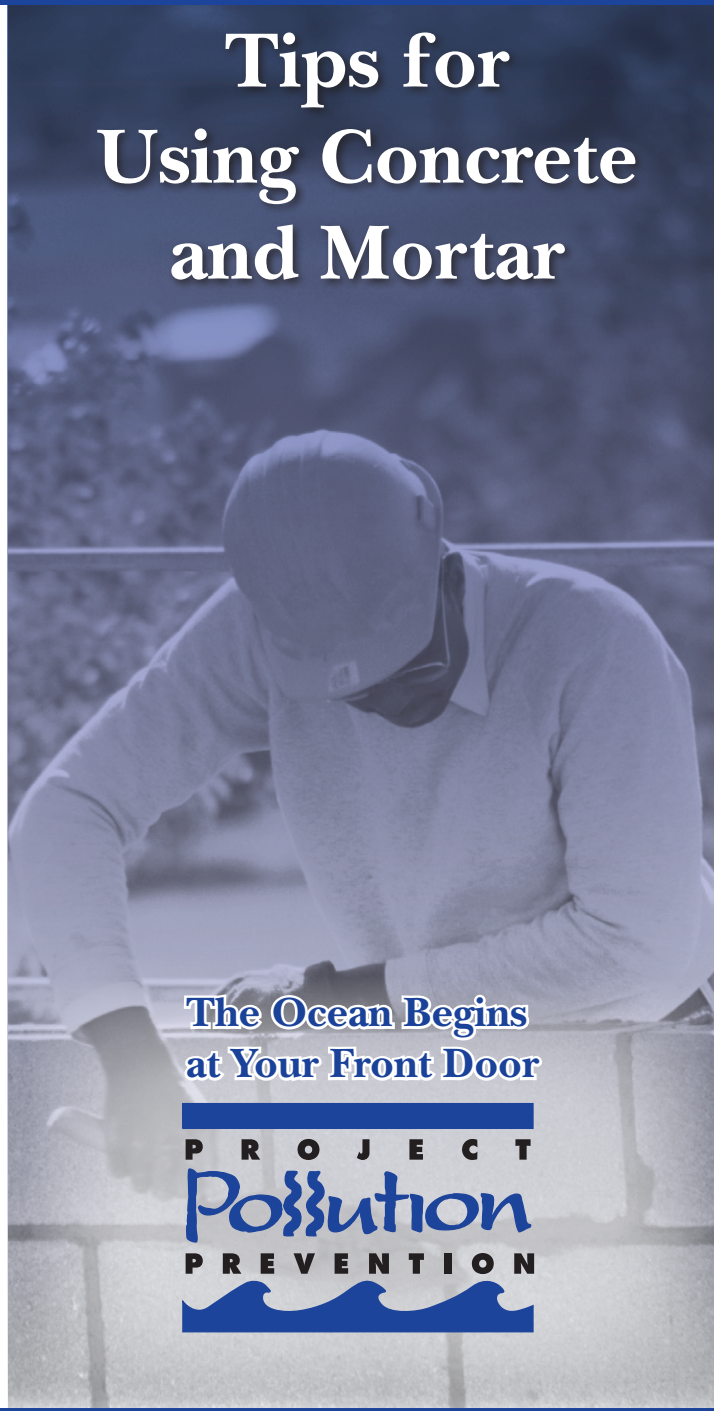
For more information, please call the **Orange County Stormwater Program** at **1-877-89-SPILL** (1-877-897-7455) or visit **www.ocwatersheds.com.**

To report a spill, call the **Orange County 24-Hour Water Pollution Reporting Hotline** at **1-877-89-SPILL** (1-877-897-7455).

For emergencies, dial 911.

The Tips contained in this brochure provide useful information about how you can keep materials and washwater from entering the storm drain system. If you have other suggestions for how water and materials may be contained, please contact your city's stormwater representative or call the Orange County Stormwater Program.

Tips for Using Concrete and Mortar



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Tips for Using Concrete and Mortar

Never allow materials or washwater to enter the street or storm drain.

Before the Project

- Schedule projects for dry weather.
- Store materials under cover, with temporary roofs or plastic sheets, to eliminate or reduce the possibility that the materials can be carried from the project site to streets, storm drains or adjacent properties via rainfall, runoff or wind.
- Minimize waste by ordering only the amount of materials needed to complete the job.
- Take measures to block nearby storm drain inlets.

During the Project

- Set up and operate small mixers on tarps or heavy drop cloths.
- Do not mix more fresh concrete or cement than is needed for the job.



- When breaking up pavement, pick up all chunks and pieces and recycle them at a local construction and demolition recycling company. (See information to the right)
- When making saw cuts in pavement, protect nearby storm drain inlets during the saw-cutting operation and contain the slurry. Collect the slurry residue from the pavement or gutter and remove from the site.



Clean-Up

- Dispose of small amounts of dry concrete, grout or mortar in the trash.
- Never hose materials from exposed aggregate concrete, asphalt or similar treatments into a street, gutter, parking lot, or storm drain.
- Wash concrete mixers and equipment in designated washout areas where the water can flow into a containment area or onto dirt. Small amounts of dried material can be disposed of in the trash. Large amounts should be recycled at a local construction and demolition recycling company. (See information below)



- Recycle cement wash water by pumping it back into cement mixers for reuse.

Spills

- Never hose down pavement or impermeable surfaces where fluids have spilled. Use an absorbent material such as cat litter to soak up a spill, then sweep and dispose in the trash.
- Clean spills on dirt areas by digging up and properly disposing of contaminated dry soil in trash.
- Immediately report significant spills to the County's 24-Hour Water Pollution Problem Reporting Hotline at 714-567-6363 or log onto the County's website at www.ocwatersheds.com and fill out an incident reporting form.

For a list of construction and demolition recycling locations in your area visit www.ciwmb.ca.gov/Recycle/.

For additional information on how to control, prevent, remove, and reduce pollution refer to the Stormwater Best Management Practice Handbook, available on-line at www.cabmphandbooks.com.

Attachment B

Susceptibility Analysis Anaheim Bay- Huntington Harbor
Map Figure 2

Susceptibility

Potential Areas of Erosion, Habitat, & Physical Structure Susceptibility

Channel Type

Earth (Unstable)
Earth (Stabilized)
Stabilized

Tidel Influence

<= Mean High Water Line (4.28')

Water Body

Basin
Lake

Federal & Other Lands

Seal Beach National Wildlife Refuge
Airports/Military

San Gabriel-Coyote Creek

Los Alamitos Naval Air Station

Seal Beach Naval Weapons Station

Seal Beach National Wildlife Refuge

West Street Retarding Basin

Haster Retarding Basin

Newland Retarding Basin

Lake Huntington

Project Site

Santa Ana River

Newport Bay

John Wayne Airport

0 6,500 13,000 Feet

TITLE
SUSCEPTIBILITY ANALYIS
ANAHEIM BAY-
HUNTINGTON HARBOR

JOB
ORANGE COUNTY
WATERSHED
MASTER PLANNING
ORANGE CO. CA

SCALE	1" = 6500'
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	04/22/10
JOB NO.	9526-E

PACE
Advanced Water Engineering

FIGURE
2

P:\9526E\6-GIS\Mxds\Workspace\SusceptibleAnalysis_20100422\9526E_AnaheimBay_20100331.mxd

Attachment C

Rainfall Zones Figure XVI-1

SUBJECT TO FURTHER REVISION

LEGEND

- Orange County Precipitation Stations
- 24 Hour, 85th Percentile Rainfall (Inches)
- 24 Hour, 85th Percentile Rainfall (Inches) - Extrapolated
- City Boundaries

Rainfall Zones

Design Capture Storm Depth (inches)

- 0.65"
- 0.7
- 0.75
- 0.80
- 0.85
- 0.90
- 0.95
- 1.00
- 1.10"

Note: Events defined as 24-hour periods (calendar days) with greater than 0.1 inches of rainfall.
For areas outside of available data coverage, professional judgment shall be applied.

Project Site

0 3 6 12 Kilometers
0 1.8 3.6 7.2 Miles

P:\9526E\6-GIS\Mxds\Reports\InfiltrationFeasability_20110215\9526E_FigureXVI-1_RainfallZones_20110215.mxd

TITLE: RAINFALL ZONES

ORANGE COUNTY
TECHNICAL GUIDANCE
DOCUMENT

JOB: ORANGE CO. CA

SCALE	1" = 1.8 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	04/22/10
JOB NO.	9526-E

PACE
Advanced Water Engineering

FIGURE
XVI-1

Attachment D

North Orange County Mapped Shallow Groundwater
Figure XVI-2e

SUBJECT TO FURTHER REVISION

LEGEND

- City Boundaries
- OCWD Groundwater Basin Protection Boundary

Depth To Groundwater

- <= 5'
- 5-10'

Note: Data are not available for South Orange County at this time.

Source:
Sprotte, Fuller and Greenwood, 1980.
California Division of Mines and Geology;
California Geological Survey

LOS ANGELES COUNTY
ORANGE COUNTY

SAN BERNARDINO COUNTY
ORANGE COUNTY

RIVERSIDE COUNTY
ORANGE COUNTY

LOS ANGELES COUNTY
ORANGE COUNTY

Project Site

0 2 4 8 Kilometers

0 1.25 2.5 5 Miles

TITLE
NORTH ORANGE COUNTY
MAPPED SHALLOW GROUNDWATER

ORANGE COUNTY
INFILTRATION STUDY

CA

JOB
ORANGE CO.

SCALE	1" = 1.25 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	02/09/11
JOB NO.	9526-E

PACE
Advanced Water Engineering

FIGURE
XVI-2e

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Attachment E

NRCS Hydrologic Soils Group Map Figure XVI-2a

SUBJECT TO FURTHER REVISION

LEGEND

City Boundaries

Hydrologic Soil Groups

- A Soils
- B Soils
- C Soils
- D Soils

Source:
Soils: Natural Resources Conservation Service (NRCS)
Soil Survey - soil_ca678, Orange County & Western Riverside
Date of publication: 2006-02-08
http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

Project Site

LOS ANGELES COUNTY
ORANGE COUNTY
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY

Pacific Ocean
San Pedro Channel

0 2.5 5 10 Kilometers
0 1.8 3.6 7.2 Miles

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TITLE
NRCS HYDROLOGIC SOILS GROUPS

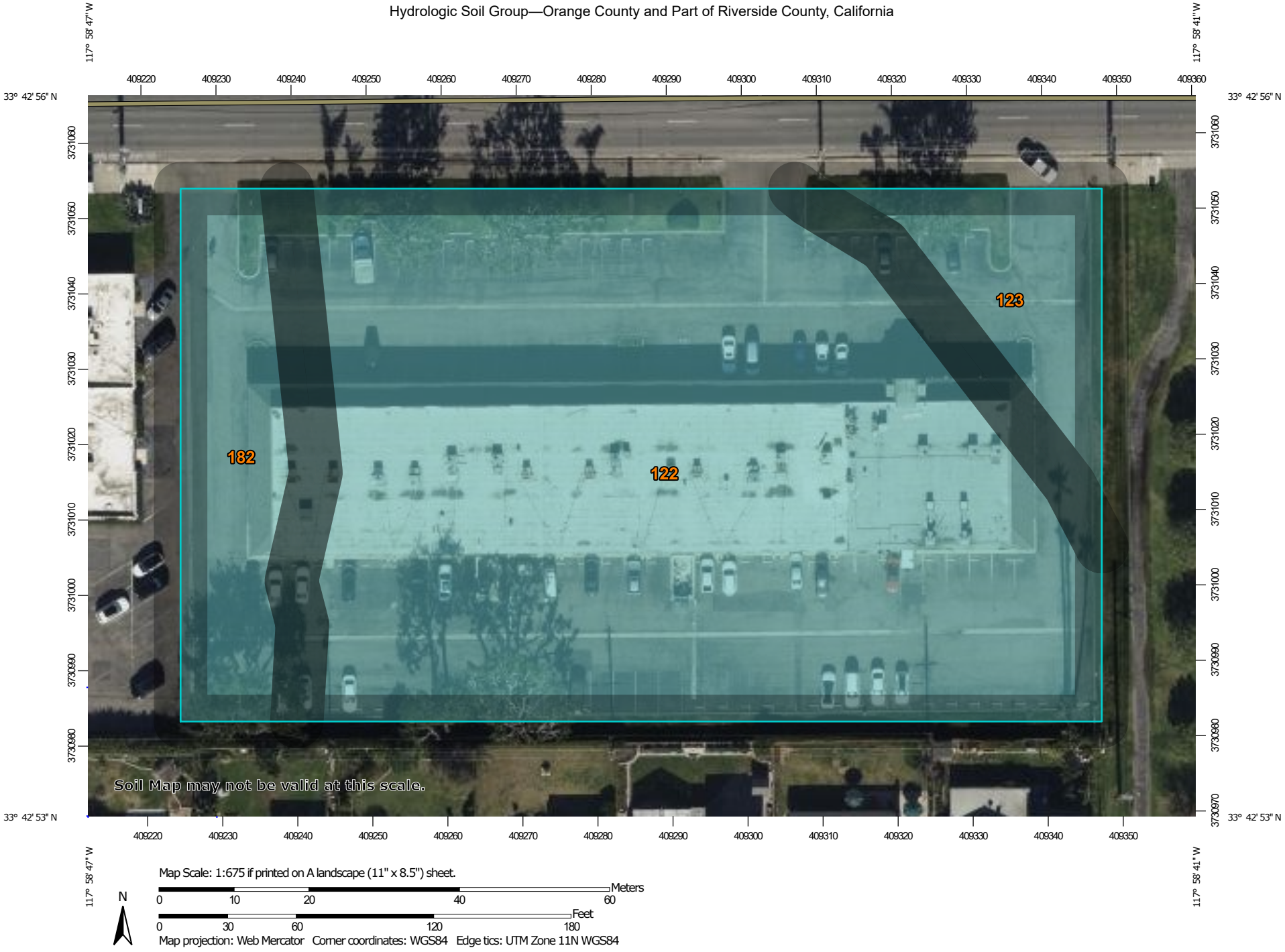
ORANGE COUNTY INFILTRATION STUDY

JOB
ORANGE CO. CA

SCALE	1" = 1.8 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	02/09/11
JOB NO.	9526-E

PACE
Advanced Water Engineering

FIGURE
XVI-2a



Map Scale: 1:675 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 10 20 40 60

Feet
0 30 60 120 180

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orange County and Part of Riverside County, California
Survey Area Data: Version 17, Aug 30, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 17, 2023—Feb 8, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
122	Bolsa silt loam	C	1.7	77.6%
123	Bolsa silt loam, drained	C	0.2	9.3%
182	Omni silt loam, drained	C	0.3	13.1%
Totals for Area of Interest			**2.2**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Attachment F

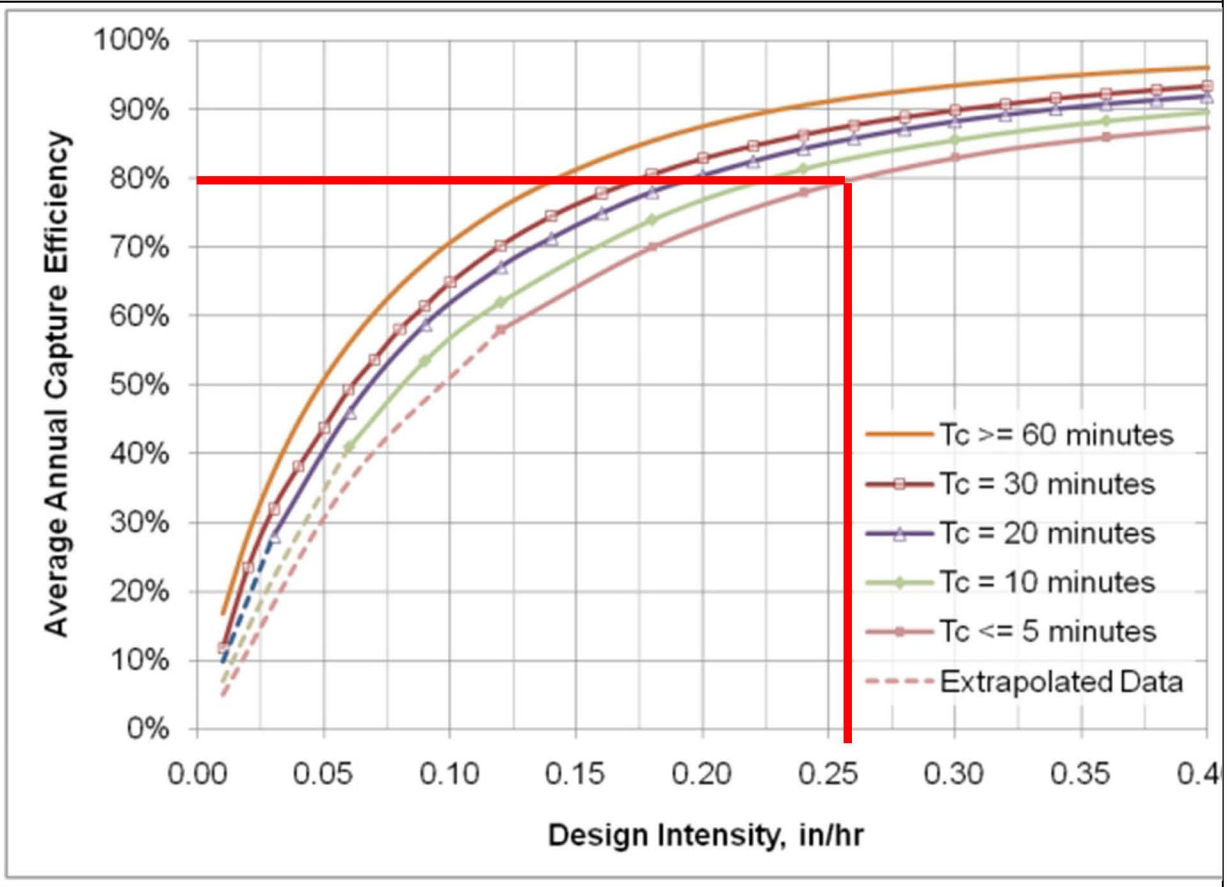
Worksheet D: Capture Efficiency Method for Flow-Based BMPs

Worksheet D: Capture Efficiency Method for Flow-Based BMPs

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter the time of concentration, T_c (min) (See Appendix IV.2)	T_c=	5	
2	Using Figure III.4, determine the design intensity at which the estimated time of concentration (T_c) achieves 80% capture efficiency, I_1	I_1=	0.26	in/hr
3	Enter the effect depth of provided HSCs upstream, d_{HSC} (inches) (Worksheet A)	d_{HSC}=	0	inches
4	Enter capture efficiency corresponding to d_{HSC}, Y_2 (Worksheet A)	Y_2=	0	%
5	Using Figure III.4, determine the design intensity at which the time of concentration (T_c) achieves the upstream capture efficiency(Y_2), I_2	I_2=	0	
6	Determine the design intensity that must be provided by BMP, $_{design}= I_1-I_2$	I_{design}=	0.26	
Step 2: Calculate the design flowrate				
1	Enter Project area tributary to BMP (s), *A* (acres)	A=	2.12	acres
2	Enter Project Imperviousness, *imp* (unitless)	imp=	0.795	
3	Calculate runoff coefficient, $C= (0.75 \times imp) + 0.15$	C=	0.746	
4	Calculate design flowrate, $Q_{design}= (C \times i_{design} \times A)$	Q_{design}=	0.411	cfs
Supporting Calculations				
Describe system: The Intensity in item 2 above was determined by the graph on sheet 2 of Attachment F using an a Time of Concentration Tc of 5 min. and and an 80% efficiency.				
Provide time of concentration assumptions:				

Worksheet D: Capture Efficiency Method for Flow-Based BMPs

Graphical Operations



Provide supporting graphical operations. See Example III.7.

Attachment G

Worksheet J: Summary of Harvested Water Demand and Feasibilty

Worksheet J: Summary of Harvested Water Demand and Feasibility

1	What demands for harvested water exist in the tributary area (check all that apply):			
2	Toilet and urinal flushing		☒	
3	Landscape irrigation		☒	
4	Other:_____		☐	
5	What is the design capture storm depth? (Figure III.1)	d	0.75	inches
6	What is the project size? 92,347 S.F.	A	2.12	ac
7	What is the acreage of impervious area? 73,423 S.F.	IA	1.69	ac
	For projects with multiple types of demand (toilet flushing, irrigation demand, and/or other demand)			
8	What is the minimum use required for partial capture? (Table X.6)	610		gpd
9	What is the project estimated wet season total daily use (Section X.2)?	462		gpd
10	Is partial capture potentially feasible? (Line 9 > Line 8?)	No		NOT FEASIBLE
	For projects with only toilet flushing demand			
11	What is the minimum TUTIA for partial capture? (Table X.7)	92 x 1.69 = 156		
12	What is the project estimated TUTIA?	133		
13	Is partial capture potentially feasible? (Line 12 > Line 11?)	No		NOT FEASIBLE
	For projects with only irrigation demand			
14	What is the minimum irrigation area required based on conservation landscape design? (Table X.8)	0.73 x 1.69 = 1.23		ac
15	What is the proposed project irrigated area? (multiply conservation landscaping by 1; multiply active turf by 2)	1.0 x 0.43 = 0.43		ac
16	Is partial capture potentially feasible? (Line 15 > Line 14?)	No		NOT FEASIBLE

Provide supporting assumptions and citations for controlling demand calculation:
Modified EAWU = (EToWet x KL x LA x 0.015) / IE = (2.93 X 0.5 X 18,924 x 0.015) / 0.90 = 462
ETоWet = 2.93 (Santa Ana)
KL = Ks x Kd x Kmc = 0.5 x 1.0 x 1.0 = 0.5
Ks = 0.5, Kd = 1.0, Kmc = 1.0
LA = 18,924 s.f.
IE = 0.90

Attachment H

Operation and Maintenance Plan

Operation & Maintenance (O&M) Plan for WQMP

Project Name:

FV Center, LP

8550 WARNER AVENUE

FOUNTAIN VALLEY, CA 92708

APN 167-361-17

Prepared for:`

FV Center, LP

15261 Transitor Lane

Huntington Beach, CA 92649

(714) 898-7557

Prepared on:

January 8, 2025

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Section 2 Personnel, Documentation, and Reporting 1

2.1 Maintenance Roles and Responsibilities 1
2.2 Qualification and Training Requirements for Personnel 2
2.3 Maintenance Agreements and Funding Mechanisms 3
2.4 Record Keeping Requirements 3
2.5 Required Permits Associated with Maintenance Activities 4
2.6 Self-Reporting Requirements 4
2.7 City Inspections 4
2.8 Electronic Data Submittal 4

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3.2 Inspection and Maintenance of Hydrologic Source Controls 8
3.3 Inspection and Maintenance of Structural LID and Hydromodification BMPs 9
3.4 Emergency Response Plan 11
3.5 Vector Control 12

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Attachment 3: Training Log Form 15

Attachment 4: Inspection and Maintenance Log Form 17

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Section 1 Project Description and BMP Overview

General Project Attributes and Stormwater Control Measures

Site Location	*8550 Warner Avenue approximately 275 feet east of the centerline of Newland Street in the city of Fountain Valley.*	
Project Area (ft^2): 92,347 sf (2.30 Ac)	Number of Dwelling Units: 72	SIC Code: 1522
Narrative Project Description:	The project site is 2.12 acres in size and located on the south side of Warner Avenue in between Newland Street and Ross Street. The proposed buildings are located on the North, East, and West sides of the site, and a proposed club house in the center of the site, all are further described below. Parking is located on the East and South perimeter of the site. The entrance onto the site is located on the west side of the property off of Warren Avenue. Proposed drainage is away from the buildings into the concrete gutters around the clubhouse to the underground drainage system that leads to MWS-L-8-16-V biofiltration system and then exits through the parkway drain and directed to the existing concrete curb and gutter on Warner Avenue.	

Proposed 72 Unit Apartment complex

The apartment complex consists of three floors with 7 floor plan units

First Floor – 17 units

2 – (C1) Studio apartments with balcony = 1,258 s.f.

7 – (A1) One bedroom apartments with balcony = 6,076 s.f.

4 – (B1) Two bedroom apartments with balcony = 4,972 s.f.

2– (B2) Two bedroom apartments with balcony = 2,520 s.f.

2– (B3) Two bedroom apartments with balcony = 2,522 s.f.

Total = 17,348 s.f.

Second Floor –29 units

General Project Attributes and Stormwater Control Measures

2 – (C1) Studio apartments with balcony = 1,258 s.f.

7 – (A1) One bedroom apartments with balcony = 6,076 s.f.

9 – (A2) One bedroom apartments with balcony = 7,794 s.f.

3 – (B1) Two bedroom apartments with balcony = 3,729 s.f.

2– (B2) Two bedroom apartments with balcony = 2,520 s.f.

2– (B3) Two bedroom apartments with balcony = 2,522 s.f.

4– (B3) Two bedroom apartments with balcony = 4,460 s.f.

Total = 21,440 s.f.

Third Floor –26 units

2 – (C1) Studio apartments with balcony = 1,258 s.f.

7 – (A1) One bedroom apartments with balcony = 6,076 s.f.

7 – (A2) One bedroom apartments with balcony = 6,076 s.f.

3 – (B1) Two bedroom apartments with balcony = 3,729 s.f.

2– (B2) Two bedroom apartments with balcony = 2,520 s.f.

1– (B3) Two bedroom apartments with balcony = 1,261 s.f.

4– (B3) Two bedroom apartments with balcony = 4,460 s.f.

Total = 20,177 s.f.

Total entire 72 Units = 71,073 s.f.

Amenity Club House = 820 s.f.

Two Trash enclosures are located on the project

The westerly Trash Enclosure = 212.3 s.f.

The easterly Trash Enclosure = 317.7 s.f.

Total Trash Enclosures S.F. = 530 s.f.

Total Stairs S.F. = 6,840 s.f.

Private Parking Garages = 8,411 s.f.

Carports and Open Parking = 12,089 s.f.

Concrete Hardscape = 8,157 s.f.

Landscaping = 18,294 s.f.

General Project Attributes and Stormwater Control Measures	
	Asphalt pavement drive aisles = 19,228 s.f. Total all first-floor buildings, private garages, trash enclosures, stairs occupied 33,949 s.f. (0.78 Acres) and remaining is concrete walkway, landscaping, asphalt parking and drive aisles. Lot size is 92,347 s.f. = (2.12 Acres). Lot coverage 36.8%.
Project-specific Source Control BMPs	-Spill Prevention, Containment and Control -Illicit Discharge Controls - -Vehicle Maintenance, Fueling and Storage -Use of Pesticides, Herbicides and Fertilizers -Landscape Maintenance -Street Sweeping and Cleaning
Summary of Drainage Patterns	Proposed drainage flows away from the proposed buildings into the concrete V-Gutters. From the concrete V-Gutters the drainage flows into the underground drainage system that eventually leads to the MWS-L-8-16-V. After being cleaned the drainage will exit through the parkway drain to the existing curb and gutter on Warren and flow west to the nearest catch basin.

General Project Attributes and Stormwater Control Measures	
Summary of Hydrologic Source Controls	*N/A*
Structural Treatment and Hydromodification BMPs	A Stormwater BioInfintration System (MWS-L-8-16-V) sized to treat the Design Flow for the Drainage Management Area. Overflow parkway drains are proposed nearby to allow for high flow storm events to pass the BioInfintration System and continue onto Warner Avenue.

BMP ID	BMP Type	Narrative Description	Location	Other Considerations
BMP 1	Stormwater BioInfintration System (MWS-L-8-16-V)	The Modular Wetlands ® is a multi-stage, storm water treatment system that incorporates screening, sedimentation, filtration, adsorption, and biological remediation for removal of trash, floating and neutrally buoyant debris, suspended sediments, nutrients, heavy metals, and hydrocarbons from the storm water.	*Northwest corner of site along Warner Avenue.*	*Infiltration was not feasible onsite above 10' depth.*

Section 2 Personnel, Documentation, and Reporting

2.1 Maintenance Roles and Responsibilities

The roles related to O&M of the BMPs are defined as follows:

- ***Facility Owner*** *– The Facility Owner is the party who is ultimately responsible for the functionality of all BMPs. The maintenance agreement (Attachment 2) identifies the facility owner for each BMP, including the timing of any ownership transitions.*
- ***Responsible Party*** *– The Responsible Party is the party that shall have direct responsibility for the O&M of the BMPs. This party shall be the designated contact with inspectors and lead maintenance personnel. The Responsible Party shall sign self-inspection reports and any correspondence regarding the verification of inspections and required maintenance. The Responsible Party will establish a system to delegate general inquiries to the appropriate maintenance personnel concerning the operation and maintenance of the BMPs. The Responsible Party reports directly to the Facility Owner and operates and manages the BMPs on the Facility Owner's behalf.*
- ***Designated Emergency Respondent*** *– The Designated Emergency Respondent is the party responsible for directing activities and communications during emergencies such as broken irrigation pipes, landslides, hazardous spill responses etc., that would require immediate response should they occur during off-hours. It is the responsibility of the Designated Emergency Respondent to communicate the emergent situation with the Responsible Party as soon as possible.*
- ***Key Maintenance Personnel*** *– Key Maintenance Personnel are the designated lead field manager(s) or supervisor(s) who directly oversee and delegate the maintenance activities, maintain the scheduling, and coordinate activities between all personnel. These tend to change more often than other personnel over time, so their names do not necessarily need to be included in the O&M Plan. However, they must be properly trained as recorded in the training logs (Section 2.2).*

The table below lists the roles for this project. This table must be updated whenever changes occur.

Role	Name (Title and Affiliation)	Phone Number	Address	Email Address
Facility Owner	Robert Stellrecht	(714) 898-7557	15261 Transitor Lane, Huntington Beach, CA 92649	bob@stellrechtcompany.com
Responsible Party	Robert Stellrecht	(714) 898-7557	15261 Transitor Lane, Huntington Beach, CA 92649	bob@stellrechtcompany.com

Designated Emergency Respondent	Robert Stellrecht	(714) 898-7557	15261 Transitor Lane, Huntington Beach, CA 92649	bob@stellrechtcompany.com

2.2 Qualification and Training Requirements for Personnel

Many of the activities presented in this O&M plan can be completed by personnel with basic landscaping and yard maintenance skills and project-specific orientation. However, there are activities that require a more experienced skillset to identify and remediate potential issues that could compromise the functionality of each BMP. The Responsible Party shall exercise discretion in determining the skillset required to complete each task.

Activities that can typically be completed by maintenance personnel with basic training and/or qualifications include:

- General landscaping activities (pruning, weeding, and raking)
- Routine sediment, trash and debris removal;
- Filling in minor scour or erosion areas, or replacing rip rap that has become displaced; and
- Watering or irrigation, as necessary.

Activities that typically require maintenance personnel with specialized qualifications, training, and/or engineering oversight include:

- Inspection and/or repair of inflow and outflow structures;
- Inspection and/or repair of underground elements;
- Large-volume sediment or media removal requiring specialized equipment;
- Inspection, diagnosis, and remediation of significant erosion issues potentially compromising function and/or structural stability; and
- Spill response and remediation.

Maintenance personnel who have identified a potential major issue with any facility should contact the designated key maintenance personnel for the facility immediately.

Training must be provided for all personnel performing maintenance tasks on or providing maintenance oversight of structural BMPs. The table below provides the personnel and relevant training topics.

Training Logs contained in Attachment 3 should be used to document training of maintenance personnel.

Training Topic	Responsible Party	Designated Emergency Respondent	Key Maintenance Personnel
Proper Maintenance of all BMP components	X		X
Identification and clean-up procedures for spills and overflows	X	X	X
Safety concerns when maintaining devices and responding to emergency situations	X	X	X

2.3 Maintenance Agreements and Funding Mechanisms

Maintenance for the BMP's will be privately funded by the owner and scheduled with regulate maintenance and upkeep of the site.

2.4 Record Keeping Requirements

Documentation of site conditions, maintenance activities performed, and any other remaining maintenance required is necessary during each inspection/maintenance visit. Inspection and maintenance records shall be retained in an accessible, secure location for the life of the facility, and not less than 10 years.

The following documentation mechanisms and procedures have been established for this O&M Plan:

- **Training Logs:** Personnel must document training activities as part of implementing this O&M Plan. Attachment 3 contains a sample training log.
- **Inspection and Routine Maintenance Logs:** Maintenance personnel are required to maintain logs of inspection and maintenance activities. Attachment 4 contain inspection and maintenance logs.
- **Rehabilitative and Corrective Maintenance Log and Reporting:** Rehabilitation and corrective maintenance activities should be documented at a degree of detail that is commensurate to the complexity/significance of the activity. Any significant changes to the BMP designs that arise from rehabilitation/corrective maintenance will be documented via an update to the Project WQMP and as-built drawings. Corrective maintenance that does

not result in design changes will be documented as a special entry in the maintenance logs to provide pertinent details of that rehabilitative or corrective maintenance activity.

No monitoring is required

2.5 Required Permits Associated with Maintenance Activities

No permits are required.

2.6 Self-Reporting Requirements

The WQMP Verification Form [See Attached] shall be completed accurately and submitted with associated documentation to the City of Fountain Valley 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.

2.7 City Inspections

The City of Fountain Valley may conduct a site inspection to evaluate compliance with the Project WQMP, at any time.

2.8 Electronic Data Submittal

This document, along with the attachments, shall be provided to the City or County in PDF format. Autocad files and/or GIS coordinates of BMPs shall also be submitted to the City/County.

Section 3 Inspection and Maintenance Activities

This section identifies the inspection and O&M activities for each BMP incorporated into the project. Section 3.1 and 3.2 contain common maintenance activities and frequencies associated with Source Control BMPs and HSCs, respectively. Section 3.3 contains individual tables for each structural LID or hydromodification BMP with an explanation of the various types of maintenance activities associated with these BMPs.

3.1 Inspection and Maintenance of Source Control BMPs

Source Control BMP	Activity	Frequency
N1. Education for Property Owner's Tenants and Occupants	Distribute appropriate materials to owners, tenants, and/or occupants via contract language, mailings, website, or meetings.	Information provided to owners and tenants upon sale or lease. Reminders sent or posted as needed.
	Check www.ocwatersheds.com and/or City website for updated educational materials.	Annually
N2. Activity Restrictions N3/S4. Common Area Landscape Management, Efficient Landscape Design, and Efficient Irrigation	Within the CC&R's or lease agreement, restrict the following activities: *No car washing outside of car wash areas, no outdoor material storage.*	Information provided to owners and tenants upon sale or lease. Reminders sent or posted as needed.
	Check that fertilizer and pesticide usage is in accordance wiN1th the Integrated Pest Management Program. Adjust, if needed.	Annually
N2. Activity Restrictions	Check the irrigation system water budget to ensure efficiency targets are being met and the system is in good condition. Adjust/repair irrigation system and controllers, if needed.	Annually prior to irrigation system activation
N3/S4. Common Area Landscape	Check landscaping for presence of invasive species and remove, if needed.	Annually

Source Control BMP	Activity	Frequency
Management, Efficient Landscape Design, and Efficient Irrigation	Remove trash from around trash enclosure, inspect to ensure lids closed, structurally sound, and not overflowing. Repair or replace, as needed.	Monthly
N11. Common Area Litter Control	Inspect common area for litter and trash disposal violations by homeowners and reporting to the HOA or responsible party for investigation. Remove litter, as needed.	Weekly
N14. Common Area Catch Basin Inspection	Remove trash and debris from catch basins and grates. Check for damage, clogging, and standing water. Repair or mitigate clogging/standing water, as needed.	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events >0.5 inches
N15. Street Sweeping Private Streets and Parking Lots	Sweep curb and gutter areas using a vacuum street sweeper. Report any significant or illicit debris in curb/gutter to HOA or responsible party, as needed.	Weekly to Monthly
S1. Provide Storm Drain System Stenciling and Signage	Check that all catch basins in paved areas marked or stenciled with "No dumping-Drains to Ocean; No Descargue Basura" language. Replace/repaint markings if faded, damaged, removed, or otherwise illegible.	Annually
S3. Design and Construct Trash and Waste Storage Areas	Check that outdoor waste storage structure is consistently covered, that structural stability is sound, and that no run-on or contact of the trash with runoff is occurring. Repair leaks or damage and mitigate if trash coming into contact with stormwater, as needed.	Twice per year
S1. Provide Storm Drain System Stenciling and Signage	Check that trash is removed by local waste management contractor on at least a weekly basis for proper disposal.	Weekly

Source Control BMP	Activity	Frequency

3.2 Inspection and Maintenance of Hydrologic Source Controls

HSCs	Activity	Frequency
Localized On-Lot Infiltration (E.g. Rain Gardens, French Drains)	Confirm presence of HSC. Remove trash. Check facility for excessive sediment accumulation (>~ 1 inch), major erosion, damage, channelization, loss of vegetation, and standing water. Check downspout and flow spreader for damage or clogging. Remove sediment, restore vegetation, scarify soil, and/or otherwise mitigate, as needed, to restore functionality.	Annually
Impervious Area Dispersion (E.g. Downspout Disconnect, Sheet Flow Dispersion)	Confirm presence of HSC. Remove trash from pervious area. Check pervious area erosion, channelization, loss of vegetation. Check downspout and flow spreader for damage or clogging. Decompact, level, reseed, or other activities, as needed, to restore functionality.	Annually
Street Trees	Confirm presence of HSC. Check trees for damage, impaired health, insects, and growth. Prune and maintain trees to avoid impairment of traffic and replace/treat dead or damaged trees.	Annually

3.3 Inspection and Maintenance of Structural LID and Hydromodification BMPs

The section is organized by type of structural LID or hydromodification BMP with separate tables for each BMP type included in the project. The section identifies four categories of activities related to O&M of the BMPs:

General Inspections - Evaluations conducted at regularly scheduled intervals to indicate the need for maintenance of structural BMPs.

Routine Maintenance Activities – Activities conducted at regularly scheduled intervals to sustain long-term performance of each BMP, including inspections and normal upkeep.

Corrective (Major) Maintenance Activities – Includes activities conducted to replace or rehabilitate system components at the end of their usable life as well as activities conducted to resolve major issues that are not anticipated.

Emergency Response Activities – Activities related to emergencies, primarily concerning spills, which may require immediate action and notifications (Section 3.4).

BMP ID	BMP Type	Reference Maintenance Table
BMP 1	Stormwater BioInfintration System (MWS-L-8-16-V)	*Manufacturer O&M Manual (See Attachment)*

BIO-5/7 Proprietary Biotreatment	
Activity	**Frequency**
GENERAL INSPECTIONS	
Remove trash and debris	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches.
Identify excess erosion or scour	
Identify sediment accumulation that requires maintenance	
Inspect during storm event, when possible, to estimate treatment capacity and determine if premature bypass is occurring	
Evaluate plant health and need for corrective action	
Identify any needed corrective maintenance that will require site-specific planning or design	
OPERATION AND MAINTENANCE	
• O&M of proprietary BMPs must follow established manufacturer guidelines • O&M of accompanying retention BMPs should follow the guidelines established in the associated fact sheet for that BMP.	

3.4 Emergency Response Plan

In some cases, adverse conditions may occur which could be an imminent threat to human or environmental health or severe damage to infrastructure or property. For example, a spill of hazardous substances in the contributing area to a BMP could cause harmful substances to enter the BMP and be released downstream, affecting environmental and public health. Other emergencies could arise related to the stormwater features or water quality protection, such as landsliding, major erosion, or burst pipes in the tributary area.

In the event of an actual or suspected hazardous material release, the following plan shall take effect.

The primary importance of initial response to an actual or suspected spill will be public safety, control of the source of pollution, and containment of spills that have occurred, as applicable. The table below provides the emergency contact information for hazardous materials spills affecting BMPs.

Name	Phone	When to Report
Local Emergency Response (Fire Department)	911	Immediately
Orange County 24-Hour Water Pollution Problem Reporting Hotline	1-877-897-7455	Immediately
CalOES State Warning Center	1-800-852-7550	Immediately

The first number to call is emergency response (9-1-1), followed by the California Governor's Office of Emergency Services (CalOES), formerly the California Emergency Management Agency (CalEMA). (CalOES) maintains guidance and instructions of what to do in the event of a spill of hazardous substances (http://www.caloes.ca.gov/cal-oes-divisions/fire-rescue/hazardous-materials/spill-release-reporting). This plan is based on the guidance provided by CalOES (CalOES, 2014).

1. If an actual or suspected hazardous material incident exists, maintenance personnel will immediately call 911 and the CalOES State Warning Center.
2. The Designated Emergency Respondent and Responsible Party assigned to the facility (from Section 2.1) must also be notified of any actual or potential spill.
3. Remediation of contamination in the water quality facility should be handled as a corrective maintenance issue per Section 3.2 of this O&M plan.

In the event that a potential spill is identified prior to it reaching the BMPs, the Designated Emergency Respondent will implement an isolation protocol to prevent the spill from entering the BMP. An inflatable plug, Hazmat Plug, or equivalent device as approved by the Designated Emergency Respondent will be installed within the storm drains or catch basins to block upstream flow from reaching and contaminating the BMP. The temporary plug will be an interim measure until the spill is properly maintained and remediated and the Designated Emergency Respondent has determined the risk to the BMP of contamination no longer exists.

Similar measures should be taken in the event of a landslide, mudslide, or major erosion within the tributary area of the BMP to prevent sediment from damaging the BMP to the extent possible.

3.5 Vector Control

In addition to the inspection and maintenance activities listed in Section 3, all BMPs shall be inspected for standing water on a regular basis. Standing water which exists for longer than 72 hours may contribute to mosquito breeding areas. 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 present of mosquitoes and flies in the area.

The Orange County Vector Control District may be contacted for more information and support at 714-971-2421 or 949-654-2421 or www.ocvcd.org.

Attachment 1:Photos and Exhibits

Attachment 2:Maintenance Agreement and Funding Mechanism Documentation

Attachment 3:Training Log Form

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.

Attachment 4:Inspection and Maintenance Log Form

BMP OPERATION & MAINTENANCE LOG

FV CENTER, LP – FOUNTAIN VALLEY

Today's Date: _____

Name of Person Performing Activity (Printed): _____

Signature: _____

BMP Name or Type (As Shown in O&M Plan)	Brief Description of Operation, Maintenance, or Inspection Activity Performed	Summary of Notable Observations or Outcomes from Activity

[add additional pages, photographs, drawings, notes as needed]

Attachment 5: Inspection and O&M Checklist (Optional)

Guidance: Based on the BMPs present at the site, this checklist is intended to summarize the activities necessary at each frequency. Include more details if desired.

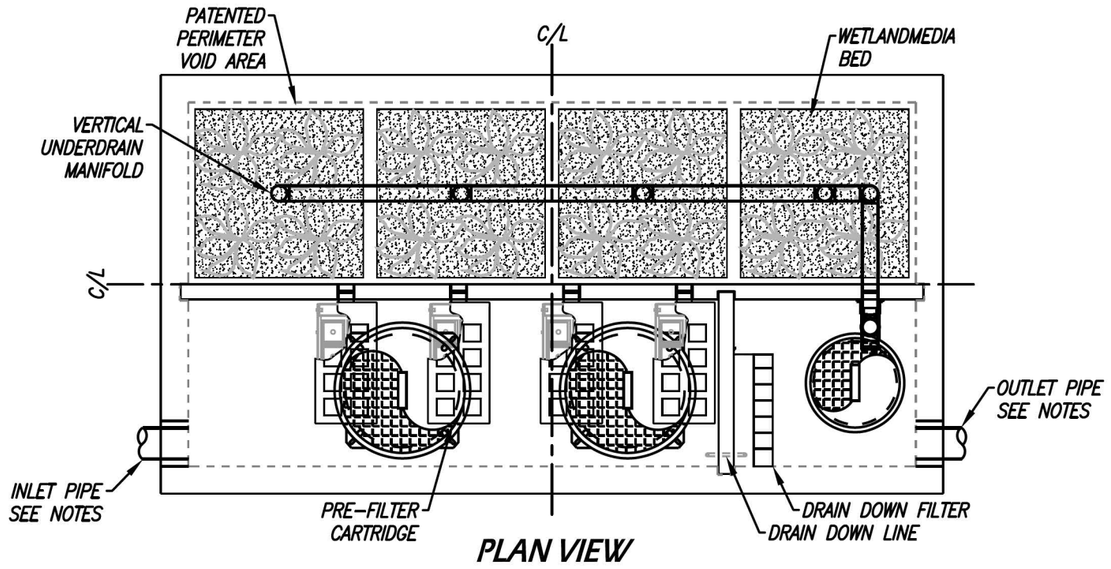
Weekly Activities	**Check Box**
Selected source control/housekeeping activities (See Section 3.1)	
Monthly Activities	
Selected source control/housekeeping activities (See Section 3.1)	
Quarterly Activities (before wet season, after wet season, plus twice after rain > 0.5 inches)	
Inspections of selected source control BMPs (See Section 3.1)	
Inspections and as-needed minor maintenance of all structural treatment and hydromodification BMPs (See Section 3.3)	
Twice Yearly Activities (during dry weather)	
Dry weather flow inspections (non-structural source control) (See Section 3.1)	
Inspection and as-needed maintenance of other selected source control BMPs(See Section 3.1)	
Annual Activities	
Self-certification (See Section 2.6)	
Various source control BMP and housekeeping activities (See Section 3.1)	
Inspection and maintenance of HSCs (See Section 3.2)	
Various planned maintenance activities of treatment and hydromodification BMPs, such as vegetation maintenance, minor sediment maintenance, etc. (See Section 3.3)	

Attachment 6: Vendor O&M Information

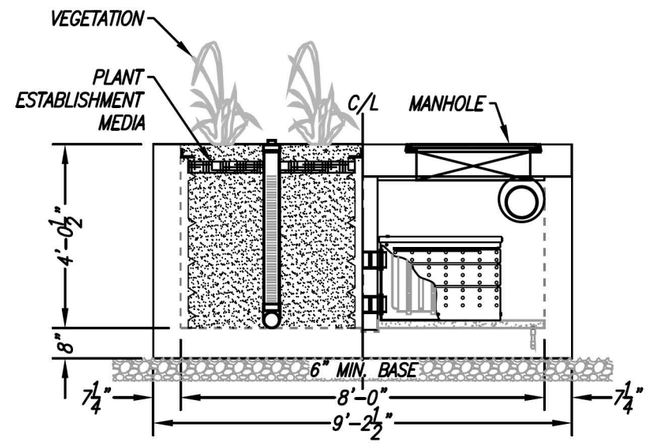
Attachment I

Modular Wetlands MWS-L-8-16-V Detail

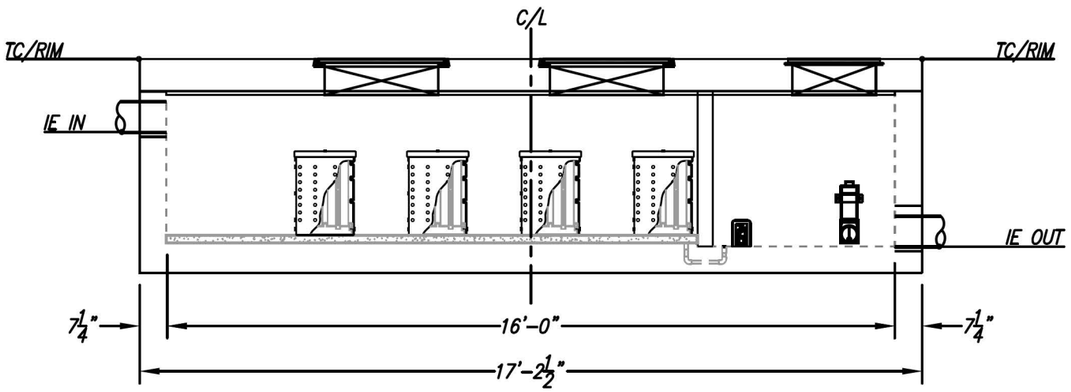
SITE SPECIFIC DATA			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
TREATMENT HGL AVAILABLE (FT)			
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PARKWAY	OPEN PLANTER	PARKWAY
FRAME & COVER	ø30"	N/A	ø24"
WETLANDMEDIA VOLUME (CY)			9.50
WETLANDMEDIA DELIVERY METHOD			TBD
ORIFICE SIZE (DIA. INCHES)			ø3.07"
MAXIMUM PICK WEIGHT (LBS)			TBD
NOTES:			



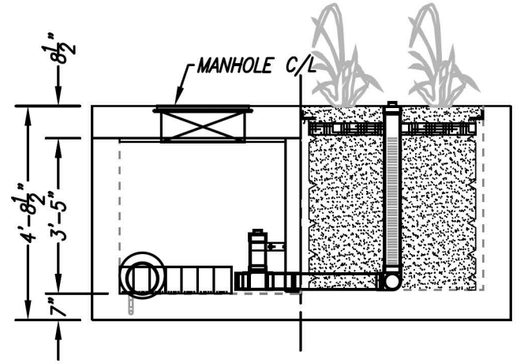
PLAN VIEW



LEFT END VIEW
BIOFILTRATION/PRETREATMENT



ELEVATION VIEW



RIGHT END VIEW
DISCHARGE/BIOFILTRATION

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH) INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL GAPS [redacted] GROUT PER MANUFACTURERS STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
5. CONTRACTOR RESPONSIBLE FOR [redacted] ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. DRIP OR SPRAY IRRIGATION REQUIRED ON ALL UNITS WITH VEGETATION.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.

TREATMENT FLOW (CFS)	0.462
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	TBD
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

Stellrecht Apartments
Fountain Valley
[redacted]
RECEIVED 08/25/2023

THE PRODUCT DESCRIBED MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING US PATENTS: 7,425,262; 7,470,362; 7,674,378; 8,303,816; RELATED FOREIGN PATENTS OR OTHER PATENTS PENDING

PROPRIETARY AND CONFIDENTIAL:

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MODULAR WETLANDS
www.ModularWetlands.com | (855) 5MOD-WET

MWS-L-8-16-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

3/11/15/JOHN

CONTECH®
ENGINEERED SOLUTIONS

Modular Wetlands® Linear
Operation & Maintenance Manual



MODULAR WETLANDS®

MODULAR WETLANDS® LINEAR OPERATION & MAINTENANCE MANUAL

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- Discharge Chamber 12

Inspection Report 13

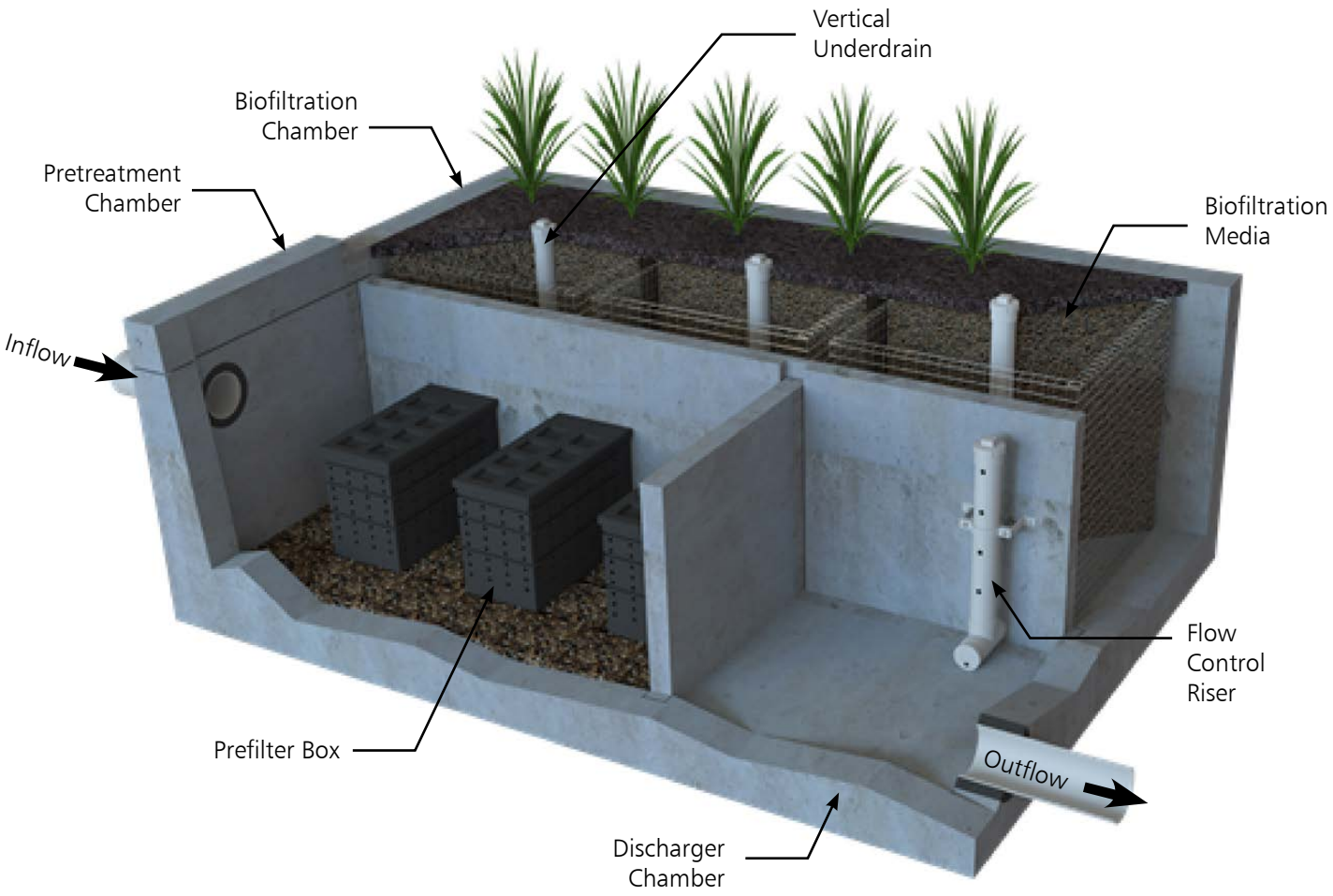
Cleaning and Maintenance Report 14

OVERVIEW

The Modular Wetlands® Linear Biofilter is designed to remove high levels of trash, debris, sediments, nutrients, metals, and hydrocarbons. Its simple design allows for quick and easy installation. The system is housed in a standard precast structure and can be installed at various depths to meet site-specific conditions.

INTRODUCTION

This is the Modular Wetlands Linear Biofilter operation and maintenance manual. Before starting, read the instructions and equipment lists closely. It is important to follow all necessary safety procedures associated with state and local regulations. Some steps required confined space entry. Please contact Contech for more information on pre-authorized third party contractors who can provide installation services in your area. For a list of service providers in your area please visit: www.conteches.com/maintenance.



INSTRUCTIONS

INSPECTION SUMMARY

Stormwater regulations require BMPs be inspected and maintained to ensure they are operating as designed to allow for effective pollutant removal and provide protection to receiving water bodies. It is recommended that inspections be performed multiple times during the first year to assess the site specific loading conditions. The first year of inspections can be used to set inspection and maintenance intervals for subsequent years to ensure appropriate maintenance is provided.

- Inspect pre-treatment, biofiltration, and discharge chambers an average of once every six to twelve months. Varies based on site specific and local conditions.
- Average inspection time is approximately 15 minutes. Always ensure appropriate safety protocol and procedures are followed.

The following is a list of equipment required to allow for simple and effective inspection of the Modular Wetlands Linear:

- Modular Wetlands Linear Inspection Form
- Flashlight
- Manhole hook or appropriate tools to remove access hatches and covers
- Appropriate traffic control signage and procedures
- Measuring pole and/or tape measure
- Protective clothing and eye protection
- 7/16" open or closed ended wrench
- Large permanent black marker (initial inspections only - first year)

Note: entering a confined space requires appropriate safety and certification. It is generally not required for routine inspections of the system

INSPECTION AND MAINTENANCE NOTES

1. Following maintenance and/or inspection, it is recommended that the maintenance operator prepare a maintenance/inspection record. The record should include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.
2. The owner should keep maintenance/inspection record(s) for a minimum of five years from the date of maintenance. These records should be made available to the governing municipality for inspection upon request at any time.
3. Transport all debris, trash, organics, and sediments to approved facility for disposal in accordance with local and state requirements.
4. Entry into chambers may require confined space training based on state and local regulations.
5. No fertilizer shall be used in the biofiltration chamber.
6. Irrigation should be provided as recommended by manufacturer and/or landscape architect. Amount of irrigation required is dependent on plant species. Some plants may not require irrigation after initial establishment.

INSPECTION PROCESS

1. Prepare the inspection form by writing in the necessary information including project name, location, date & time, unit number and other information (see inspection form).
2. Observe the inside of the system through the access covers. If minimal light is available and vision into the unit is impaired, utilize a flashlight to see inside the system and all of its chambers.
3. Look for any out of the ordinary obstructions in the inflow pipe, pre-treatment chamber, biofiltration chamber, discharge chamber or outflow pipe. Write down any observations on the inspection form.
4. Through observation and/or digital photographs, estimate the amount of trash, debris accumulated in the pre-treatment chamber. Utilizing a tape measure or measuring stick, estimate the amount of sediment in this chamber. Record this depth on the inspection form.
5. Through visual observation, inspect the condition of the pre-filter cartridges. Look for excessive build-up of sediment on the cartridges, any build-up on the tops of the cartridges, or clogging of the holes. Record this information on the inspection form. The prefilter cartridges can be further inspected by removing the cartridge tops and assessing the color of the BioMediaGREEN filter cubes (requires entry into pre-treatment chamber - see notes previous notes regarding confined space entry). Record the color of the material. New material is a light green color. As the media becomes clogged, it will turn darker in color, eventually becoming dark brown or black. The closer to black the media is the higher percentage that the media is exhausted and is in need of replacement.

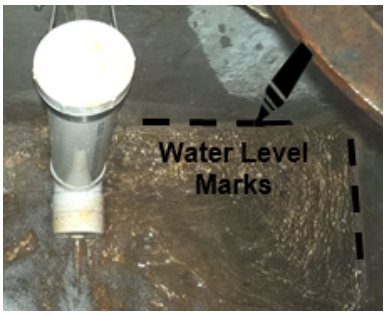


6. The biofiltration chamber is generally maintenance-free due to the system's advanced pre-treatment chamber. For units which have open planters with vegetation, it is recommended that the vegetation be inspected. Look for any plants that are dead or showing signs of disease or other negative stressors. Record the general health of the plants on the inspection form and indicate through visual observation or digital photographs if trimming of the vegetation is required.
7. The discharge chamber houses the orifice control structure, drain down filter (only in California - older models), and is connected to the outflow pipe. It is important to check to ensure the orifice is in proper operating conditions and free of any obstructions. It is also important to assess the condition of the drain down filter media which utilizes a block form of the BioMediaGREEN. Assess in the same manner as the cubes in the pre-filter cartridge as mentioned above. Generally, the discharge chamber will be clean and free of debris. Inspect the water marks on the side walls. If possible, inspect the discharge chamber during a rain event to assess the amount of flow leaving the system while it is at 100% capacity (pre-treatment chamber water level at peak HGL - top of bypass weir). The water level of the flowing water should be compared to the watermark level on the side walls, which is an indicator of the highest discharge rate the system achieved when initially installed. Record on the form if there is any difference in level from the watermark in inches.

NOTE: During the first few storms, the water level in the outflow chamber should be observed and a 6" long horizontal watermark line drawn (using a large permanent marker) at the water level in the discharge chamber while the system is operating at 100% capacity. The diagram below illustrates where the line should be drawn. This line is a reference point for future inspections of the system.

Water level in the discharge chamber is a function of flow rate and pipe size. Observation of the water level during the first few months of operation can be used as a benchmark level for future inspections. The initial mark and all future observations shall be made when the system is at 100% capacity (water level at maximum level in the pre-treatment chamber). If future water levels are below this mark when the system is at 100% capacity, this is an indicator that maintenance to the pre-filter cartridges may be needed.

8. Finalize the inspection report for analysis by the maintenance manager to determine if maintenance is required.





MAINTENANCE INDICATORS

Based upon the observations made during inspection, maintenance of the system may be required based on the following indicators:

- Missing or damaged internal components or cartridges
- Obstructions in the system or its inlet and/or outlet pipes
- Excessive accumulation of floatables in the pretreatment chamber in which the length and width of the chamber is fully impacted more than 18". See photo below.
- Excessive accumulation of sediment in the pretreatment chamber of more than 6" in depth.
- Excessive accumulation of sediment on the BioMediaGREEN media housed within the pretreatment cartridges. The following chart shows photos of the condition of the BioMediaGREEN contained within the pre-filter cartridges. When media is more than 85% clogged, replacement is required.
- Excessive accumulation of sediment on the BioMediaGREEN media housed within the pretreatment cartridges. When media is more than 85% clogged, replacement is required. The darker the BioMediaGREEN, the more clogged it is and in need of replacement.





INSPECTION PROCESS

- Excessive accumulation of sediment on the BioMediaGREEN media housed within the drain down filter (California only - older models). The following photos show the condition of the BioMediaGREEN contained within the drain down filter. When media is more than 85% clogged, replacement is required.





- Overgrown vegetation.



- Water level in the discharge chamber during 100% operating capacity (pretreatment chamber water level at max height) is lower than the water mark by 20%.

MAINTENANCE SUMMARY

The time has come to maintain your Modular Wetlands® Linear. All necessary pre-maintenance steps must be carried out before maintenance occurs. Once traffic control has been set up per local and state regulations and access covers have been safely opened, the maintenance process can begin. It should be noted that some maintenance activities require confined space entry. All confined space requirements must be strictly followed before entry into the system. In addition, the following is recommended:

- Prepare the maintenance form by writing in the necessary information including project name, location, date & time, unit number and other info (see maintenance form).
- Set up all appropriate safety and cleaning equipment.
- Ensure traffic control is set up and properly positioned.
- Prepared pre-checks (OSHA, safety, confined space entry) are performed.

The following is a list of equipment to required for maintenance of the Modular Wetlands® Linear:

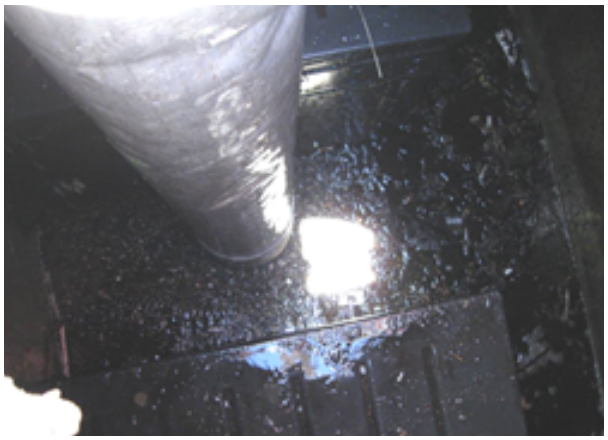
- Modular Wetlands Linear Maintenance Form
- Manhole hook or appropriate tools to access hatches and covers
- Protective clothing, flashlight, and eye protection
- 7/16" open or closed ended wrench
- Vacuum assisted truck with pressure washer
- Replacement BioMediaGREEN for pre-filter cartridges if required (order from one of Contech's Maintenance Team members at https://www.conteches.com/maintenance).

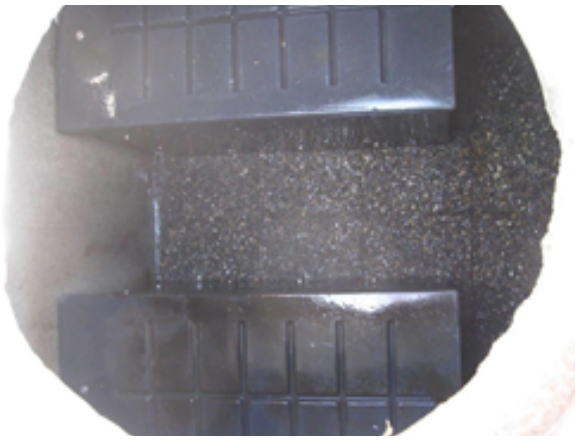
MAINTENANCE | PRETREATMENT CHAMBER

1. Remove access cover over pre-treatment chamber and position vacuum truck accordingly.
2. With a pressure washer, spray down pollutants accumulated on walls and pre-filter cartridges.
3. Vacuum out pre-treatment chamber and remove all accumulated pollutants including trash, debris, and sediments. Be sure to vacuum the floor until the pervious pavers are visible and clean.
4. If pre-filter cartridges require media replacement, continue to step 5. If not, replace access cover and move to step 11.





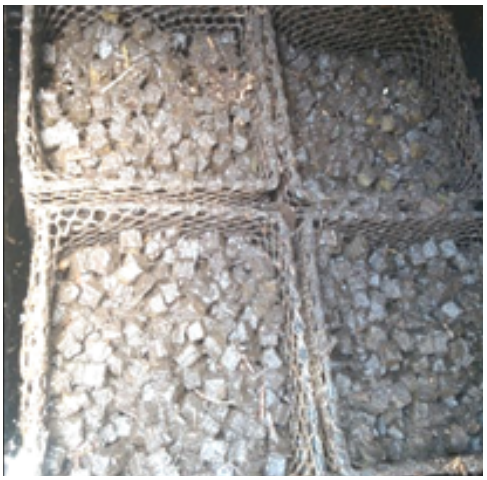




MAINTENANCE | PREFILTER CARTRIDGES

5. After successfully cleaning out the pre-treatment chamber (previous page) enter the pre-treatment chamber.
6. Unscrew the two bolts (circles shown below) holding the lid on each cartridge filter and remove lid.

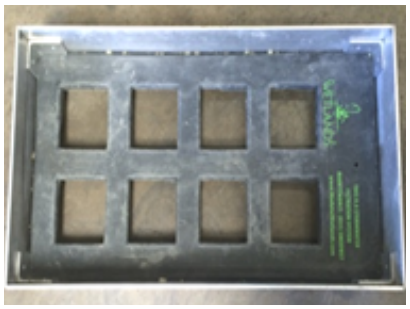


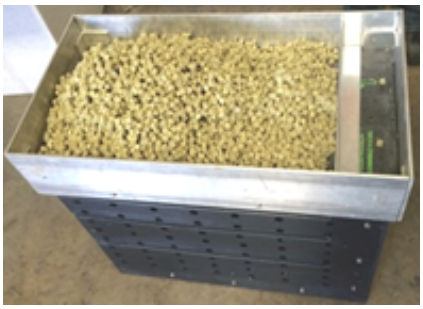


7. Place the vacuum hose over each individual media filter to suck out filter media.



8. Once filter media has been sucked out, use a pressure washer to spray down the inside of the cartridge and it's media cages. Remove cleaned media cages and place to the side. Once removed, the vacuum hose can be inserted into the cartridge to vacuum out any remaining material near the bottom of the cartridge.
9. Reinstall media cages and fill with new media from the manufacturer or outside supplier. Manufacturer will provide specification of media and sources to purchase. Utilize the manufacture-provided refilling tray and place on top of the cartridge. Fill the tray with new bulk media and shake down into place. Using your hands, lightly compact the media into each filter cage. Once the cages are full, remove the refilling tray and replace the cartridge top, ensuring bolts are properly tightened.







10. Exit the pre-treatment chamber. Replace access hatch or manhole cover.

MAINTENANCE | BIOFILTRATION CHAMBER

11. In general, the biofiltration chamber is maintenance-free with the exception of maintaining the vegetation. The Modular Wetlands Linear utilizes vegetation similar to surrounding landscape areas, therefore trim vegetation to match surrounding vegetation. If any plants have died, replace them with new ones.



12. Each vertical under drain on the biofiltration chamber has a removable (threaded cap) that can be taken off to check any blockages or root growth. Once removed, a jetting attachment can be used to clean out the under drain and orifice riser.
13. As with all biofilter systems, at some point the biofiltration media (WetlandMedia) will need to be replaced. Either because of physical clogging of sorptive exhaustion of the media ion exchange capacity (to remove dissolved metals and phosphorous). The general life of this media is 10 to 20 years based on site specific conditions and pollutant loading. Utilize the vacuum truck to vacuum out the media by placing the hose into the chamber. Once all the media is removed use the power washer to spray down all the netting on the outer metal cage. Inspect the netting for any damage or holes. If the netting is damaged it can be repaired or replaced with guidance by the manufacturer.
14. Contact one of Contech's Maintenance Team members at https://www.conteches.com/maintenance to order new WetlandMedia. The quantity of media needed can be determined by providing the model number and unit depth. Media will be provided in super sacks for easy installation. Each sack will weigh between 1000 and 2000 lbs. A lifting apparatus (backhoe, boom truck, or other) is recommended to position the super sack over the biofiltration chamber. Fill the media cages up to the same level as the old media. Replant with vegetation.





MAINTENANCE | DISCHARGE CHAMBER

15. Remove access hatch or manhole cover over discharge chamber.
16. Enter chamber to gain access to the drain down filter. Unlock the locking mechanism and lift up drain down filter housing to remove used BioMediaGREEN filter block as shown below. *NOTE: Drain down filter is only found on units installed in California prior to 2023. If no drain down filter is present, skip steps 16 and 17.*





17. Insert a new BioMediaGREEN filter block and lock drain down filter housing back in place.
18. Replace access hatch or manhole cover over discharge chamber.

NOTES

CONTECH® ENGINEERED SOLUTIONS

Inspection Report
Modular Wetlands Linear

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

Inspector Name _____ Date ____/____/____ Time _____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____ Additional Notes _____

Inspection Checklist

Modular Wetland System Type (Curb, Grate or UG Vault): _____ Size (22', 14' or etc.): _____

Structural Integrity:	**Yes**	**No**	**Comments**
Damage to pre-treatment access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Damage to discharge chamber access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Does the MWS unit show signs of structural deterioration (cracks in the wall, damage to frame)?			
Is the inlet/outlet pipe or drain down pipe damaged or otherwise not functioning properly?			
Working Condition:			
Is there evidence of illicit discharge or excessive oil, grease, or other automobile fluids entering and clogging the unit?			
Is there standing water in inappropriate areas after a dry period?			
Is the filter insert (if applicable) at capacity and/or is there an accumulation of debris/trash on the shelf system?			
Does the depth of sediment/trash/debris suggest a blockage of the inflow pipe, bypass or cartridge filter? If yes, specify which one in the comments section. Note depth of accumulation in in pre-treatment chamber.			Depth:
Does the cartridge filter media need replacement in pre-treatment chamber and/or discharge chamber?			Chamber:
Any signs of improper functioning in the discharge chamber? Note issues in comments section.			
Other Inspection Items:			
Is there an accumulation of sediment/trash/debris in the wetland media (if applicable)?			
Is it evident that the plants are alive and healthy (if applicable)? Please note Plant Information below.			
Is there a septic or foul odor coming from inside the system?			

Waste:	**Yes**	**No**
Sediment / Silt / Clay		
Trash / Bags / Bottles		
Green Waste / Leaves / Foliage		

Recommended Maintenance	
No Cleaning Needed	
Schedule Maintenance as Planned	
Needs Immediate Maintenance	

Plant Information	
Damage to Plants	
Plant Replacement	
Plant Trimming	

Additional Notes: _____

CONTECH®
ENGINEERED SOLUTIONS

Cleaning and Maintenance Report
Modular Wetlands Linear

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

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(Reviewed By)
(Date)
Office personnel to complete section to the left.

Inspector Name _____ Date ____/____/____ Time _____AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____ Additional Notes _____

Site Map #	GPS Coordinates of Insert	Manufacturer / Description / Sizing	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Total Debris Accumulation	Condition of Media 25/50/75/100 (will be changed @ 75%)	Operational Per Manufactures' Specifications (If not, why?)
	Lat: Long:	MWS Catch Basins						
		MWS Sedimentation Basin						
		Media Filter Condition						
		Plant Condition						
		Drain Down Media Condition						
		Discharge Chamber Condition						
		Drain Down Pipe Condition						
		Inlet and Outlet Pipe Condition						

Comments:



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Modular Wetlands Maintenance Guide 1/2023