APPENDIX L

PRELIMINARY WQMP

Preliminary Water Quality Management Plan (WQMP)

Project Name:

NORTHWEST OPEN SPACE (NWOS) LEGACY RANCH CODE AMENDMENT (CA) 25-001

30291 CAMINO CAPISTRANO, SAN JUAN CAPISTRANO, CA 92675

APN 121-050-03, -04, -14, -18, -19, -29

Prepared for:

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Engineer's Seal



Prepared on:

April 17, 2026

Project Owner's Certification			
Permit/Application No.	Code Amendment 25-001	Grading Permit No.	TBD
Tract/Parcel Map No.	N/A	Building Permit No.	TBD
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract)			APN 121-050-03, -04, -14, -18, -19, -29

This Preliminary Water Quality Management Plan (WQMP) has been prepared for Legacy Ranch Partners, LLC by Olaunu. The WQMP is intended to comply with the requirements of the local 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 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 San Diego Region (South Orange County). 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: Dan Almquist (Developer)			
Title	Manager		
Company	Legacy Ranch Partners, LLC		
Address	31801 Paseo Adelanto, San Juan Capistrano, CA 92675		
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Section 1 Discretionary Permit(s) and Water Quality Conditions

Project Information			
Permit/Application No.	Code Amendment 25-001	Site Address or Tract/Parcel Map No.	30291 Camino Capistrano, San Juan Capistrano, CA 92675
Additional Information/ Comments:	N/A		
Water Quality Conditions			
Water Quality Conditions from prior approvals or applicable watershed-based plans	This document is a Preliminary Water Quality Management Plan (WQMP) developed to support the evaluation and mitigation of potential environmental impacts associated with the proposed Northwest Open Space Legacy Ranch project. This Preliminary WQMP has been developed to demonstrate that the proposed Northwest Open Space Legacy Ranch project will comply with applicable local, state, and federal stormwater regulations. The final discretionary approval(s) for the Northwest Open Space Legacy Ranch project will include Water Quality Conditions that will be incorporated into a Final WQMP that will be prepared during the detailed design and construction permitting phase of the project.		

Section 2 Project Description

2.1 General Description

Description of Proposed Project		
Site Location	The project site is located at 30291 Camino Capistrano in the City of San Juan Capistrano. The project site is bounded by single family residential uses to the north, Camino Capistrano to the east, The Groves Apartments (senior living residential community) to the south, and an Orange County Transportation Authority (OCTA)-owned rail line to the west utilized by Metrolink commuter rail and Amtrak's Pacific Surfliner route.	
Project Area (ac): 62.4	Number of Dwelling Units: 4	SIC Codes: 0752-Animal Specialty Services, Except Veterinary 5431-Fruit & Vegetable Markets 5812-Eating Places 7011-Hotels and Motels 7299-Misc. Personal Services
Narrative Project Description:	The proposed project consists of seven cores: Equestrian Core, Chapel Core, Swanner House Core, Agricultural Core, Event Barn Core, Community Building Core, and a Trails/Natural Core. Each core would incorporate community amenities, as described in more detail in Section 3.2. The proposed project also includes an Amendment to the NWOS Specific Plan in order to develop the Legacy Ranch on the project site. The amended NWOS Specific Plan would add the new land uses and activities identified above as permitted and conditionally permitted uses of the NWOS Specific Plan. The proposed project also includes the preservation of the existing uses on the project site, including the Swanner House, Dr. John Cortese Dog Park, and Putuidem Village, and would provide greater access to each of these existing uses.	

Project Area	Pervious		Impervious	
	Area (acres)	Percentage	Area (acres)	Percentage
Pre-Project Conditions	61.9	99.2	0.5	0.8
Post-Project Conditions	57.7	92.5	4.7	7.5

2.2 Post Development Drainage Characteristics

The site is relatively flat except for the banks leading down to Trabuco Creek which are very steep. The project will not involve significant grading changes to the existing site topography. Since most of the project will remain as natural or landscaped open space areas and vehicle roadways and pedestrian pathways will be paved with permeable materials, the only significant impervious areas will be from new and existing building roofs (about 5 acres total area). Runoff from these areas will be directed to bioretention basins and infiltration basins distributed throughout the project site to address stormwater quality and runoff control requirements.

2.3 Property Ownership/Management

The project site is owned by the City of San Juan Capistrano. The City selected Legacy Ranch Partners LLC for exclusive negotiations on the long-term use of the property under a license agreement or other mechanism. Legacy Ranch Partners LLC is the developer responsible for the operation and maintenance of the BMPs within the developed project area until such time that the City of San Juan Capistrano and Legacy Ranch Partners LLC mutually agree to an alternate arrangement.

Section 3 Site & Watershed Characterization

3.1 Site Conditions

3.1.1 Existing Site Conditions

The project site is primarily used for outdoor recreation. The northerly portion of the site has been developed as a park site with the Dr. Joe Cortese Dog Park and a re-creation of the Native American Putuidem village of the Acjachemen people, Juaneno Band of Mission Indians, Acjachemen Nation. A former pump house (no longer in service) is located on the north central portion of the site immediately south of the Putuidem village. The historic Roger Y. Williams/Swanner House events center is located on the northern end of the site and a Santa Margarita Water District facility is located east of the park entry drive. A storage yard with steel storage building is located on the eastern portion of the site and is separated from the rest of the property by Trabuco Creek. Portions of the site have been surfaced with gravel for use as parking areas, and some clearing has been done to create trails.

Trabuco Creek flows through a concrete box structure below the nearby Interstate 5 freeway and Camino Capistrano. Velocity reducers and wing walls are located at the end of the concrete section and the channel banks have been armored with rock for approximately 400 feet on the downstream side of the channel. Approximately 14 acres of the project site, encompassing Trabuco Creek and its banks, are covenanted with conservation easements.

The site is relatively flat except for the banks leading down to Trabuco Creek which are very steep. Drainage is by sheet flow to the south and southeast to Trabuco Creek. The majority of the site is covered with native grasses, bushes and scattered trees. Remnant citrus trees from an old grove are scattered onsite. Larger trees and heavier vegetation are located in the Trabuco Creek channel.

Existing Land Uses

Land Use Description	Total Area (acres)	Impervious Area (acres)	Pervious Area (acres)	Imperviousness (%)
Agriculture, open space, and undeveloped land	61.9	0	61.9	0
Buildings	0.5	0.5	0	100
Total	62.4	0.5	61.9	8.0

3.1.2 Infiltration-Related Characteristics

3.1.2.1 Hydrogeologic Conditions

GMU Engineers & Geologists conducted a geotechnical field investigation to characterize subsurface soil conditions. Groundwater was encountered in five of the 24 test locations at depths

from 39.8 feet to 53.6 feet. Trabuco Creek runs through the southern portion of the project site and will exert influence on groundwater levels near the creek. Therefore, the likely high groundwater condition is a groundwater table drawn at a 2% slope that rises from Trabuco Creek, resulting in a design groundwater depth of approximately 35 feet below the ground surface.

3.1.2.2 Soil and Geologic Infiltration Characteristics

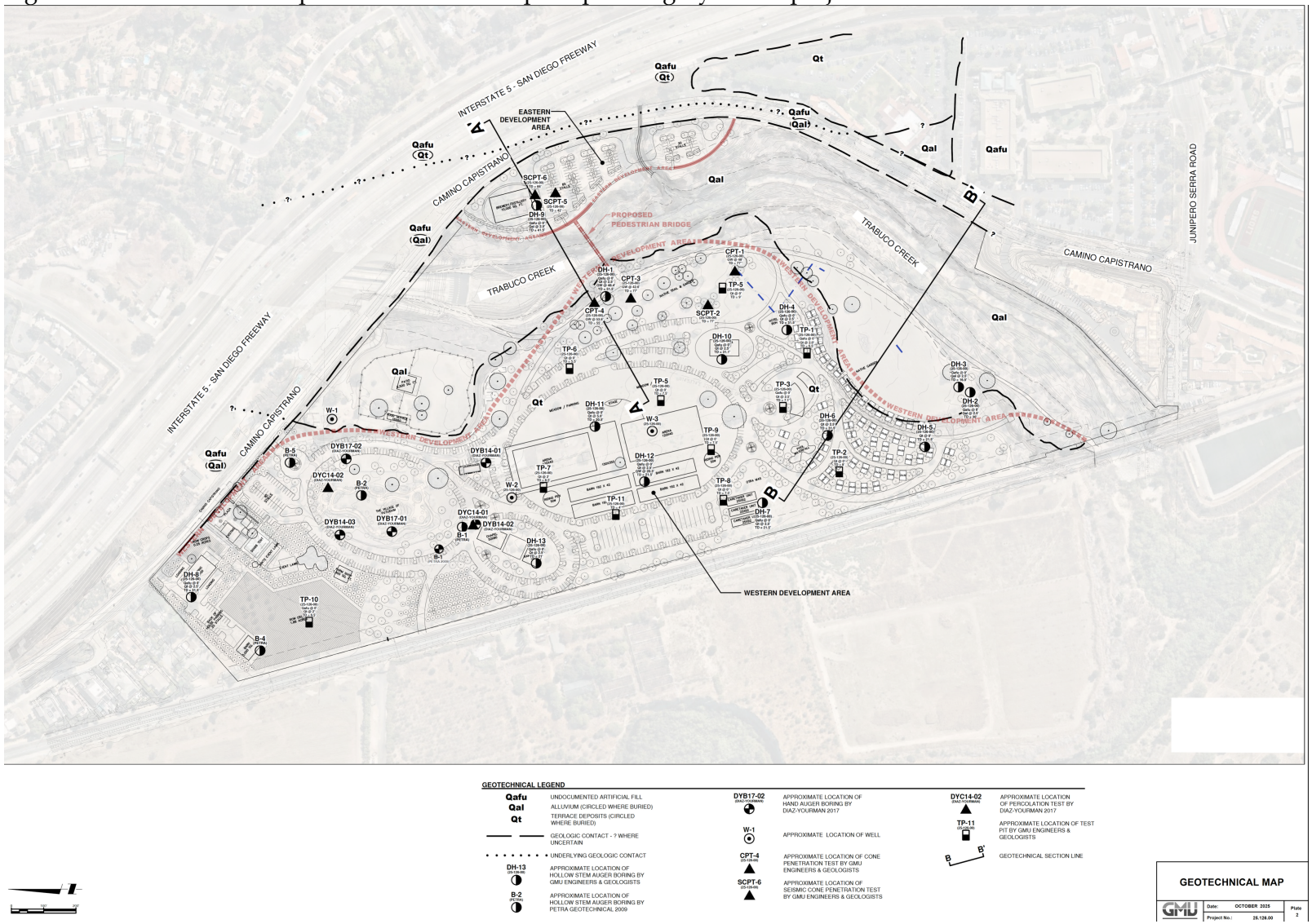
Within the project site west of Trabuco Creek, six (6) preliminary infiltration tests were performed within drill holes identified as DH-2, and DH-3; and within test pits TP-2, TP-4, TP-7 and TP-8. The infiltration tests were performed in general conformance with the South Orange County Technical Guidance Document (TGD), and the infiltration locations are shown on the Geotechnical Map provided in Figure 3.1. The drill holes were excavated to depths of approximately 15 and 30 feet below the existing grade, and the test pits were excavated from 4 to 6-feet below grade. The borings and test pits were prepared in general accordance with the TGD manual. Following testing, unfactored observed infiltration rates from 2.10 to 11.88 inches per hour were determined.

Preliminary infiltration tests were not conducted in the proposed development area on the east side of Trabuco Creek. The soils in this area are very low permeability fine grained soils, which would have very low infiltration characteristics. Consequently, infiltration testing was not performed in this area.

Infiltration is deemed feasible when the design infiltration rates meet and exceed the minimum infiltration rate of 0.3 inches per hour in accordance with the TGD Manual. Based on the above, infiltration rates appear higher at shallower depths and suitable for infiltration Best Management Practices (BMPs) for the proposed development area on the west side of Trabuco Creek. However, the results are based on in situ soil conditions (i.e. without corrective grading), therefore, corrective grading in shallow infiltration areas should not extend below the bottom of proposed infiltration basins/devices. Also, additional infiltration testing may need to be performed once the proposed locations and depths of any infiltration system BMPs are determined to confirm feasibility at the design location and depth.

Preliminarily, infiltration should be assumed to be infeasible for the proposed development area on the east side of Trabuco Creek subject to further investigation.

Figure 3.1. Geotechnical Map of the Northwest Open Space Legacy Ranch project site.



Source: GMU Geotechnical Investigation and Preliminary Design Recommendations Draft Report dated October 9, 2025.

3.1.2.3 Geotechnical Conditions

The following geotechnical conditions are summarized from the geotechnical investigation conducted by GMU Engineers & Geologists.

Regional Geology

The Northwest Open Space Legacy Ranch project site is located near the southeastern portion of the San Joaquin Hills within the Peninsular Ranges Geomorphic Province. While the San Joaquin Hills represent the local topographic high, the site itself is situated within an adjacent valley. The site geology was created by the Capistrano Embayment, a broad synclinal basin that is centered around San Juan Capistrano and is responsible for the deposition of the sediments that form the bedrock of the Capistrano formation. The GMU report notes that the regional geology is characterized by surficial deposits overlying the Capistrano Formation.

Local Geology

The underlying geologic units encountered during the subsurface exploration include undocumented artificial fills, topsoil, Quaternary-aged alluvium and terrace deposits, as well as Tertiary-aged claystone of the Capistrano Formation. The relatively young alluvial soils are located on the eastern portion of the site and are associated with deposition from Trabuco Creek fluvial activity. The alluvial soils are located along the banks of Trabuco Creek with more recent deposits within the creek bed. The alluvial soils are generally fine grained (i.e. silts and clays) in the development area east of the creek thalweg and relatively granular in the large development area west of the creek thalweg. The older terrace deposits associated with ancient fluvial activity of the Trabuco and Oso Creek watersheds are located on the western side of the project and form an elevated terrace on the site. The majority of the proposed site development is underlain by the terrace deposits. A detailed description of the subsurface materials observed in the borings and test pits is provided below.

Undocumented Artificial Fill (Qafu)
Based on GMU's review of historic aerial photographs, the site (west of Trabuco Creek) was likely partially graded for development of the citrus grove. As a result of this grading, the site is underlain locally by 2 to 2.5 feet of undocumented artificial fill materials. The fill predominantly consisted of brown silty/clayey sand that was dry to damp to moist and medium dense. Local areas of shallower or deeper fills may be encountered during site grading. The alluvial soils on the east side of the creek may also be capped with up to approximately 2.5 feet of artificial fill comprised of loose to medium dense sandy clay.

Top Soil
Top soil was encountered in the test pits throughout the site and was 2 to 2.6 feet thick. The soil in these areas consists of silty sand that is light brown to brown and dry. These soils appear to be derived from the underlying terrace deposits and alluvium. Topsoil was not observed in the boring on the east side of Trabuco Creek, however, 2 to 2.5 feet of topsoil is likely present locally in the proposed development area.

Alluvial Deposits (Qal)
Alluvial deposits were encountered in two borings located adjacent to and on the west side of Trabuco Creek. Where encountered, the alluvial materials generally consist of silty sand and sand, with lesser amounts of sandy clay and sandy silt. These materials were observed to range from loose to dense in consistency and exhibit variable moisture contents. In situ moisture contents are typically below the optimum but increase with proximity to the groundwater table. East of the creek alluvial soils were logged in borings DH-9, CPT-5, and CPT-6. The upper soils generally consisted of clays, fat clays, and silty clays. Poorly graded sands were encountered from 35 to 42 feet. The soils were moist to very moist and stiff and medium dense to very stiff and dense.

Terrace Deposits (Qt)
Terrace deposits were encountered through the majority of the sight. These materials are ancient fluvial deposits that were deposited on the San Juan Creek floodplain and subsequently uplifted to their current elevation. The terrace deposits are anticipated to be approximately 50-60 feet thick and composed of light to dark brown silty sand and clayey sand. The terrace deposits also had lesser amounts of poorly to well graded sands and sandy clays. Finally, trace amounts of gravel were encountered at greater depths. These soils were generally slightly moist to very moist and stiff to medium dense. The moisture content of these soils increased with depth.

Capistrano Formation (Tc)
The Capistrano Formation underlies the site at depth and consists of siltstone, sandy siltstone, and claystone, with minor sandstone interbeds. Claystone bedrock was encountered in DH-9 at a depth of 42-feet and was observed to consist of predominantly moist, hard, greenish gray to black claystone.

3.1.2.4 Summary of Infiltration Opportunities and Constraints of Existing Site

The infiltration tests performed by GMU show varying infiltration rates throughout the project site but at rates that appear to support implementation of infiltration BMPs for most of the project site.

3.2 Proposed Site Development Activities

3.2.1 Overview of Site Development Activities

The proposed project would develop the project site with the Legacy Ranch project, which would consist of seven cores: Equestrian Core, Chapel Core, Swanner House Core, Agricultural Core, Event Barn Core, Community Building Core, and a Trails/Natural Core. Each core would incorporate community amenities, as described in more detail below.

The proposed project also includes the preservation of the existing uses on the project site, including the Swanner House, Dr. John Cortese Dog Park, and Putuidem Village, and would provide greater access to each of these existing uses. Figure 3.2 depicts the seven proposed cores on the project site.

Equestrian Core
As shown in Figure 3.2, the Equestrian Core would be located in the center of the project site and consist of the following amenities:

- two main, approximately 17,600 square foot horse barns containing a total of 149 horse stalls for full time boarding;
- an approximately 4,320 square foot covered wash station and veterinary barn;
- an additional approximately 2,304 square foot barn;
- two riding pens;
- an approximately 33,600 square foot covered riding/roping arena;
- an approximately 33,600 square foot warm-up arena;
- an approximately 18,900 square foot sorting pen;
- an approximately 1,152 square foot feed hall;
- an approximately 864 square foot maintenance shop;
- an approximately 2,300-square-foot equestrian caretaker residences;
- equestrian trailer parking and loading area;
- a stage; and
- temporary or permanent stands accommodating a maximum capacity of 1,200 spectators on a regular basis and occasionally up to a maximum capacity of 2,500 spectators.

In addition, southwest of the main equestrian facility, the Equestrian Core would include an approximately 5,625 square foot barn for use by equine therapy programs provided by Otra Mas Horse Rescue and Equine Assisted Therapy (Otra Mas). Otra Mas is a non-profit organization in San Juan Capistrano that provides mental health and wellness programs and equine therapy for groups and individuals.

Chapel Core
The Chapel Core would be located northwest of the Equestrian Core and consists of an approximately 4,500-square-foot chapel and associated parking area. The chapel would provide a wedding venue at the project site in addition to the Swanner House. The Chapel Core would also include an approximately 5,475-sqaure-foot Ranch House for dining and special activities, an approximately 400-square-foot shared restroom building for both the chapel and Ranch House, and a shared event lawn.

Swanner House Core
The Swanner House Core is centered around the existing historic Swanner House. The proposed project would preserve the historic Swanner House, including the associated event space, lawn, and parking.

Agricultural Core
The Agricultural Core would be located at the northern end of the project site and consist of an orchard, row crops, windrow (trees), an approximately 3,000-square-foot agricultural barn, and an approximately 8,000-square-foot catering facility.

Event Barn Core
The Event Barn Core would be located within the Equestrian Core, south of the arenas, as shown in Figure 3.2. The Event Barn Core would consist of two event barns, each which would include patio

space, event space, and associated parking. The Event Barn Core would facilitate events at the project site, including weddings.

Community Building Core
As shown in Figure 3.2, the Community Building Core would be located east of Trabuco Creek and would be accessed by two driveways from Camino Capistrano, a pedestrian bridge over Trabuco Creek that connects to the Natural Core, and a pedestrian bridge/driveway that crosses a tributary of Trabuco Creek that transects the Community Building Core. The Community Building Core would consist of an approximately 10,000-square-foot community building and two parking areas on either side of the tributary to Trabuco Creek between the proposed Community Building and the southernmost proposed driveway. In order to construct the proposed improvements within the Community Building Core, the existing approximately 1,600 square-foot barn would be demolished.

Trails/Natural Core
As shown in Figure 3.2, the Trails and Natural Core would be located between Trabuco Creek and the Equestrian Core and would consist of a native garden area, row crops, a program area, several picnic areas, and an overlook deck. The Trails and Natural Core would include the development of a pedestrian bridge across Trabuco Creek, connecting to the Community Building Core.

Access, Circulation and Parking
Access to the Legacy Ranch would be provided by three ingress/egress driveways from Camino Capistrano, including the existing access driveway south of the Swanner House and two proposed driveways that would provide access to the Community Building Core and entry road parking areas. In addition, new internal permeable asphalt roads would be constructed to provide access to the proposed parking areas within the Equestrian, Chapel, and Event Barn Cores.

Overall, the proposed project would provide a total of approximately 550 dedicated parking spaces. For large events, an additional approximately 1,225 temporary parking spaces could be provided by utilizing other areas throughout the project site. The location of temporary parking would be determined as part of securing a Conditional Use Permit, which may require the need for valet parking or a Special Activities Permit, which could further include additional temporary parking off-site and the use of valet parking services.

As described above, the proposed project would also include a pedestrian bridge over Trabuco Creek that would connect the Community Building Core to the rest of the Legacy Ranch, a pedestrian bridge/driveway across a tributary to Trabuco Creek that transects the Community Building Core, internal decomposed granite roads, pedestrian paths, and new trail connections to the Trabuco Creek Trail throughout the project site.

Landscaping and Open Space
The proposed project would include active and passive recreational facilities and extensive open space. Some existing trees and vegetation on the project site would be maintained and the proposed project would include new landscaping throughout the project site. In addition, the approximately 14-acre existing conservation easement encompassing Trabuco Creek and both its banks would be untouched. Development of structures would be set back from the easement boundary by an approximately 100-foot buffer, consistent with the NWOS Specific Plan Development Standards.

Figure 3.2. Legacy Ranch at Northwest Open Space Master Plan Core Areas.



Source: Legacy Ranch Project Description by LSA, April 2026.

3.2.2 Project Attributes Influencing Stormwater Management

The project development plan seeks to provide enhanced recreational opportunities while preserving open space areas. Most of the project site will remain as natural or landscaped area and except for building roofs/footprints, other surfaces for vehicle roadways and pedestrian pathways will be constructed using permeable paving materials. Vegetated bioretention areas will be distributed throughout the site to treat and capture the water quality runoff volume from building roofs. The bioretention areas have been sized to also accommodate runoff to address hydromodification requirements. Runoff volumes that exceed hydromodification requirements will be directed to several infiltration basin areas or overflow to adjacent open space areas where water will infiltrate in the site's well-infiltrating soils. Source control BMPs specific to the different types of uses will also be integrated into the development. Site design BMPs have been integrated into the project (e.g. minimizing impervious areas), and appropriate site design BMPs will also be integrated into the development.

The potential pollutant-generating activities at the project site are primarily associated with the construction of new buildings on the site. Also, there are two uncovered horse riding pens and one uncovered horse riding arena in the Equestrian Core. The project stormwater management approach will be to capture and treat through bioretention not only new building roofs/footprints but also treat runoff from existing buildings (for a total of about 5 acres of impervious area) in accordance with associated Orange County WQMP requirements. Although not confirmed at this time, as a conservative measure the uncovered horse riding areas will be considered as production areas associated with a Concentrated Animal Feeding Operation (CAFO) and thus be designed to contain and infiltrate the 25-year, 24-hour storm event volume per CAFO stormwater requirements.

3.2.3 Effects on Infiltration and Harvest and Use Feasibility

The infiltration tests performed by GMU show varying infiltration rates throughout the proposed project site, although at rates that support infiltration BMPs. Where soil conditions allow, infiltration BMPs will be implemented concurrent with the grading and project site development.

3.3 Receiving Waterbodies

The project site is located in the San Juan Creek Watershed. Runoff from the project site will be discharged into the adjacent Trabuco Creek which drains to San Juan Creek, which then discharges into the Pacific Ocean. Adjacent to the project site, Trabuco Creek is a concrete lined and rip rap channel from Camino Capistrano to about 550 downstream of Camino Capistrano at which point Trabuco Creek transitions to a natural watercourse until just upstream of San Juan Creek. From there Trabuco Creek and then San Juan Creek are semi hardened channels with sheet pile or concrete walls/slopes and soft channel bottoms all the way to the mouth of San Juan Creek at the Pacific Ocean.

The 303(d) list includes pollutants that have been identified as causing impairment of receiving waters and their beneficial uses. The latest 2024 303(d) list identifies the following impairments:

Lower Trabuco Creek

- Benthic Community Effects

- Indicator Bacteria
- Nitrogen
- Phosphorus
- Toxicity

San Juan Creek

- Benthic Community Effects
- DDE (Dichlorodiphenyldichloroethylene)
- Nitrogen
- Oxygen, Dissolved
- Phosphorus
- Selenium
- Toxicity
- Indicator Bacteria (Total Maximum Daily Load approved June 2011)
- Bifenthrin
- Pyrethroids

San Juan Creek Mouth

- Indicator Bacteria (Total Maximum Daily Load approved June 2011)
- Cadmium
- Copper
- Nickel
- Nitrogen, ammonia (Total Ammonia)

Pacific Ocean Shoreline, Lower San Juan Hydrologic Subarea

- Indicator Bacteria (Total Maximum Daily Load approved June 2011)

The project site discharges directly to an environmentally sensitive area since runoff from the site is discharged into the adjacent Trabuco Creek.

3.4 Stormwater Pollutants or Conditions of Concern

Pollutants or Conditions of Concern				
Pollutant	Expected from Proposed Land Uses/Activities (Yes or No)	Receiving Waterbody Impaired (Yes or No)	Priority Pollutant from WQIP or other Water Quality Condition? (Yes or No)	**Pollutant of Concern (Primary, Other, or No)**
Suspended-Solids	Yes	No	No	Other
Nutrients	Yes	Yes	No	Primary
Heavy Metals	Yes	Yes	No	Primary
Bacteria/Virus/Pathogens	Yes	Yes	Yes	Primary
Pesticides	Yes	Yes	No	Primary
Oil and Grease	Yes	No	No	Other
Toxic Organic Compounds	Yes	Yes	No	Primary
Trash and Debris	Yes	No	No	Other
Dry Weather Runoff	No	No	Yes	No

3.5 Hydrologic Conditions of Concern

Does a hydrologic condition of concern exist for this project?

Trabuco Creek

☐ No – An HCOC does not exist for this receiving water because:

- ☐ Project discharges directly to a protected conveyance (bed and bank are concrete lined the entire way from the point(s) of discharge to a receiving lake, reservoir, embayment, or the Ocean
- ☐ Project discharges directly to storm drains which discharge directly to a reservoir, lake, embayment, ocean or protected conveyance (as described above)
- ☐ The project discharges to an area identified in the WMAA as exempt from hydromodification concerns

☒ Yes – An HCOC does exist for this receiving water because none of the above are applicable.

The proposed project would result in a potential HCOC and is also considered a "Priority Project." Therefore, at each point of compliance (i.e., point of runoff discharge from the project site to the adjacent Trabuco Creek) the post-project runoff flow rates and durations cannot exceed predevelopment, naturally occurring, runoff flow rates and durations by more than 10%, for flow rates from 10% of the 2-year flowrate up to the 10-year flowrate. This was evaluated using the South Orange County Hydrology Model (SOHM) which is a continuous simulation model.

3.6 Critical Course Sediment Yield Areas

The project area is not within an area identified as having potential sediment yield in Appendix N.8 of the TGD.

Section 4 Site Plan and Drainage Plan

4.1 Drainage Management Area Delineation

The proposed project will not change or add any runoff discharge points to the adjacent Trabuco Creek. Existing natural areas adjacent to Trabuco Creek will continue to drain into the creek via surface sheet flow. All developed areas of the proposed project (i.e. building footprints) will drain through bioretention areas and then into infiltration basins or open space areas. The Drainage Management Areas (DMAs) are essentially each building or groups of several buildings for which the water quality DCV (design capture volume) is treated. There are also several DMAs associated with equestrian facilities such as the riding pens and arenas. Although not confirmed at this time, as a conservative measure the uncovered horse riding pens and arena will be considered as production areas associated with a Concentrated Animal Feeding Operation (CAFO) and thus be designed to contain and infiltrate the 25-year, 24-hour storm event volume per CAFO stormwater requirements. The bioretention area for other DMAs have been sized and configured to accommodate runoff to address water quality (DCV) and hydromodification requirements noted in Section 3.5. Runoff flows from storm events larger than that combined for the DCV and hydromodification events are directed to one of several infiltration basin areas which have been proposed in areas where full infiltration BMPs were determined to be feasible or overflow to adjacent open space areas where water will infiltrate in the site's well infiltrating soils.

This distributed approach meets both the LID/water quality and flood control/hydromodification requirements. All discharges from the development (building areas) will be treated following the TGD specifications for LID stormwater management strategies.

4.2 Overall Site Design BMPs

Minimize Impervious Area

- The proposed project will be designed and developed to minimize impervious areas, and the project results in a relatively small increase in total imperviousness area from 0.8 percent of the project site to 7.9 percent of the project site.
- Extensive landscaped areas will be incorporated into the developed areas.
- Pedestrian pathways will be constructed with pervious materials, most likely decomposed granite.
- Onsite driveways and parking areas will be paved with pervious asphalt.
- New impervious surfaces are generally limited to only the proposed building footprints.

Maximize Natural Infiltration Capacity

- As noted above, permeable paving materials will be used for all paved vehicle areas and pedestrian pathways.
- The development construction footprint has been minimized so that the only new significant impervious areas are the proposed buildings, where the post-project site is still less than 10% impervious area.

Preserve Existing Drainage Patterns and Time of Concentration

- The site landscaping design will incorporate depressed landscape areas, vegetative buffers and bioretention areas to help maximize localized retention and minimize runoff.

Disconnect Impervious Areas

- Vegetated swales, or other design concepts that are comparable and equally effective, will be used to convey runoff where feasible.
- Roof runoff for proposed buildings will be directed to planter boxes, vegetated swales or vegetated biofilters/infiltration areas.
- Onsite driveways and parking areas will be paved with a permeable surface, designed to infiltrate and/or drain into landscaping before discharging to the municipal storm drain system, or other design concepts that are comparable and equally effective.

Protect Existing Vegetation and Sensitive Areas

- Existing vegetation will be protected in areas where it is feasible.

Revegetate Disturbed Areas

- Disturbed vegetation in areas outside of the grading areas will be revegetated.

Soil Stockpiling and Site Generated Organics

- Soil stockpiling will occur on site with the cut and fill activities and soil balance approach that will be occurring across the site. Restoration of disturbed areas will use native soils that have been properly stockpiled wherever possible.

Firescaping

- Firescaping will be integrated into the landscaping design of the project consistent firescaping guidance and consistent with California law (Public Resources Code 4291).

Water Efficient Landscaping

- Water efficient landscaping will be integrated into the landscape plan for the proposed development.

4.3 DMA Characteristics and Site Design BMPs

Each of the Drainage Management Areas (DMAs) is briefly described below. A table summarizing all the DMAs is provided in Section 4.3.21 and a DMA Map is provided in Figure 4.1.

4.3.1 DMA 1

DMA 1 is a catering tent/pad with an area of 6,000 square feet (0.138 acres). This area will drain to BMP No. 1 which will be a vegetated bioretention area. This bioretention area will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to a separate basin for infiltration.

4.3.2 DMA 2

DMA 2 is a barn with an area of 3,000 square feet (0.069 acres). This area will drain to BMP No. 2 which will be a vegetated bioretention area. This bioretention area will be sized to also

accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to a separate basin for infiltration.

4.3.3 DMA 3

DMA 3 includes a tent event space and the existing Swanner House with a total combined impervious area of 6,230 square feet (0.143 acres). This area will drain to BMP No. 3 which will be a vegetated bioretention area. This bioretention area will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to a separate basin for infiltration.

4.3.4 DMA 4

DMA 4 is a farm shop with an area of 1,800 square feet (0.041 acres). This area will drain to BMP No. 4 which will be a vegetated bioretention area. This bioretention area will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to a separate basin for infiltration.

4.3.5 DMA 5

DMA 5 consists of a Chapel and Ranch House. The total combined impervious area is 11,194 square feet (0.257 acres). This area will drain to BMP No. 5 which will be a vegetated bioretention area. This bioretention area will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to a separate basin for infiltration.

4.3.6 DMA 6

DMA 6 consists of two (2) barns with a total impervious area of 21,920 square feet (0.503 acres). This area will drain to BMP No. 6 which will be a vegetated bioretention area. This bioretention area will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to a separate basin for infiltration.

4.3.7 DMA 7

DMA 7 consists of an uncovered riding pen of 1,963 square feet (0.045 acres). This area is considered essentially pervious and will be constructed with a very small perimeter berm to make this area self-containing for the 25-year, 24-hour storm event volume. This event will infiltrate into the ground as soils in this area are conducive for infiltration.

4.3.8 DMA 8

DMA 8 is an existing pump house with an area of 981 square feet (0.023 acres). This area will drain to BMP No. 8 which will be a vegetated bioretention area. This bioretention area will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to adjacent open space.

4.3.9 DMA 9

DMA 9 is a large covered horse riding area with an area of 52,500 square feet (1.205 acres). This area will drain to BMP No. 9 which will be a vegetated bioretention area. This bioretention area will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to adjacent open space.

4.3.10 DMA 10

DMA 10 is a smaller uncovered horse riding arena with an area of 33,600 square feet (0.771 acres). This area is considered essentially pervious and will be constructed with a very small perimeter berm to make this area self-containing for the 25-year, 24-hour storm event volume. This event will infiltrate into the ground as soils in this area are conducive for infiltration.

4.3.11 DMA 11

DMA 11 consists of an uncovered riding pen of 1,963 square feet (0.045 acres). This area is considered essentially pervious and will be constructed with a very small perimeter berm to make this area self-containing for the 25-year, 24-hour storm event volume. This event will infiltrate into the ground as soils in this area are conducive for infiltration.

4.3.12 DMA 12

DMA 12 consists of the Otra Mas Building, Caretaker Unit and two (2) barns totaling 29,832 square feet (0.685 acres). This area will drain to BMP No. 12 which will be a vegetated bioretention area. This bioretention area will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to a separate basin for infiltration.

4.3.13 DMA 13

DMA 13 is an event barn with an area of 2,002 square feet (0.046 acres). This area will drain to BMP No. 13 which will be a vegetated bioretention area. This bioretention area will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to nearby open space areas.

4.3.14 DMA 14

DMA 14 is an event barn with an area of 3,600 square feet (0.083 acres). This area will drain to BMP No. 14 which will be a vegetated bioretention area. This bioretention area will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to nearby open space areas.

4.3.15 DMA 15

DMA 15 is a proposed community building with an area of 10,000 square feet (0.230 acres). This area will drain to BMP No. 15 which will be a vegetated bioretention area. This bioretention area

will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to a separate basin for infiltration.

4.3.16 DMA 16

DMA 16 is a food service area with an area of 960 square feet (0.022 acres). This area will drain to BMP No. 16 which will be a vegetated bioretention area. This bioretention area will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to adjacent open space areas.

4.3.17 DMA 17

DMA 17 is a patio with an area of 2,500 square feet (0.057 acres). This area will drain to BMP No. 17 which will be a vegetated bioretention area. This bioretention area will be sized to also accommodate hydromodification requirements. Flows greater than the DCV and hydromodification requirement will be directed to adjacent open space areas.

4.3.18 DMA Summary

Drainage Management Areas				
DMA (Number/Description)	Total Area (acres)	Impervious Area (%)	Infiltration Feasibility (Full, Partial, or None)	Hydrologic Source Controls Used
1. Catering	0.138	100	Full	Feasible site design BMPs in Section 4.2
2. Barn	0.069	100	Full	Feasible site design BMPs in Section 4.2
3. Tent Event Space, Swanner House	0.143	100	Full	Feasible site design BMPs in Section 4.2
4. Farm Shop	0.041	100	Full	Feasible site design BMPs in Section 4.2
5. Ranch House and Chapel	0.257	100	Full	Feasible site design BMPs in Section 4.2
6. Two (2) Barns	0.503	100	Full	Feasible site design BMPs in Section 4.2
7. Riding Pen	0.045	5	Full	Feasible site design BMPs in Section 4.2
8. Existing Old Pump House	0.023	100	Full	Feasible site design BMPs in Section 4.2
9. Large Arena	1.205	100	Full	Feasible site design BMPs in Section 4.2
10. Small Arena	0.771	5	Full	Feasible site design BMPs in Section 4.2
11. Riding Pen	0.045	5	Full	Feasible site design BMPs in Section 4.2
12. Otra Mas Building, Caretaker Unit & Two (2) Barns	0.685	100	Full	Feasible site design BMPs in Section 4.2
13. Event Barn	0.046	100	Full	Feasible site design BMPs in Section 4.2
14. Event Barn	0.083	100	Full	Feasible site design BMPs in Section 4.2
15. Community Building	0.230	100	Full	Feasible site design BMPs in Section 4.2
16. Food Service	0.022	100	Full	Feasible site design BMPs in Section 4.2
17. Patio	0.057	100	Full	Feasible site design BMPs in Section 4.2

Figure 4.1. Drainage Management Area & BMP Map, Plate 1.

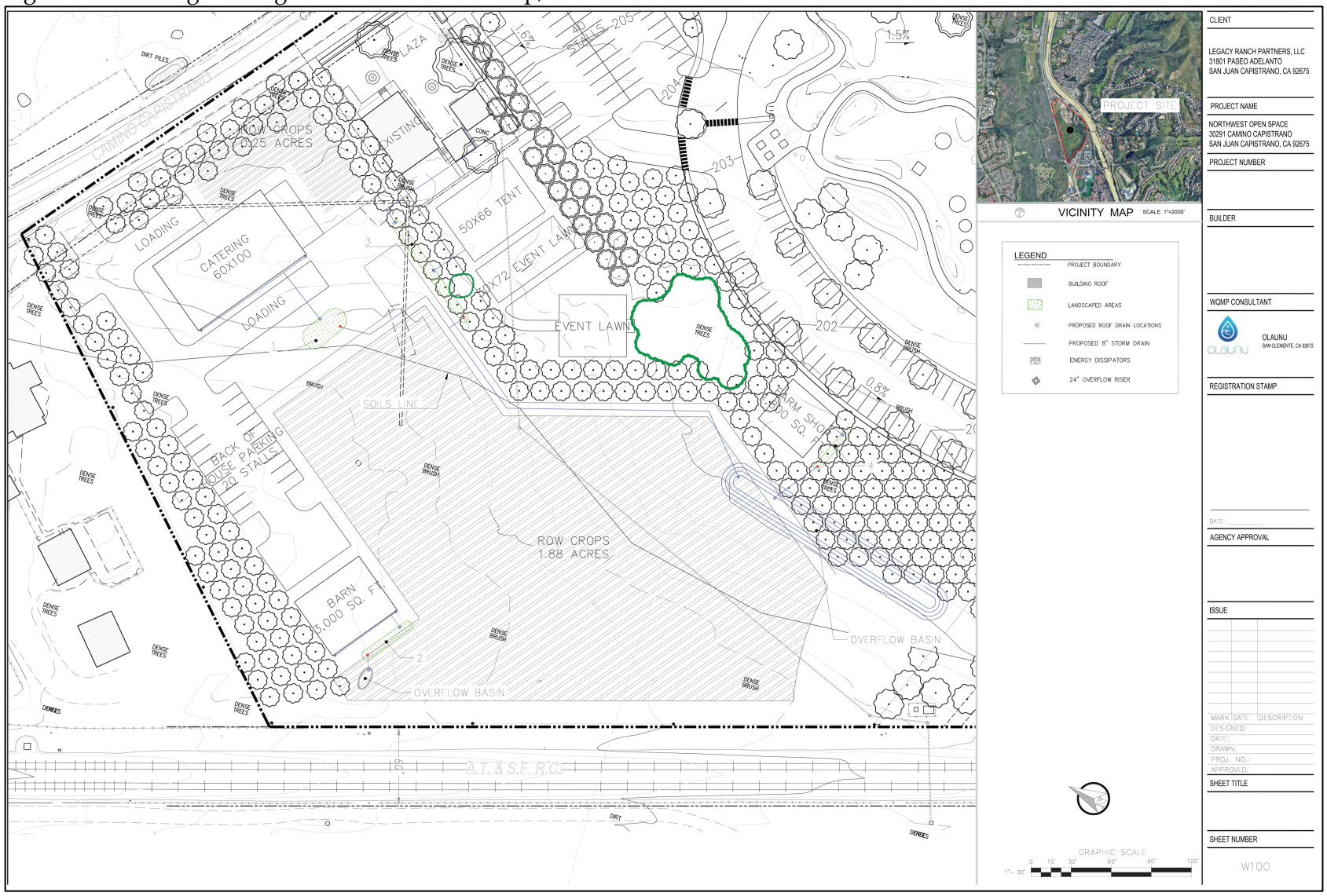


Figure 4.1. Drainage Management Area & BMP Map, Plate 2.

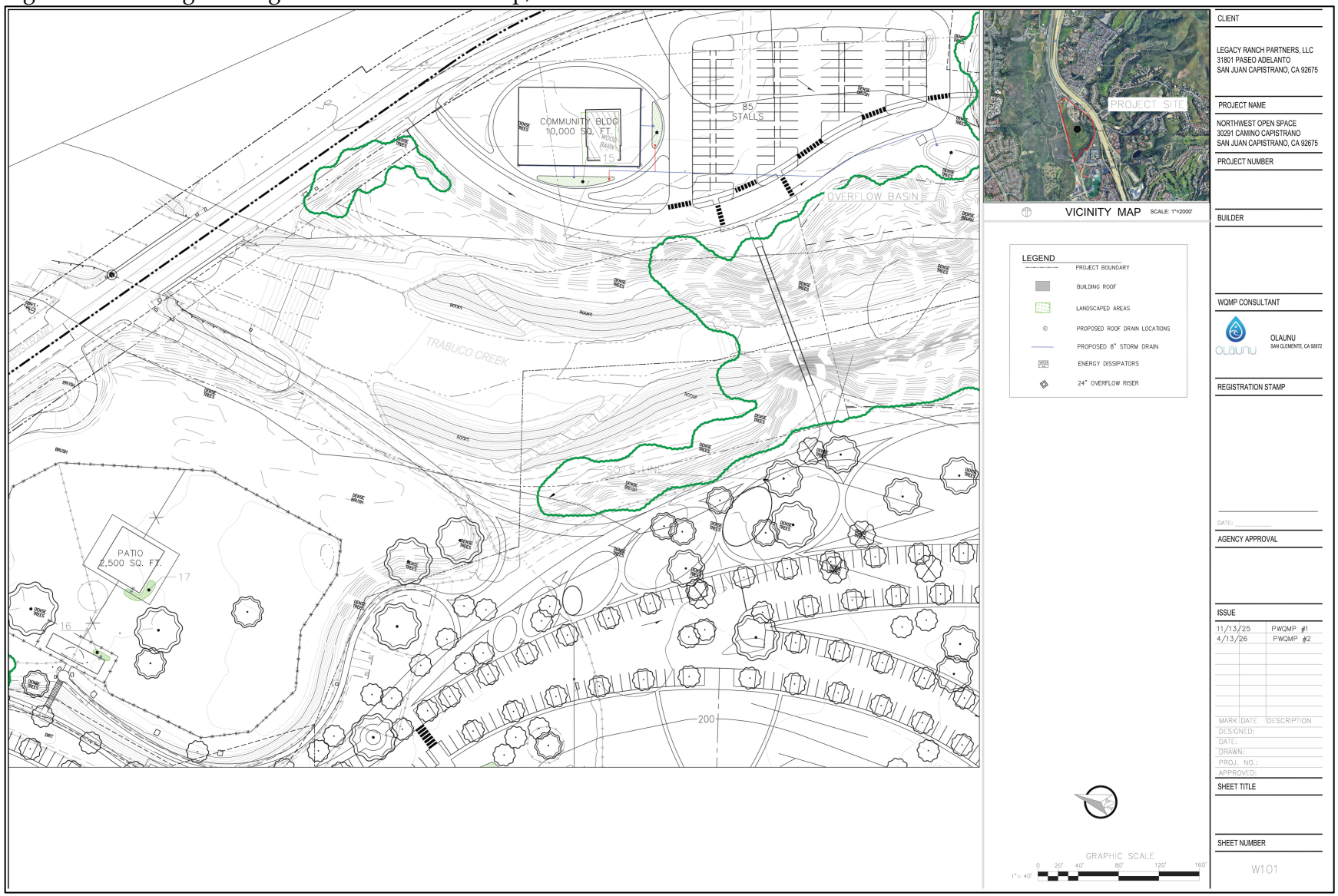


Figure 4.1. Drainage Management Area & BMP Map, Plate 3.

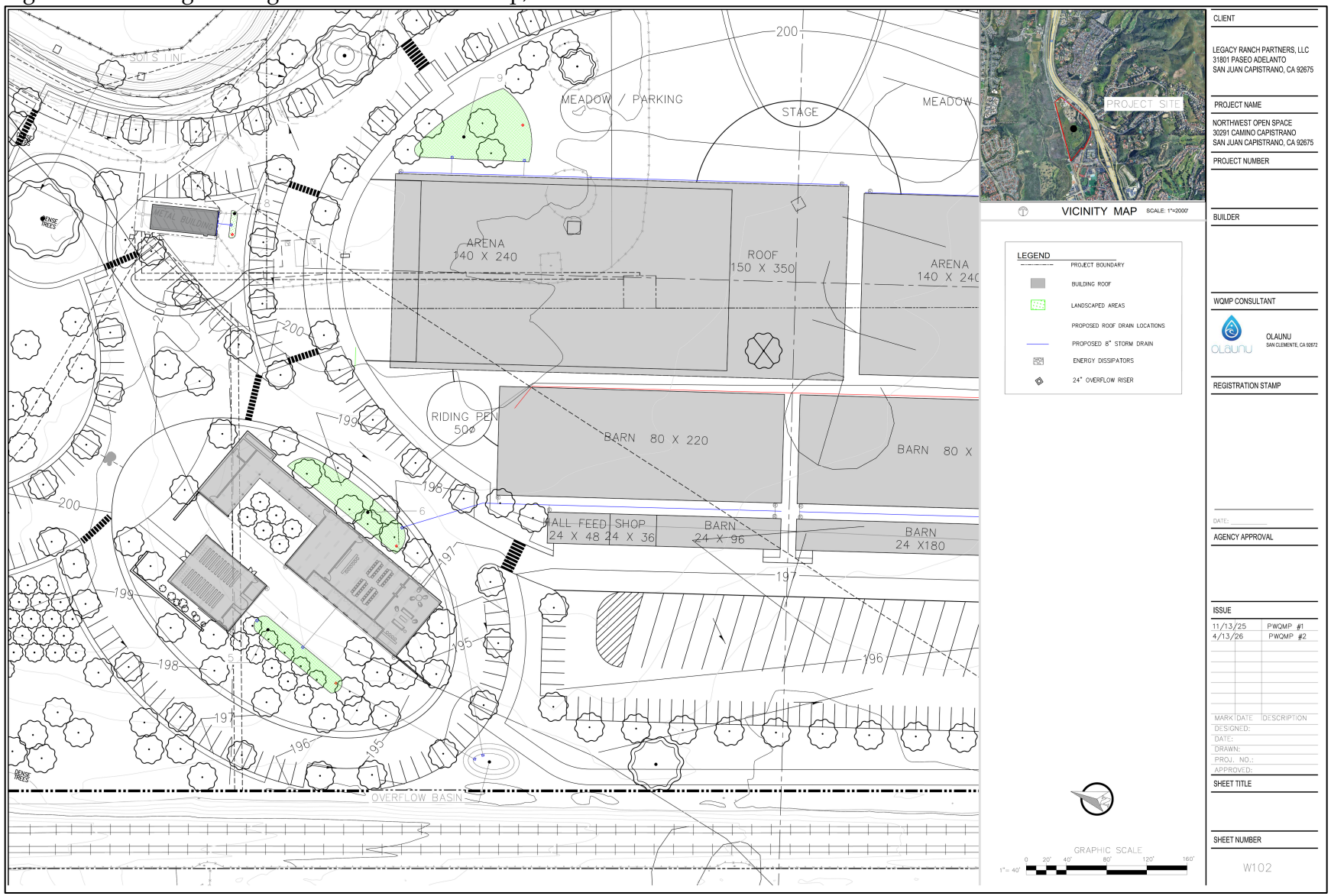
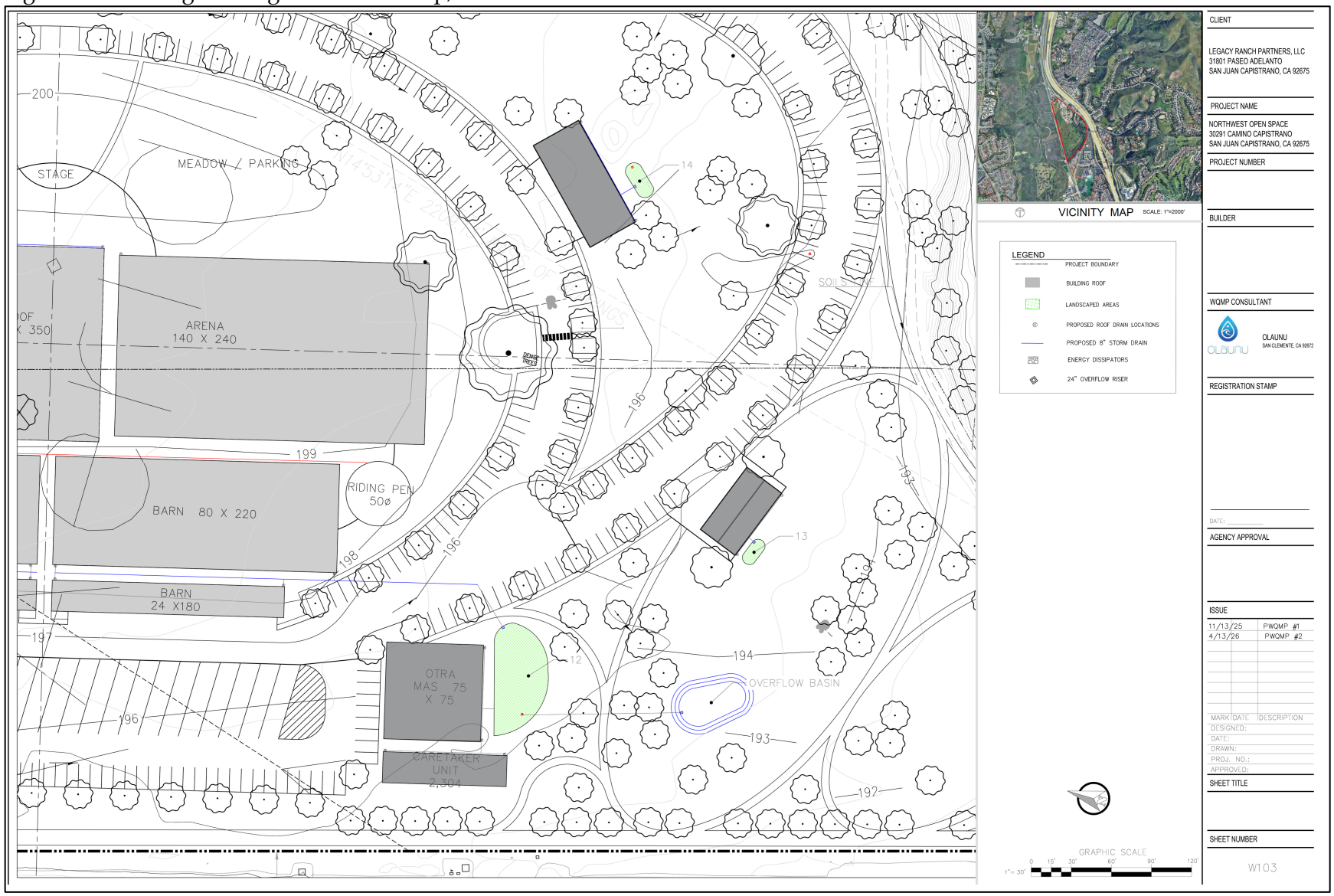


Figure 4.1. Drainage Management Area Map, Plate 4.



4.4 Source Control BMPs

Non-Structural Source Control BMPs				
Identifier	**Name**	**Check One**		**Reason Source Control is Not Applicable**
		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)	☐	☒	No hazardous materials will be generated or stored onsite.
N6	Local Industrial Permit Compliance	☐	☒	No hazardous materials will be generated or stored onsite.
N7	Spill Contingency Plan	☐	☒	No hazardous materials will be generated or stored onsite.
N8	Underground Storage Tank Compliance	☐	☒	No hazardous materials will be generated or stored onsite.
N9	Hazardous Materials Disclosure Compliance	☐	☒	No hazardous materials will be generated or stored onsite.
N10	Uniform Fire Code Implementation	☐	☒	No hazardous materials will be generated or stored onsite.
N11	Common Area Litter Control	☒	☐	
N12	Employee Training	☒	☐	
N13	Housekeeping of Loading Docks	☐	☒	No loading docks are proposed.
N14	Common Area Catch Basin Inspection	☒	☐	
N15	Street Sweeping Private Streets and Parking Lots	☒	☐	
N16	Retail Gasoline Outlets	☐	☒	No retail gasoline outlet is proposed.

N1 Education for Property Owners, Tenants and Occupants
For developments with no Property Owners Association (POA) or with POAs of less than fifty (50) dwelling units, practical information materials will be provided to the first residents/occupants/tenants on general housekeeping practices that contribute to the protection of stormwater quality. These materials will be initially developed and provided to first

residents/occupants/tenants by the developer. Thereafter such materials will be available through the Permittees' education program. Different materials for residential, office commercial, retail commercial, vehicle-related commercial and industrial uses will be developed. For developments with POA and residential projects of more than fifty (50) dwelling units, project conditions of approval will require that the POA 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. Educational materials available from the County of Orange can be downloaded here:
http://www.ocwatersheds.com/PublicEd/resources/default.aspx

N2 Activity Restrictions
If a POA is formed, conditions, covenants and restrictions (CCRs) must be prepared by the developer for the purpose of surface water quality protection. An example would be not allowing car washing outside of established community car wash areas in multi-unit complexes.

N3 (SC-73) Common Area Landscape Management
Identify on-going 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 Final WQMP shall identify responsibility for implementation of each non-structural BMP and scheduled cleaning and/or maintenance of all structural BMP facilities.

N11 (SC-60) Common Area Litter Control
The owner/POA 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/homeowners or businesses and reporting the violations to the owner/POA for investigation.

N12 Employee Training
Education program (see N1) as it would apply to future employees of individual businesses. Developer either prepares manual(s) for initial purchasers of business site or for development that is constructed for an unspecified use makes commitment on behalf of POA or future business owner to prepare. An example would be training on the proper storage and use of fertilizers and pesticides, or training on the implementation of hazardous spill contingency plans.

N14 (SC-74) Common Area Catch Basin Inspection
For industrial/commercial developments and for developments with privately maintained drainage systems, the owner 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) detention basins, retention

basins, sediment basins, open drainage channels and lift stations. 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.

Structural Source Control BMPs

Identifier	Name	Check One		Reason Source Control is Not Applicable
		Included	Not Applicable	
S1	Provide storm drain system stenciling and signage	☒	☐	
S2	Design and construct outdoor material storage areas to reduce pollution introduction	☐	☒	No outdoor material storage areas.
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	☒	☐	
	Incorporate requirements applicable to individual priority project categories (from SDRWQCB NPDES Permit)	☒	☐	
S6	Dock areas	☐	☒	
S7	Maintenance bays	☐	☒	No vehicle maintenance bays.
S8	Vehicle wash areas	☐	☒	No vehicle wash areas.
S9	Outdoor processing areas	☐	☒	No outdoor processing areas.
S10	Equipment wash areas	☐	☒	No equipment wash areas.
S11	Fueling areas	☐	☒	No fueling areas.
S12	Hillside landscaping	☒	☐	
S13	Wash water control for food preparation areas	☒	☐	
S14	Community car wash racks	☐	☒	No community car wash racks.

Section 5 Low Impact Development BMP

5.1 LID BMPs in DMAs 1 through 17

As described in Section 4, each of the 17 DMAs will have LID BMPs.

5.1.1 Hydrologic Source Controls for DMAs 1 through 17

Feasible site design BMPs (Hydrologic Source Controls), consistent with those identified in Section 4.2, will be integrated within each DMA.

5.1.2 Structural LID BMP for DMAs 1 through 17

BMP Type

The structural LID BMP for most of the DMAs 1 through 17 will be a bioretention basin (BIO-1). Each DMA will have its own bioretention area to capture and infiltrate the DCV water quality runoff volume as well as hydromodification runoff flow. Roof runoff from new and existing buildings will be piped to the bioretention areas. DMAs 7, 10 and 11 are considered essentially pervious and will be constructed with a very small perimeter berm to make these areas self-containing for the 25-year, 24-hour storm event volume per CAFO requirements. This event will infiltrate into the ground as soils in these areas are conducive for infiltration.

BMP Sizing

Each bioretention area was sized per the Orange County Technical Guidance Document to fully address the DCV as well as hydromodification requirements. Large storm flows will be directed to infiltration basins or adjacent open space areas where water will infiltrate in the site's well infiltrating soils.

BMP Design

Bioretention Basins 1 through 17 will be designed consistent with the TGD Fact Sheet BIO-1: BIOINFILTRATION. Infiltration basins are BMPs designed to capture runoff and infiltrate it into the underlying soil. An infiltration basin consists of an earthen basin constructed with a flat bottom. An infiltration basin retains the full DCV in the basin and allows it to percolate into the underlying soils. As noted above, the bioretention basin for each DMA has been upsized to also address hydromodification.

5.2 Summary of LID BMPs

The table below summarizes the LID BMPs for all DMAs 1 through 17.

DMA #	Description	Area (AC)	Area (SF)	Imp. %	Runoff Coeff. C	Design Storm Depth (IN)	DCV (CF)	BMP Depth (FT)	BMP Area Reqd. - DCV (SF)	BMP Area Reqd. – Hydromod (SF)	Area Avail. (SF)
1	Catering	0.138	6000	100	0.90	0.85	383	1	383	574	1220
2	Barn	0.069	3000	100	0.90	0.85	191	1	191	287	872
3	Tent Event Space, Swanner house	0.143	6230	100	0.90	0.85	397	1	397	596	860
4	Farm Shop	0.041	1800	100	0.90	0.85	115	1	115	172	743
5	Chapel and Ranch House	0.257	11194	100	0.90	0.85	714	1	714	1071	5000
6	(2) Barns	0.158	21920	100	0.90	0.85	1397	1	1397	2096	2,800
7	Riding Pen	0.045	1963	5	0.15	0.85	21	1	21	32	1963
8	Existing Old Pump House	0.023	981	100	0.90	0.85	63	1	63	94	1000
9	Large Arena	1.205	52500	100	0.90	0.85	3347	1	3,347	5020	6393
10	Small Arena	0.771	33600	5	0.15	0.85	357	1	357	534	33600
11	Riding Pen	0.045	1963	5	0.15	0.85	21	1	21	32	1963
12	Otra Mas Bldg., Caretaker Unit & (2) Barns	0.685	29832	100	0.90	0.85	1902	1	1902	2853	3000
13	Event Barn	0.046	2002	100	0.90	0.85	128	1	128	191	2500
14	Event Barn	0.083	3600	100	0.90	0.85	230	1	230	345	1000
15	Community Building	0.230	10000	100	0.90	0.85	638	1	638	957	1100
16	Food Service	0.022	960	100	0.90	0.85	61	1	61	92	500
17	Patio	0.057	2500	100	0.90	0.85	159	1	159	240	1000

Note: DMAs 7, 10 and 11 are considered essentially pervious and will be constructed with a very small perimeter berm to make these areas self-containing for the 25-year, 24-hour storm event volume per CAFO requirements. This event will infiltrate into the ground as soils in these areas are conducive for infiltration.

Section 6 Hydromodification BMPs

6.1 Points of Compliance

The overflow of each bioretention basin is designated as a Point of Compliance. Therefore, there are 17 points of compliance. The bioretention basins are shown in Figure 4-1.

6.2 Pre-Development (Natural) Conditions

The pre-development condition of the site consists of relatively flat terrain except for the banks leading down to Trabuco Creek which are very steep. Drainage is by sheet flow to the south and southeast to Trabuco Creek. The majority of the site is covered with native grasses, bushes and scattered trees. Remnant citrus trees from the old grove are scattered onsite. Larger trees and heavier vegetation are located in the Trabuco Creek channel.

6.3 Post-Development Conditions and Hydromodification BMPS

As noted in Section 3.5, a Hydrologic Condition of Concern is present in the natural channel adjacent to and downstream of the project site. Therefore, the project is required to comply with the South Orange County hydromodification requirements, which require mitigating 10% of the 2-year event through 10-year event peak flows to within 10% of the existing conditions using a continuous simulation model. The South Orange County Hydrology Model (SOHM) was used to size the hydromodification BMPs. DMAs 7, 10 and 11 are considered essentially pervious and will be constructed with a very small perimeter berm to make this area self-containing for the 25-year, 24-hour storm event volume per CAFO requirements. This event will infiltrate into the ground as soils in these areas are conducive for infiltration.

6.4 Measures for Avoidance of Critical Coarse Sediment Yield Areas

As noted in Section 3.6, the project is not within an area identified as having potential sediment yield in Appendix N.8 of the South Orange County Technical Guidance Document for WQMPs.

6.5 Hydrologic Modeling and Hydromodification Compliance

A SOHM hydromodification model was developed for the pre-development and postdevelopment conditions.

Section 7 Educational Materials Index

Educational 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	☒	Compliance BMPs for Mobile Businesses	☐
Proper Disposal of Household Hazardous Waste	☒	**Other Material**	**Check If Attached**
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 Projects Using Paint	☒		☐

Attachment A: Educational Materials

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?

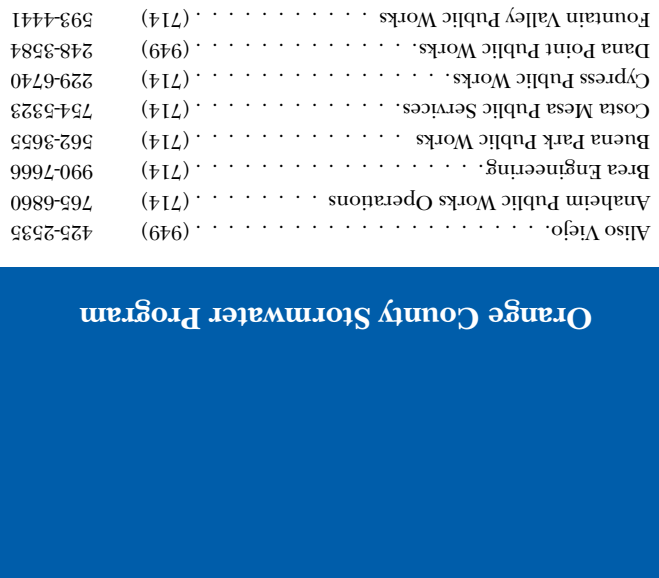
- Most people believe that the largest source of water pollution in urban areas comes from specific sources such as factories and sewage treatment plants. In fact, the largest source of water pollution comes from city streets, neighborhoods, construction sites and parking lots. This type of pollution 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?

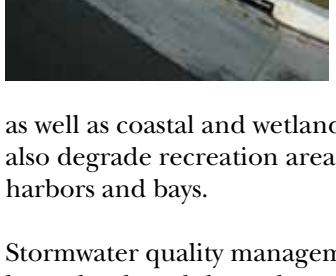
- Anything we use outside homes, vehicles and businesses – like motor oil, paint, pesticides, fertilizers and cleaners – can be blown or washed into storm drains.
- A little water from a garden hose or rain can also send materials into storm drains.
- Storm drains are separate from our sanitary sewer 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.



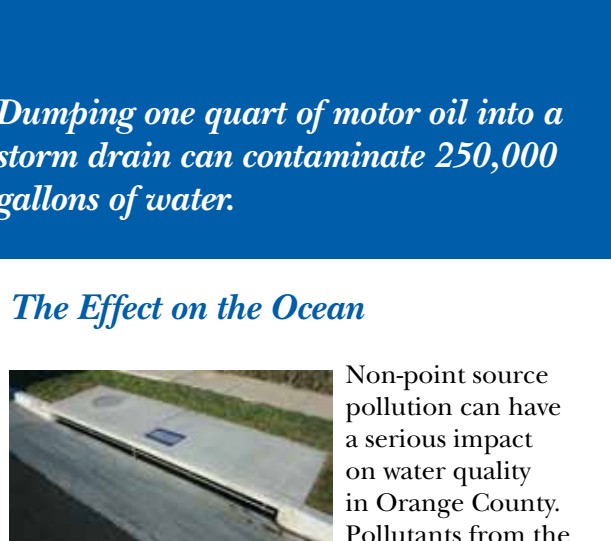
The Effect on the Ocean



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

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)

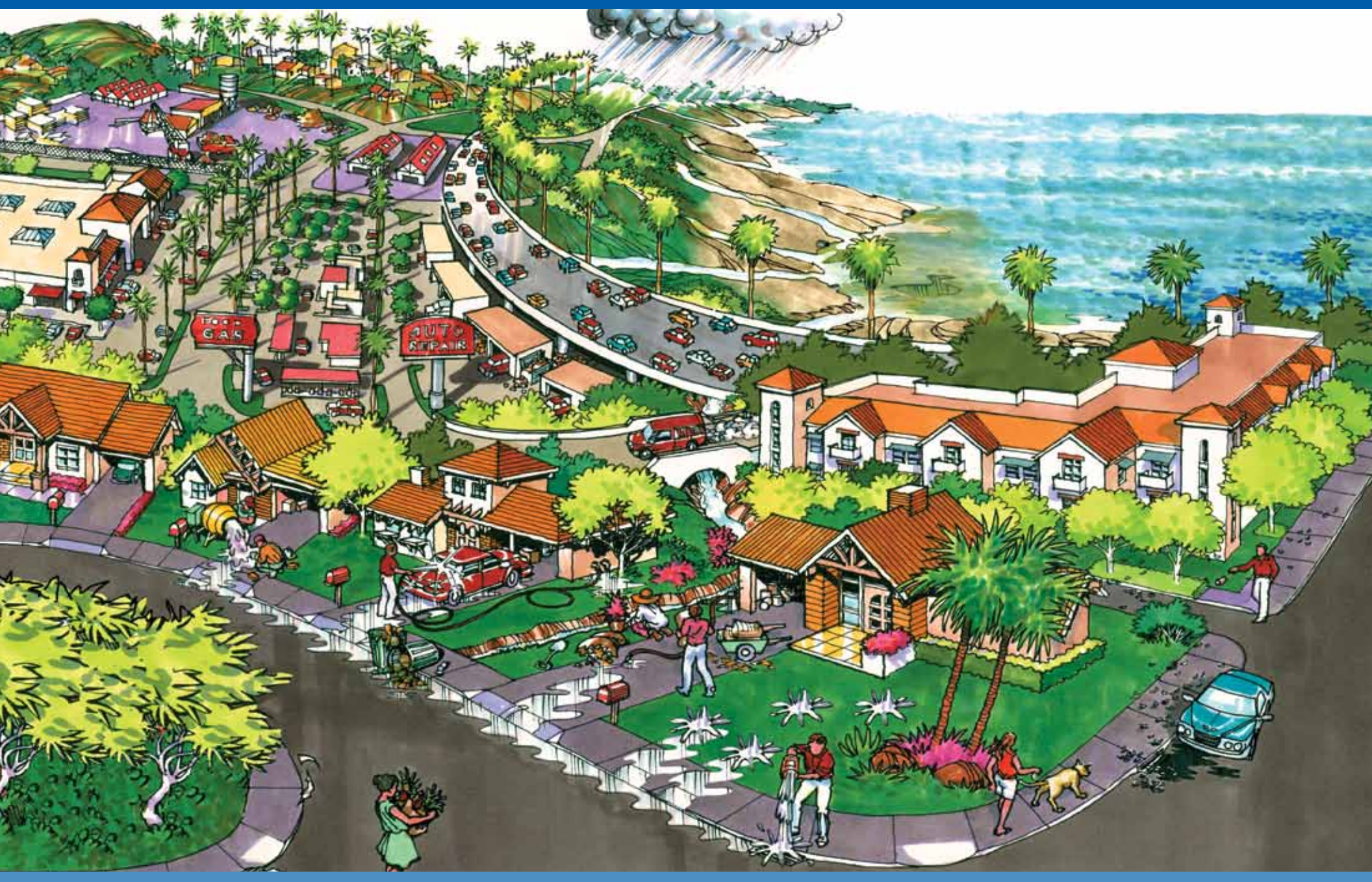
On-line Water Pollution Problem Reporting Form
www.ocwatersheds.com

Printed on Recycled Paper



Orange County Stormwater Program

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

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/rev03/10

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

Orange County Stormwater Program
www.ocwatersheds.com/publiced/

Municipal Water District of Orange County
www.mwdoc.com

University of California Master Gardeners of Orange County
www.uccemg.com

UC Cooperative Extension OC Water Quality and Water Resources
www.ucanr.org/sites/urbanwatermgmt/



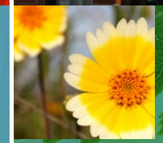
To report a spill, call the Orange County 24-Hour Water Pollution Prevention Reporting Hotline at 1-877-89-SPILL \ (1-877-897-7455)

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

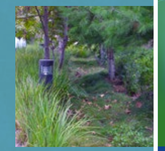






Homeowners Guide for Sustainable Water Use

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

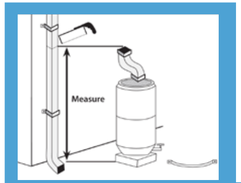
Rainwater harvesting is a great way to save money, prevent pollution and reduce potable water use. To harvest your rainwater, simply redirect the runoff from roofs and downspouts to rain barrels. Rain gardens are another option; these reduce runoff as well as encourage infiltration.

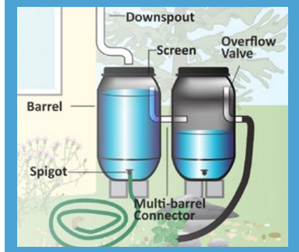
Downspout Disconnection/Redirection

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.



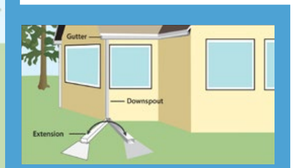


Mosquito growth prevention is very important when installing a rain barrel. The best way to prevent mosquito breeding is to eliminate entry points by ensuring all openings are sealed tightly. If these methods are unsuccessful, products are available to kill mosquito larvae, but that are harmless to animals 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.

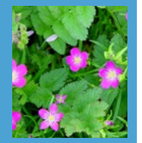
Rain Gardens

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

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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.

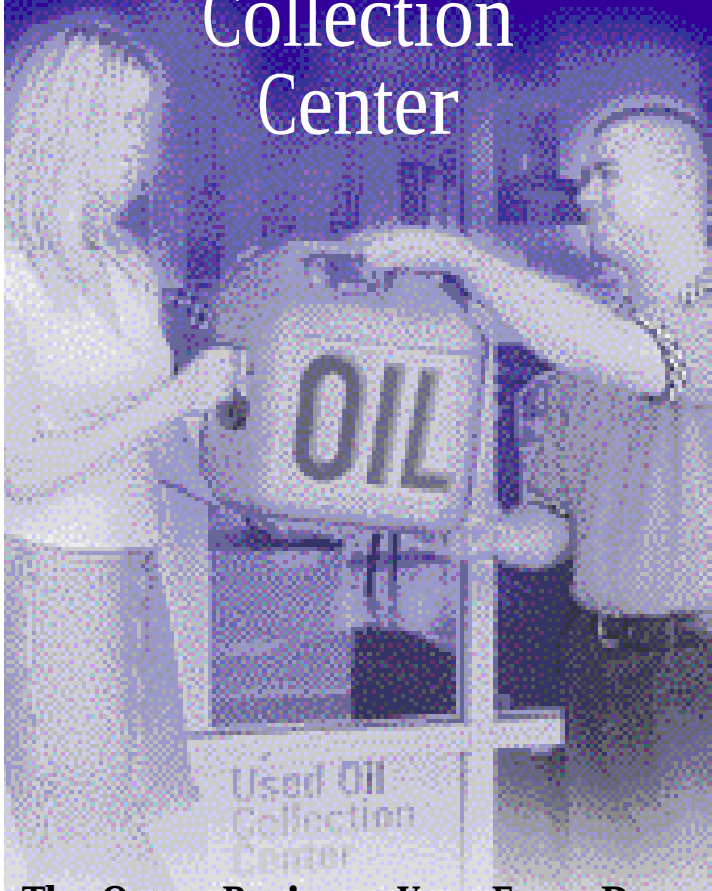
For information about the proper disposal of household hazardous waste, call the Household Waste Hotline at (714) 834-6752 or visit www.oclandfills.com.

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.

Funding for this brochure has been provided in full or in part through an agreement with the State Water Resources Control Board (SWRCB) pursuant to the Costa-Machado Water Act of 2000 (Prop. 13).

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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

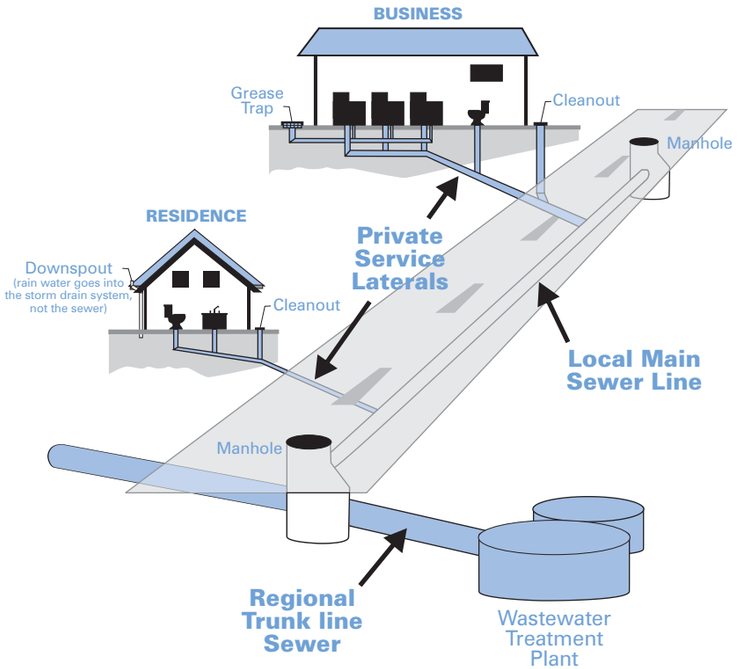
Keep people and pets away from the affected area. Untreated sewage has high levels of disease-causing viruses and bacteria. Call your local health care agency listed on the back for more information.

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:

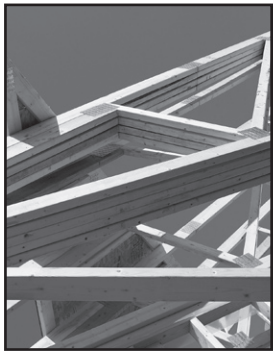
Tips for Home Improvement Projects



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



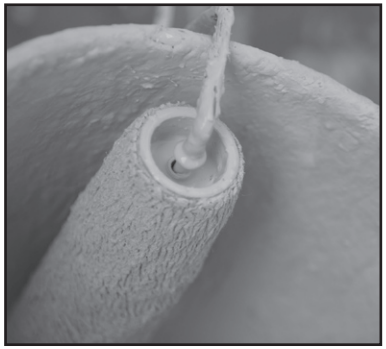
- Schedule projects for dry weather.
- Keep all construction debris away from the street, gutter and storm drain.
- Store materials under cover with temporary roofs or plastic sheets to eliminate or reduce the possibility that rainfall, runoff or wind will carry materials from the project site to the 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 **1-877-897-7455** or visit **www.ocwatersheds.com** to fill out an incident reporting form.

PROJECT Pollution PREVENTION

HORSE CARE

Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is **not treated or cleaned** before entering our waterways and should never contain any pollutants. Horse care can generate numerous waste products, which can become pollutants such as bacteria, nutrients, chemicals, and other harmful substances. If not properly managed, these pollutants can be transported to Orange County's creeks, rivers, and ocean through our storm drain system.



Who is H_2OC?

H_2OC is YOU. H_2OC is also a cooperative stormwater program which includes all 34 cities in Orange County, the County of Orange, and Orange County Flood Control District (OCFCD). Clean and healthy beaches, creeks, rivers, bays, wetlands, and ocean are important to Orange County. H_2OC provides resources to residents and businesses to encourage personal action and prevent polluted runoff from entering our waterways.

Join Us

Visit **h2oc.org** to learn more about runoff, water pollution, and how you can be the solution to runoff pollution and protect our water resources.

Contact

24-hour Pollution Reporting Hotline:
877-89-SPILL (877-897-7455)

24-hour Pollution Reporting Website:
myOCeServices.ocgov.com

For emergencies, dial 911

*ocerws.ocpublicworks.com

PROPER TECHNIQUES FOR HORSE CARE TO PROTECT OUR WATERWAYS



H_2OC STORMWATER PROGRAM

HORSE CARE BMPs

Follow these Best Management Practices (BMPs) to prevent pollutants from harming our waterways.

Grooming

- Wash horses in an area that drains to the sanitary sewer, a vegetated area, or over gravel to prevent runoff pollution.
- Minimize water use when washing and use a spray nozzle with an automatic shutoff. Turn off the water when not in use.
- Elevate the wash area from the surrounding ground.
- Follow all instructions on horse care product bottles and use as little as possible.
- Clean up spills immediately to prevent chemicals from flowing into the storm drain.

Pasture Management

- Sweep or shovel horse holding areas daily instead of hosing to prevent waste from flowing into the storm drain or a waterbody.
- Clean paddocks at least twice per week during the rainy season (October – April) and once per week the rest of the year.
- Plant vegetated buffer strips to separate corrals, paddocks, and manure storage areas from waterways.

Grazing

- To prevent erosion, establish healthy and vigorous pastures, and replant bare areas to achieve at least three inches of leafy material.
- Prevent overgrazing by rotating pasture usage to allow grasses to regrow.
- During rainfall, feed horses indoors to prevent runoff from coming into contact with eventual horse waste.

Collection and Storage

- Store horse manure in an enclosed container and under a roof or tarp to prevent runoff when it rains.
- Locate manure storage areas away from storm drains and waterbodies.
- Slope the ground away from manure storage areas.

Use and Disposal

- Compost soiled bedding and manure. Check with your local waste hauler for more information.
- Donate composted material to local greenhouses, nurseries, and botanical parks.
- Transport manure to topsoil companies or composting centers.

Facility Design

- If you are constructing or re-building a stable, refer to the County's website* for information about facility design.

For more equestrian BMPs, visit
https://ocerws.ocpublicworks.com/sites/ocpwocerws/files/2021-07/Equestrian_BMP_Manual.pdf
or scan the QR code.











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).

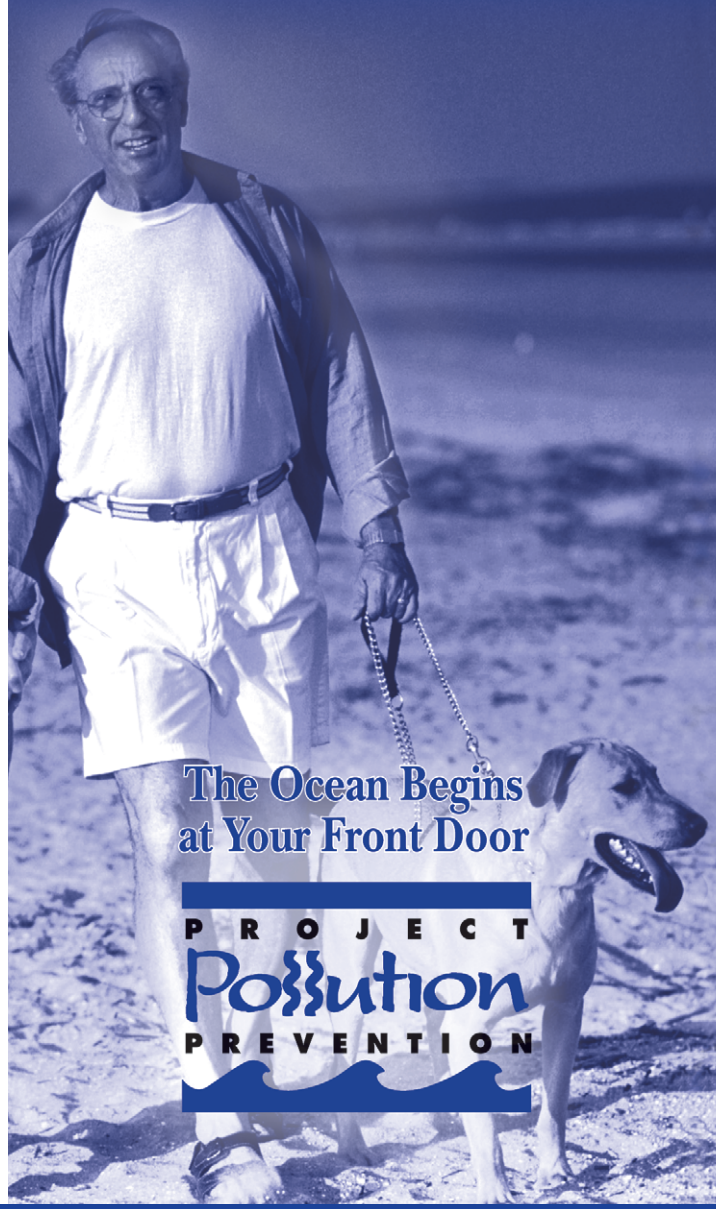
For emergencies, dial 911.

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.

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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 **1-877-897-7455** 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 **1-877-897-7455** or visit **www.ocwatersheds.com** to fill out an incident reporting form.

PROJECT Pollution PREVENTION

How Can Food Service Establishments Prevent Water Pollution?

The food service industry is required to help prevent water pollution by using best management practices (BMPs) such as:

- Disposing food waste, grease and oil
- Cleaning up spills
- Maintaining dumpster receptacles
- Disposing washwater
- Cleaning floors and floor mats
- Providing regular employee training on spill cleanup procedures and washing practices

Look inside for more information on how to prevent runoff pollution.



Who is H_2OC?

H_2OC is YOU! H_2OC is also a cooperative stormwater program which includes all 34 cities in Orange County, the County of Orange, and Orange County Flood Control District (OCFCD). Clean and healthy beaches, creeks, rivers, bays, wetlands, and ocean are important to Orange County. H_2OC provides resources to residents and businesses to encourage personal action and prevent polluted runoff from entering our waterways.

Join Us

Visit **h2oc.org** to learn more about runoff, water pollution, and how you can be the solution to runoff pollution and protect our water resources!

Contact

24-hour Pollution Reporting Hotline:
1-877-89-SPILL (1-877-897-7455)

24-hour Reporting Website:
myOCeServices.ocgov.com

For emergencies, dial 911

Best Management Practices For Businesses

WATER POLLUTION AND THE FOOD SERVICE INDUSTRY

YOU ARE THE SOLUTION TO RUNOFF POLLUTION



H_2OC STORMWATER PROGRAM

How is Water Quality Affected By Food Service Establishments?

The food service industry generates a variety of waste products which can become pollutants. These include trash, cooking oil and grease, food scraps, and cleaning chemicals. If these waste products are not properly managed, rain, washwater, and wind can transport them to Orange County's creeks, rivers, and ocean through our storm drain system. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before it is released into our creeks, rivers, and ocean and must never contain washwater, trash, grease, or other pollutants.



Here are BMPs for the food service industry to help keep our waterways clean:

FOOD WASTE DISPOSAL

- Scrape food waste off serving tables, plates, utensils, pots, food preparation and cooking areas, and dispose of it in the food waste (organics) bin or trash.
- Never put food waste down the drain. Food scraps often contain grease, which can clog sewer pipes and result in sewage backups and overflows.



GREASE & OIL DISPOSAL

- Dispose of used grease and oil in a covered, secure grease storage container. Never put oil or grease down the drain.
- Only fill your grease storage container to the manufacturer specified maximum volume and always keep the area clean.
- Regularly maintain grease control devices (like grease traps and interceptors) per the requirements of the City and local sanitation district.
- Keep service and maintenance records on site and readily available for inspection by regulatory agencies.
- For more information about proper grease and oil disposal, contact CalRecycle.ca.gov or your local sanitation district.

SPILL CLEANUP

- Control, contain, and clean up all spills.
- Never hose a spill.
- Clean up spills immediately with materials like rags, mops, or absorbents.
- Have spill containment and cleanup kits readily available and train all employees on how to use them.
- If any spill leaves your site, report it through the 24-hour Reporting Hotline or Website (see contact information on back panel).



DUMPSTER MAINTENANCE

- Sweep and pick up all debris around the dumpster daily.
- Always keep the lid on the dumpster closed when not in use.
- Never pour liquids into the dumpster or hose it out.
- Contact your waste and recycling service to repair or replace leaking or damaged dumpsters.
- When steam cleaning is required, ensure that washwater is contained, collected, and disposed in compliance with all codes. Washwater is prohibited from draining into the alley, parking lot, street, gutter, or storm drain.



WASHWATER DISPOSAL

- Dispose of washwater in an indoor mop sink or floor drain, preferably connected to the grease interceptor.
- Never dispose of washwater in the alley, parking lot, street, gutter, or storm drain.



FLOOR & FLOOR MAT CLEANING

- Sweep floors and floor mats regularly, discarding the debris into the trash.
- Clean all mats in a designated area such as an indoor mop sink or floor drain. Never allow floor or floor mat washwater to flow to the alley, parking lot, street, gutter or storm drain.



Preventing water pollution at your commercial/industrial site

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many landscape and building maintenance activities can lead to water pollution if you're not careful. Paint, chemicals, plant clippings and other materials can be blown or washed into 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 pour soap or fertilizers into the ocean, so why would you let them enter the storm drains? Follow these easy tips to help prevent water pollution.

Some types of industrial facilities are required to obtain coverage under the State General Industrial Permit. For more information visit: **www.swrcb.ca.gov/stormwater/industrial.html**

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).

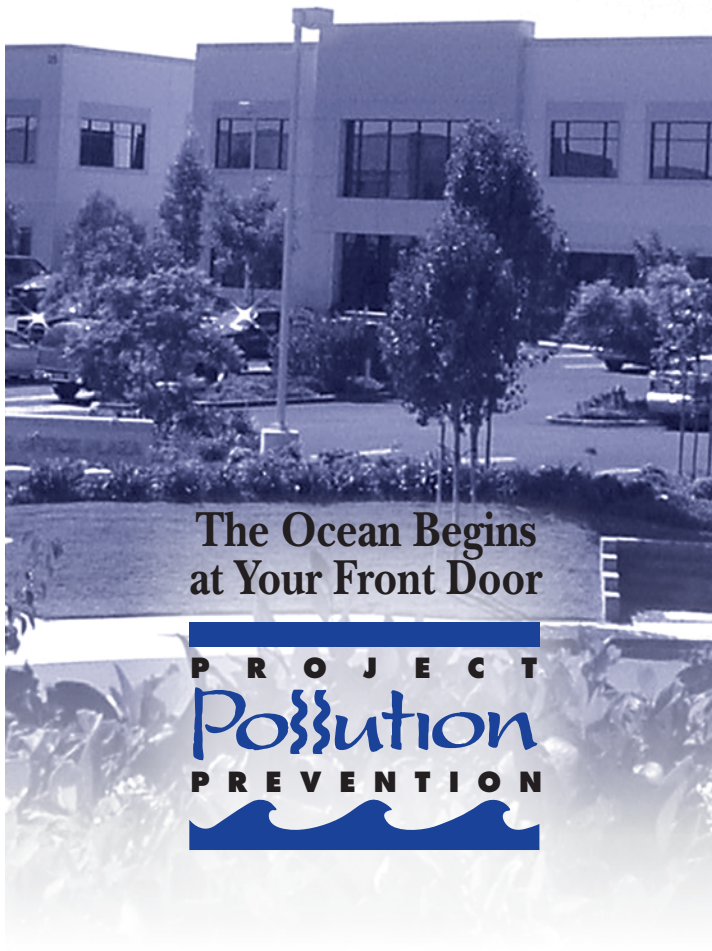
For emergencies, dial 911.

RECYCLE USED OIL

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Help Prevent Ocean Pollution:

Proper Maintenance Practices for Your Business



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Proper Maintenance Practices for your Business

Landscape Maintenance

- Compost grass clippings, leaves, sticks and other vegetation, or dispose of it at a permitted landfill or in green waste containers. Do not dispose of these materials in the street, gutter or storm drain.
- Irrigate slowly and inspect the system for leaks, overspraying and runoff. Adjust automatic timers to avoid overwatering.
- Follow label directions for the use and disposal of fertilizers and pesticides.
- Do not apply pesticides or fertilizers if rain is expected within 48 hours or if wind speeds are above 5 mph.
- Do not spray pesticides within 100 feet of waterways.
- Fertilizers should be worked into the soil rather than dumped onto the surface.
- If fertilizer is spilled on the pavement or sidewalk, sweep it up immediately and place it back in the container.

Building Maintenance

- Never allow washwater, sweepings or sediment to enter the storm drain.
- Sweep up dry spills and use cat litter, towels or similar materials to absorb wet spills. Dispose of it in the trash.
- If you wash your building, sidewalk or parking lot, you **must** contain the water. Use a shop vac to collect the water and contact your city or sanitation agency for proper disposal information. Do not let water enter the street, gutter or storm drain.
- Use drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of materials in the trash.
- Use a ground cloth or oversized tub for mixing paint and cleaning tools.
- Use a damp mop or broom to clean floors.
- Cover dumpsters to keep insects, animals, rainwater and sand from entering. Keep the area around the dumpster clear of trash and debris. Do not overfill the dumpster.
- Call your trash hauler to replace leaking dumpsters.
- Do not dump any toxic substance or liquid waste on the pavement, the ground, or near a storm drain. Even materials that seem harmless such as latex paint or biodegradable cleaners can damage the environment.

Never Dispose of Anything in the Storm Drain.

- Recycle paints, solvents and other materials. For more information about recycling and collection centers, visit **www.oclandfills.com**.
- Store materials indoors or under cover and away from storm drains.
- Use a construction and demolition recycling company to recycle lumber, paper, cardboard, metals, masonry, carpet, plastic, pipes, drywall, rocks, dirt, and green waste. For a listing of construction and demolition recycling locations in your area, visit **www.ciwmb.ca.gov/recycle.**
- Properly label materials. Familiarize employees with Material Safety Data Sheets.

PROJECT Pollution PREVENTION

Attachment B: Operations and Maintenance Plan

An Operation and Maintenance Plan is not included at this time since this is a Preliminary WQMP document. The Final WQMP will include a detailed Operation and Maintenance Plan that includes the long term BMP maintenance requirements and responsibilities to ensure sustained performance of BMPs included in the project.

Attachment C: Worksheets

The Orange County Technical Guidance Document was used to calculate the DCV for each DMA and to ensure that the bioretention basin for each DMA was sized correctly to fully address the DCV and hydromodification requirements for each DMA. The table provided in Section 5.2 summarized the calculation of the DCV for each DMA as well as the area require (footprint size) of each BMP. The Final WQMP will include a calculation worksheets for each BMP.