DANA POINT

WATER QUALITY LOCAL IMPLEMENTATION PLAN

JANUARY 2019

UPDATED JULY 2020

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1 INTRODUCTION

1.1 REGULATORY REQUIREMENTS

All cities in Orange County, including the City of Dana Point (City), have municipal separate storm sewer systems (MS4s; also known as "storm drain systems") that are distinct from sanitary sewer systems. Runoff water (stormwater) that enters a storm drain system, which is designed to prevent flooding and protect lives and property, flows to local creeks and other water bodies without first being directed to a wastewater treatment plant (in most circumstances). This is in contrast to wastewater, which is comprised of water from toilets, showers, and other plumbing fixtures that flows in sanitary sewer systems, which is directed to a wastewater treatment plant. The runoff that eventually reaches the storm drain systems may first pick up a variety of pollutants as it flows over roads, parking lots, outdoor storage areas, landscaped areas, and other developed areas. Therefore, municipal agencies that operate storm drain systems are subject to permits that require actions to reduce pollution in discharges to storm drain systems and work to improve water quality in associated waterbodies.

Storm drain system permits are a component of the National Pollutant Discharge Elimination System (NPDES) permitting program, which is authorized by the Federal Clean Water Act (CWA). The State of California administers the NPDES program within the State and the San Diego Regional Water Quality Control Board (RWQCB) oversees NPDES permits within San Diego County and the southern portions of Orange and Riverside Counties. The RWQCB issued the first regional NPDES stormwater permit regulating all municipalities in Orange County (collectively, "Copermittees") in 1990. Revised versions were issued in 2003 and 2009, with each successive permit including increasingly prescriptive requirements. The most recent permit, RWQCB Order No. R9-2013-0001, as amended by R9-2015-0001 and R9-2015-0100 NPDES Permit No. CAS0109266 (termed Fifth Term Permit, also referred to as the "Regional Permit" and/or "MS4 Permit"), increases the focus on watershed-level planning and achieving water quality outcomes. The MS4 Permit preserves some of the programmatic specificity of past permits, but it generally allows Copermittees more discretion in determining how resources are allocated. This approach is intended to allow the City and other regulated agencies more flexibility in directing efforts toward the issues identified as the highest priorities in each Watershed Management Area (WMA), in this case the San Juan Hydrologic Unit. Addressing these highest priorities often involves meeting numeric water quality targets. These targets are more stringent metrics than those established by previous stormwater permits, which mostly used programmatic achievements to determine compliance.

The MS4 Permit requires the City of Dana Point and the other ten (10) municipal agencies and County of Orange in southern Orange County to prepare a watershed-based Water Quality Improvement Plan (WQIP) for the San Juan Hydrologic Unit (901.00), and a companion City-specific Local Implementation Plan (LIP). The WQIP identifies the highest priority water quality conditions, corresponding numeric

goals, and strategies that the responsible agencies will implement to meet the goals. The City's LIP is prepared under the guidance and structure of the County-wide Drainage Area Management Plan (DAMP), and as an appendix thereof, and identifies the specific activities that the City will implement to improve water quality, based on the goals and strategies outlined in the watershed-based WQIP. This LIP is the equivalent of the Jurisdictional Runoff Management Plan (JRMP) as referenced in the Permit and the terms LIP and JRMP are used interchangeably. Although the LIP is intended to serve as the basis for City compliance during the entire period of the Fifth Term Permit, the LIP is subject to modifications and updates as the City determines necessary, or as directed by the Regional Board.

Currently, some of the Co-Permittees, including the City, are pursuing a subvention of funds from the State to pay for certain activities required by Order No. R9-2009-0002 (Fourth Term Permit) and Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100 (Fifth Term Permit), including some of the activities in this LIP. Nothing in this LIP should be viewed as a waiver of those claims or as a waiver of the rights of the City to pursue a subvention of funds from the State to pay for certain activities required by the Fourth and Fifth Term Permits, including the implementation of certain activities in this LIP. In addition, several Co-Permittees, including the City, have filed petitions with the State Water Resources Control Board (SWRCB) challenging some of the requirements of the Fifth Term Permit. Nothing in this LIP should be viewed as a waiver of those claims. Because the SWRCB has not issued a stay of the Fifth Term Permit, Co-Permittees must comply with the Fifth Term Permit's requirements while the SWRCB process is pending.

1.2 PURPOSE, OBJECTIVE, AND ORGANIZATION

The primary purpose of the LIP is to outline the strategies and supporting activities that the City will implement to reduce the discharge of pollutants from its storm drain system to the maximum extent practicable (MEP).

The main objectives of the LIP are as follows:

- To meet the requirements of RWQCB Order No. R9-2013-0001, as amended by R9-2015-0001 and R9-2015-0100;
- To provide a framework for the City's program to reduce the discharge of stormwater pollutants from the MS4 to the MEP; and
- To provide a City-based plan to meet the goals and objectives in the watershed-based WQIP.

The City's LIP is organized as follows:

- Section 1: Introduction. The introduction section discusses the regulatory background leading up to the development of the LIP, objectives of the LIP, and how the LIP integrates with the WQIP. City specific information, including geography, topography, soils, and other characteristics that

make Dana Point unique, as well as land use statistics and a map of the City's storm drain system are included in this section.

- Section 2: Program Management. This section describes the collaborative Orange County Stormwater program, cost-share agreements, and collaborative efforts such as Total Maximum Daily Load programs. This section also describes the departments within the City that have roles and responsibilities for implementation of a compliant and comprehensive water quality program. This section also discusses annual reporting requirements, including the fiscal analysis.

- Section 3: Plan Improvement and Watershed Planning. This section describes the adaptive management process to update and revise the program. It describes the Highest Priority Water Quality Conditions (HPWQC), as identified in the WQIP, and the jurisdictional strategies that will be implemented. Also included are a menu of optional strategies that can be implemented as needed.

- Section 4: Legal Authorities. This section describes the City's legal authority to implement its stormwater program activities, as described in the LIP. This section also describes limitations of the City's jurisdiction and describes the various external entities and agencies that have roles and responsibilities that City coordinates with.

- Section 5: Municipal. This section provides a discussion of the City's municipal properties and Best management Practices that are implemented, including street sweeping, landscape maintenance, trash controls, storm drain maintenance, and maintenance of the City's structural BMPs including the Salt Creek Ozone Treatment Facility, inlet filters, and nuisance water diversions.

- Section 6: Outreach, Training & Public Participation. This section provides a discussion of the City's educational outreach, staff training and public participation program. The City's public outreach program includes activities that the City implements to foster awareness and encourage behavioral changes relating to water quality. This section describes the various target audiences and associated programs.

- Section 7: Development. This section describes the water quality requirements for development projects that are prescribed in the Permit. Projects that meet certain "priority project" criteria must develop a Water Quality Management Plan (WQMP) that describes the project's stormwater management Best Management Practices (BMPs), including retaining stormwater on site and biofiltration design requirements. This section also describes the water quality requirements for all projects, including those that do not meet the criteria for a "priority" project. The City is required to review and approve project WQMP's, maintain an inventory of WQMP's and conduct inspections and maintenance verifications to ensure that the BMPS are functional and being property maintained by the respective project owners.

- Section 8: Construction. This Section describes the City's program to inventory, inspect, and enforce, as necessary, specific construction BMP requirements for all construction projects, including both private construction projects and City maintenance and Capital Improvement Projects (CIP) that have a potential to discharge pollutants, including sediment. Inspection frequencies, methods and documentation requirements are discussed.

- Section 9: Existing development. This Section describes the City's program to inventory, inspect, and enforce, as necessary, minimum BMP requirements for residential, commercial and industrial facilities, and also specifies requirements for mobile businesses.

- Section 10: Illicit Discharges and Illicit Connections. This section describes the processes by which illicit discharges and illicit connections (IC/IDs) are detected by the City. This includes receiving, responding, and tracking of potential stormwater ordinance violations reported by the general public and City personnel, as well as the City's Dry Weather Major MS4 Outfall Discharge Monitoring Program. This section also includes the City's new Enforcement Response Plan (required per the Permit) and describes the City's enforcement process.

- Section 11: Water Quality Monitoring. This section summarizes the WQIP Monitoring and Assessment Program (MAP).

The list of strategies the City will implement to address the HPWQC identified in the WQIP and meet numeric goals is provide in Exhibit 3.1 of this LIP. These strategies include the City's baseline programs as well as the additional commitments necessary to meet the goals within the timelines specified in the WQIP.

The WQIP has identified pathogen health risk, unnatural water balance/flow regime and channel erosion/geomorphologic impacts as the highest priority water quality conditions (HPWQC) for the South Orange County Watershed Management Area and thus has established associated numeric goals and strategies to address them. The LIP serves as the City's primary mechanism for implementing its WQIP strategies.

1.3 ENVIRONMENT SETTING

1.3.1 Geography and Climate

The City of Dana Point lies on the Pacific Coast in Orange County, approximately 65 miles northwest of the City of San Diego and 60 miles southeast of the City of Los Angeles. The City is bounded to the west by the Pacific Ocean, to the north by the Cities of Laguna Beach and Laguna Niguel, to the east by San Juan Capistrano, and to the south by the City of San Clemente. The City covers an area of approximately 6.5 square miles with a population of just over 36,000 people.

The City of Dana Point is characterized by approximately seven and one-half miles of prominent coastal bluffs and rolling hills along the Pacific Ocean. Most noteworthy of these bluffs is a unique promontory

known as the "Headlands" which overlooks Dana Point Harbor, one of the most significant man-made alterations of the Orange County coastline. **Figure 1.1** illustrates the regional location of the City.

Orange County's Mediterranean climate involves hot dry summers and mild winters. Nearly all the annual precipitation falls in only a few storm events between October and April. During times of drought, it is not unusual for years to pass between major rainfalls. It is also common for successive storms of varying durations and intensities to compound their effects, with the heavy rainfall of the second or third storm creating the most severe flood conditions. On average, Orange County only receives approximately 12 to 13 inches of rain per year.

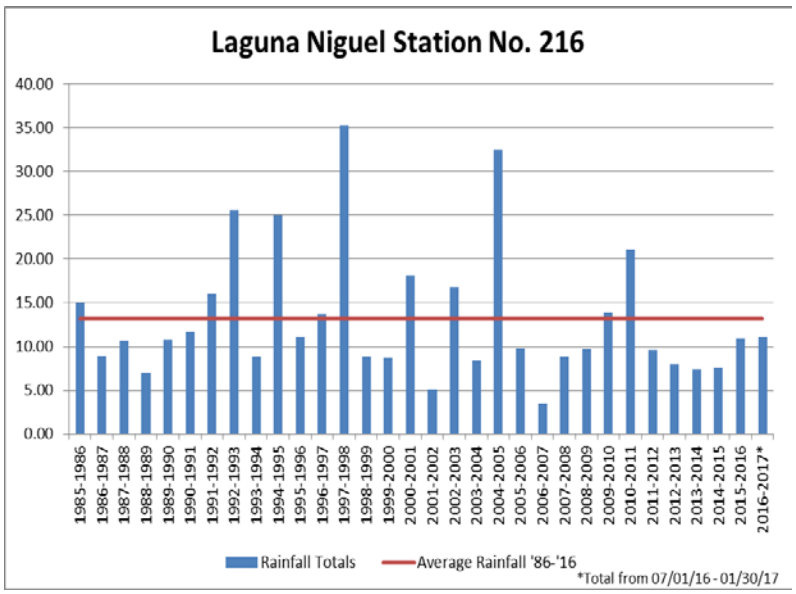


Figure 1.1: Regional Map of South Orange County Watershed Management Area

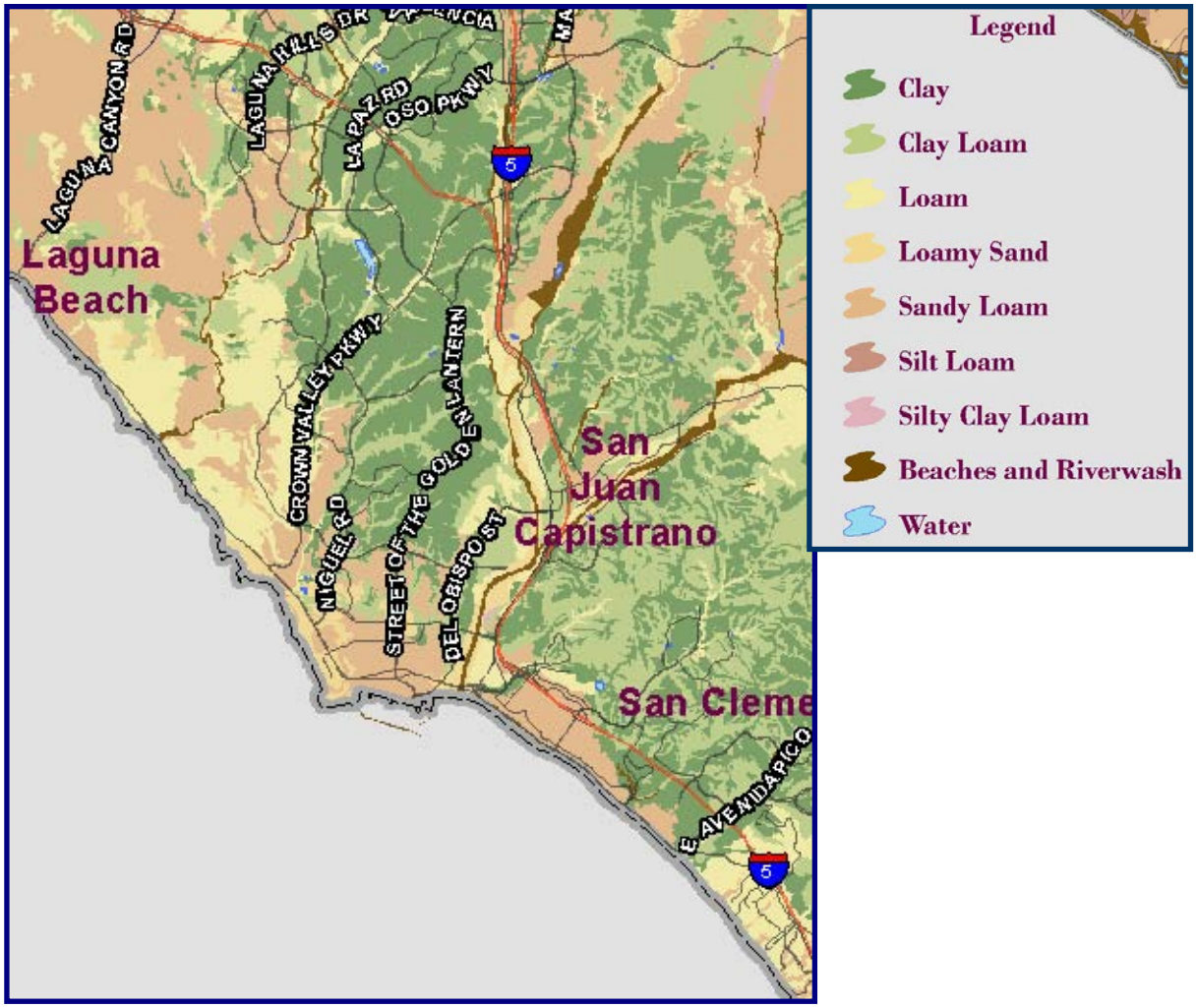
1.3.2 Topography, Soils, and Geology

Dana Point is in a unique topographic setting, located on a coastal terrace with elevations ranging from sea level to approximately 350 feet in the coastal foothills. The varying topography includes prominent coastal bluffs, which have historically demonstrated high risk of landslides and surficial failures.

In general, the soils in Dana Point vary with predominantly a mix of clay, clay loam, loamy sand, and sandy loam, exhibiting expansive and low infiltration characteristics in many areas. **Figure 1.2** is an excerpt from Natural Resources Conservation Service Surface Soil Textures of Orange County, showing general surface soil textures in Dana Point.

For more detailed information, please refer to the Soil Survey of Orange County and Western Part of Riverside County, California, available at http://websoilsurvey.nrcs.usda.gov.

Figure 1.2: Surface Soil Textures of Orange County, Dana Point Area



The geology of Dana Point consists of predominantly alluvial flood plain and fan deposits, some older marine and non-marine terrace deposits, Capistrano Formation, Monterrey Formation along the coast, south of San Juan Creek, and some San Onofre Breccia. These formations tend to have high salinity, phosphorus and metals (most notably cadmium, nickel, zinc, selenium and manganese).

A detailed Geology map is available at the following link:
http://www.conservation.ca.gov/cgs/rghm/rgm/Pages/preliminary_geologic_maps.aspx

There are areas with elevated groundwater and springs which are naturally high in Total Dissolved Solids (TDS) and natural seeps are common throughout the City.

1.3.3 Watersheds and Major Surface Water Bodies

Watersheds are general areas that drain to a single point or receiving water. The City of Dana Point generally falls within two major watersheds: the San Juan Creek and the Salt Creek watershed. Other small coastal drainages flow to the Harbor and Pacific Ocean.

San Juan Creek is a large 177 square mile watershed (approximately 158 square miles in Orange County, the remainder being in Riverside County and mostly undeveloped) watershed, shared by seven agencies including: Dana Point, Laguna Hills, Laguna Niguel, Mission Viejo, Rancho Santa Margarita, San Juan Capistrano and the County of Orange. The headwaters begin at the Santa Ana Mountains. The lower portion of San Juan Creek is a concrete flood control channel with a soft bottom. The levee failed in 2005 just upstream of the Dana Point boundary due to a severe storm and has subsequently been repaired to reinforce the damaged portion of the levy. San Juan Creek empties into a natural, tidally-influenced scour pond that seasonally berms up during the dry season prior to reaching the Pacific Ocean at Doheny State Park Beach. The area is a bird sanctuary and sees a high population of birds most of the year. The area of this watershed in Dana Point is referred to as Lower San Juan Creek HSA in the WQIP.

Salt Creek is a relatively smaller watershed, approximately six square miles, shared by the City of Laguna Niguel, County of Orange and Dana Point. The lower portion of Salt Creek has both natural and concrete lined portions, and is known to be naturally high in TDS; hence the name. Salt Creek also empties into a natural, tidally-influenced scour pond that is very dynamic due to the changing tide and surf. This area is also a designated bird sanctuary and sees a high population of birds much of the year. Salt Creek, combined with some of the other coastal drainage areas, are referred to as Dana Point HSA in the WQIP.

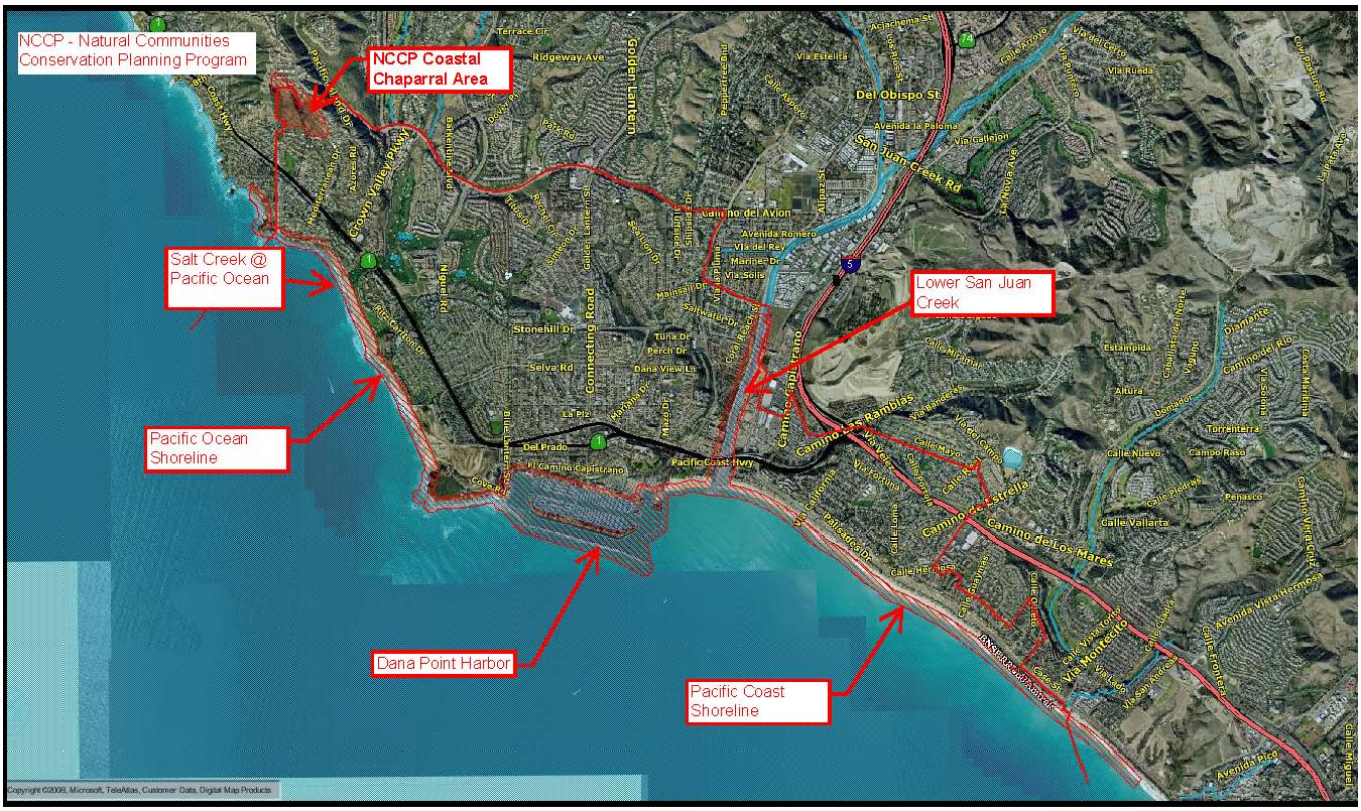
The San Diego Regional Board defines Environmentally Sensitive Areas (ESAs) as those areas that include, but are not limited to:

- All CWA Section 303(d) impaired waters (see below)
- Areas designated as Areas of Special Biological Significance by the SWRCB in the Water Quality Control Plan for the San Diego Basin Plan
- State Water Quality Protected Areas

- Water bodies designated with the RARE Beneficial Use category by the SWRCB in the Basin Plan (RARE)
- Areas designated as preserves or their equivalent under the Natural Communities Conservation Planning Program (NCCP)
- Any other ESAs identified by the City.

Figure 1.3 shows the ESAs within the City of Dana Point.

Figure 1.3: Environmentally Sensitive Areas (ESAs), Dana Point



1.4 LAND USE

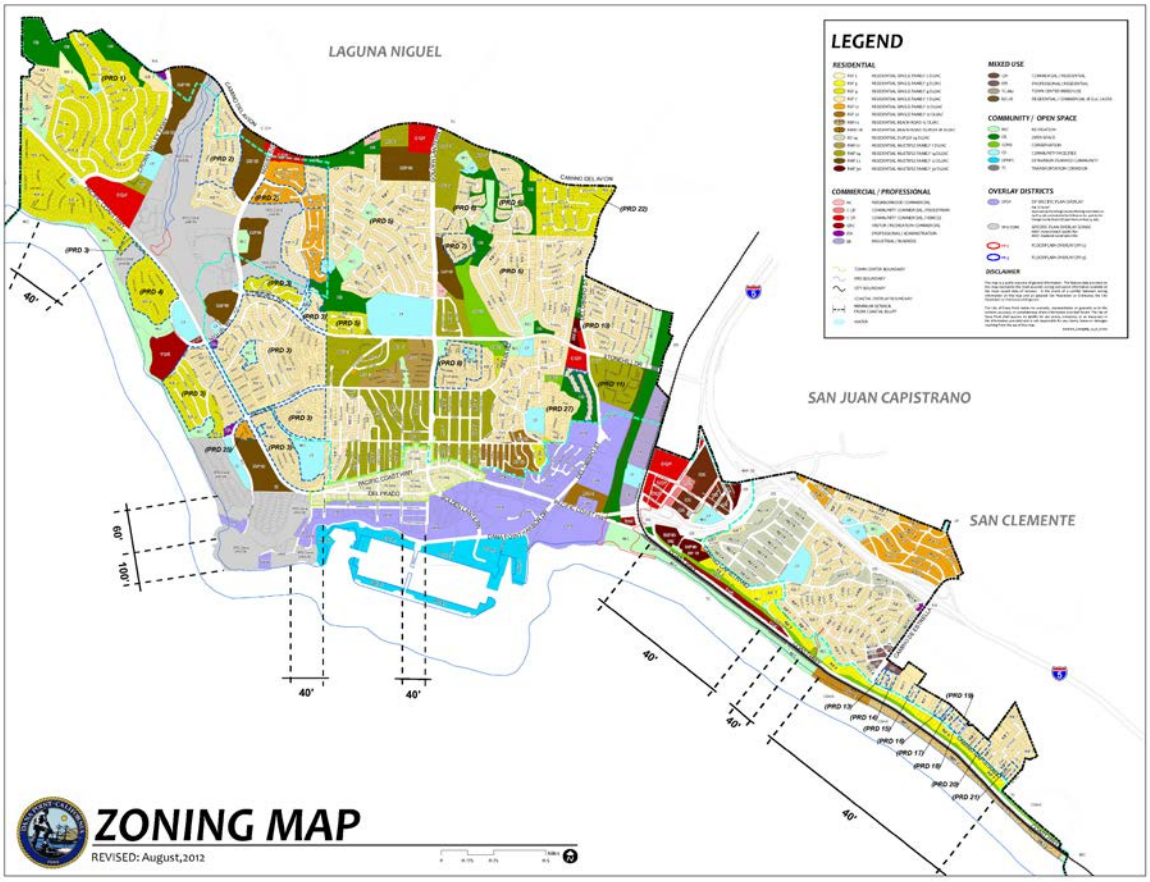
The Land Use of the City of Dana Point is predominantly residential, scattered with parks/open space, and a small amount of commercial area. Harbor marine land, owned and operated by the County of Orange, lies in the coastal center of Dana Point. Over seventy-five private homeowner's associations (HOAs) comprise between one third to one half of the area of the City. California's main highway, Interstate 5 owned and operated by Caltrans, runs north/south through the City, as does Pacific Coast Highway, which is California's historic scenic route throughout the state (portions also owned and operated by Caltrans). The City of Dana Point was incorporated in 1989.

The City is essentially built-out with most development occurring in the 1980s and 1990s prior to the imposition of more aggressive urban runoff controls in the Third and Fourth Term Permits. The City will

see, however, redevelopment projects, including the Town Center Revitalization (recently completed) and the Harbor Revitalization. The City's Zoning Map is provided as **Figure 1.3**.

There is a sewage treatment plant, which is owned and operated by the South Orange County Wastewater Authority (SOCWA) and a Groundwater Recovery Facility owned and operated by South Coast Water District located within City limits.

Figure 1.4: City of Dana Point Zoning Map



1.5 OTHER JURISDICTIONS

Dana Point is a relatively small City and it is important to note that there are many other agencies that own and/or operate and maintain areas and facilities within the City. Dana Point does not own, operate or maintain any beaches (with the exception of a sliver of coastline under Harbor Point Park), public sanitary sewers or water mains, or the following facilities within the City:

- Salt Creek County Beach, Dana Strands Beach, Capistrano County Beach, Dana Point Harbor (and all associated commercial areas), Baby Beach, and Poche County Beach are owned and operated by the County of Orange. Although Poche Beach is located in City of Dana Point limits, the

watershed draining to the beach is primarily in San Clemente and therefore watershed activities are focused in San Clemente.

- Monarch Beach is owned and operated by the Monarch Bay Association.

- The California Department of State Parks owns, operates and maintains Doheny State Park Beach.

- Capistrano Bay District owns and operates Capistrano Bay District Beach.

- Orange County Flood Control District owns, operates, and maintains the flood control channels within the City, including Salt Creek and San Juan Creek.

- The County of Orange operates and maintains the Orange County Corporation Yard on Del Obispo.

- South Coast Water District (SWCD) and Moulton Niguel Water District (MNWD) own, operate, and maintain the water and sewer mains throughout the City. SCWD owns, operates, and maintains their maintenance yard and a 30-acre parcel adjacent to San Juan Capistrano.

- South Orange County Wastewater Authority (SOCWA) owns, operates, and maintains the wastewater treatment facility and the plant's outfall, located approximately two miles off the coast of Doheny State Beach.

- Caltrans owns, operates, and maintains Interstate-5 and the Highway 1/Pacific Coast Highway off ramp over San Juan Creek.

- The Orange County Fire Authority (OCFA) owns, operates, and maintains Stations 29 & 30 in the City of Dana Point.

- Capistrano Unified School District owns, operates, and maintains various school facilities throughout the City, including a bus yard.

- SDG&E owns various electrical and gas facilities, including the Southern California Gas Yard on Del Obispo, just north of PCH.

- The County of Orange owns, operates, and maintains a branch library in the City of Dana Point.

2 PROGRAM MANAGEMENT

2.1 INTRODUCTION

Program management activities conducted by the City of Dana Point to implement the City's Local Implementation Plan (LIP) involve following:

- Coordination with the Principal Permittee and other co-permittees on program development or the Total Maximum Daily Load (TMDL) related work (explained in more detail herein), common program implementation, such as monitoring, public education, Water Quality Management Plan (WQIP), fiscal resources for shared budgets under the Implementation Agreement(s), and overall program direction through various committees, such as the General Permittee Committee, Technical Advisory Committee, the San Juan Creek/Dana Point Coastal Streams Watershed Committee, and South Orange County Watershed Management Area (SOCWMA);
- Coordination with the Principal Permittee and other co-permittees on program development through the WQIP;
- Coordination with internal City departments to implement the LIP;
- Coordinating with external agencies, such as water and sewer districts, the County of Orange, California State Parks, and Caltrans;
- Conducting annual fiscal analysis; and
- Data management and compliance reporting

2.2 COUNTYWIDE COORDINATION

The City's Public Works Department oversees the development, implementation, and administration of the water quality program for the City. In addition to managing internal implementation, the Public Works Department also participates with the County of Orange, Orange County Flood Control District, and other Orange County cities in implementing the countywide NDPES Stormwater Program. An Implementation Agreement among the 36 Permittees defines the roles, responsibilities, and cost sharing formulas governing the program. The Agreement is provided in **Exhibit 2.1**. In addition, the County of Orange, Orange County Flood Control District, the City, and the other San Juan Creek watershed Cities have executed the "Agreement to fund Monitoring, Reporting, Research, Planning, and Compliance Activities in the San Juan Creek Watershed, Agreement D09-043," which defines the program, roles, responsibilities, and cost sharing formulas to implement San Juan Creek TMDL related activities. This Agreement is provided in **Exhibit 2.2**.

Management of the countywide program is performed by means of a committee structure with responsibilities and chairing assigned selectively to the Principal Permittee and the co-permittees. These are as follows:

- City Manager's Water Quality Committee: provides budget and overall program review and governance direction; comprised of several City Managers and is attended by County staff
- City Engineer's Technical Advisory Committee (TAC): serves in a program advisory role to the Permittees and implements policy previously established by the permittees; comprised of a City Engineer, or selected representative, from one city in each of the County Supervisorial Districts and a representative from the County of Orange
- General Co-Permittee Committee: provides a regional forum to update designated representatives from each co-permittee City on program development
- WQIP Committee: provides a county-wide forum to engage co-permittees in WQIP development, implementation, assessment, and adaptive management
- Sub-Committees/Task Forces:
  - Inspection Sub-Committee
  - Legal/Regulatory Authority Task Force
  - Public Education Sub-Committee
  - Water Quality Monitoring & Science Task Force
  - Trash and Debris Task Force
  - Trash Provisions Sub-Committee
  - LIP/PEA Committee and related sub-committees that are initiated on an as-needed basis
  - South Orange County Watershed Management Area Group

2.3 CITY INTERNAL COORDINATION/IMPLEMENTATION

The City's Water Quality Engineer is the water quality program manager and is the main point of contact for correspondence and interaction with other agencies regarding the implementation of the program. Numerous staff in a variety of City departments have roles and responsibilities that help provide for a comprehensive water quality program. Please refer to **Exhibit 2.3** for the City's Simplified Schematic of Water Quality Program Implementation Roles & Responsibilities for a summary of City staff's roles and responsibilities to comply with the various components of the Permit.

Departments, divisions, and various water quality program related functions and activities are summarized below:

Mayor, City Council, and City Council Appointed Water Quality Subcommittee

- Adopt ordinance revisions, as necessary, to carry out MS4 Permit requirements
- Secure fiscal resources and approve budgets
- Provide public participation at City Council meetings
- Review and approve related policies and plans, as needed
- Enter into formal agreements with Co-permittees to define management structure, responsibilities, cost sharing, and decision-making procedures for implementation of the MS4 Permit

City Attorney

- Draft and approve ordinances and assist with enforcement as needed
- Ensure and certify adequate legal authority

City Manager/Assistant City Manager

- Chief Administrative Officer of the City
- Coordinates the implementation of the City Council policy decisions and the initiation of all intergovernmental operations of the City
- Directs the various departments and providing guidance in the implementation of the mandates of the City Council
- Delegate signatory authority to specific staff representatives: Senior Water Quality Engineer & Director of Public Works & Engineering (**Exhibit 2.6)**
- Participate in City Manager's Water Quality Committee

Public Works – Water Quality

- Has delegated signatory authority/Duly Authorized Representative to Senior Water Quality Engineer & Director of Public Works & Engineering (**Exhibit 2.6**)
- Manage the Water Quality Program
- Coordinate with Principal Permittee (County of Orange)
- Maintain inventory and conduct inspections and enforcement of existing industrial facilities
- Maintain inventory and conduct inspections and enforcement of existing high priority commercial facilities
- Maintain inventory and conduct inspections and enforcement of existing residential areas
- Responsible for enforcement of municipal areas and activities, when required

- Provide enforcement support for construction activities
- Respond to public inquiries regarding water quality issues
- Implement Illicit Discharge Detection and Elimination program, including dry-weather monitoring, investigation, enforcement, and assist in spill response
- Coordinate and ensure appropriate training of municipal personnel
- Conduct outreach and education for various audiences such as residents, general public, business owners, and school children
- Maintain the structural post-construction BMP inventory and oversee maintenance tracking activities
- Coordinate help to ensure implementation of MS4 Permit requirements and LIP Programs by City departments
- Prepare annual reports
- Assists with coordination of annual beach and creek clean up(s)
- Report non-compliant sites, including SWRCB Construction General Permit,

  Order 2012-0006-DWQ (CGP) non-filers
- Modify development requirements in Water Quality Management Plan (WQMP), as needed
- Review project for proper implement development requirements consistent with WQMP and the MS4 Permit
- Responsible for Hydromodification Plan implementation
- Assist with existing development enforcement for BMP compliance
- Review shared budgets and prepare internal water quality budget
- Oversee operation and maintenance of Salt Creek Ozone Treatment Facility
- Oversee agreements, permits, and monitoring of City diversions
- Assists in enforcement of Water Quality Ordinance
- Assists in inspection and enforcement of construction site BMPs
- Participates in watershed management activities including San Juan Creek Total Maximum Daily Loads (TMDL) and South Orange County Watershed Management Area (SOCWMA) Programming
- Coordinate actions/procedures with other key City staff members to keep trash and debris out of storm drains and waterways

Public Works – Capital Improvement Projects & Construction Division

- Ensure that public projects meet water quality development standards
- Oversee projects for compliance with erosion control requirements
- Manage City GIS system

Public Works – Streets Division

- Administer street sweeping program
- Operation and maintenance of MS4 and City-owned structural post construction controls
- Provide information for JRMP document updates and JRMP Annual Reports
- Manage pesticides, herbicides, and fertilizers, as applicable
- Assist in maintenance of City GIS system
- Ensure Public Works field staff implement minimum BMPs
- Manage City storm drain stenciling program
- Manage litter control program for City streets and facilities
- Manage City BMPs including inlet filters, diversions, media filters, and trash separation units
- Maintain the City MS4 system

Public Works Department - Administration Division

- Oversee contracts with contractors regarding solid waste disposal and Household Hazardous Waste activities
- Oversee budgets, purchase orders, and contracts
- Provide information for JRMP document updates and JRMP Annual Reports
- Assist in acquisition of education materials to support the goals of the LIP
- Update the City website as needed to support water quality division efforts

General Services & Parks – Parks Division

- Manage pesticides, herbicides, and fertilizers
- Maintain inventory of municipal areas
- Oversee landscaping activities for City facilities (including irrigation)
- Provide information for JRMP document updates and JRMP Annual Reports
- Implement and maintain BMPs at City parks
- Contribute to education and outreach for municipal personnel
- Ensure Parks field staff implement minimum BMPs

- Implement Integrated Pest Control Policy (IPM)
- Manage litter control program at parks and City medians

General Services - Facilities Division

- Provide general, routine maintenance, as well as BMP implementation and maintenance to select City-owned buildings
- Ensure facility staff and contractors implement minimum BMPs

Public Works Department – Engineering Division

- Maintain grading permit construction site inventory
- Verify coverage under State General Construction Permit, when applicable
- Verify coverage under State Industrial General Permit during application process
- Oversees construction BMP inspections and regulates construction sites regarding erosion, structural BMPs, and other site management activities
- Assists in enforcement at construction sites
- Contribute to education and outreach for construction audience
- Provide information for JRMP document updates and JRMP Annual Reports
- Assist in the modification development requirements in WQMP, as needed
- Assist in the implementing development requirements consistent with WQMP
- Maintain inventory of grading permits
- Support structural post-construction BMP compliance and maintenance tracking
- Contribute to education for new development and construction activities
- Provide information for JRMP document updates and JRMP Annual Reports

Community Development Department – Planning Division

- Receive and review development and redevelopment applications
- Coordinate with Water Quality Program Manager to educate and assist applicants in implementing the development water quality requirements
- Responsible for updating the City's General Plan and Environmental Review process, including CEQA and Local Coastal Program
- Responsible for ensuring that land uses in the City comply with the City's Municipal Code, General Plan, Council and Planning Commission policies, and State requirements
- Contribute to education and outreach for new development
- Provide information for JRMP document updates and JRMP Annual Reports

Community Development Department – Building Division

- Process building permits
- Inspect and enforce construction BMPs at building permitted sites
- Maintains building site inventory

Community Development Department - Code Enforcement Department

- Enforce the Dana Point Municipal Code, including the Water Quality ordinance
- Respond to complaints

Fire Department

- Implement and maintain BMPs at fire-related facilities and during fire-related activities (though County of Orange)
- Contribute to education and outreach for municipal personnel

Sheriff's Department (Police Services)

- Assist the City's Water Quality Program Manager and other City staff in addressing vehicle discharges (oil and other fluids) onto City streets

2.4 EXTERNAL COORDINATION/IMPLEMENTATION

As the City of Dana Point is a relatively small City, it is not "full service" and therefore some services are provided by other agencies or Contractors. The City coordinates closely with the external agencies to ensure compliance with the Permit. **Table 2.1**, Surface Runoff & Water Quality Program Related Services & Roles by Other Agencies, highlights the major water quality program related agencies and their main roles or services.

Table 2.1: Surface Runoff and Water Quality Related Services & Roles by Other Agencies

Role/Services Provided	Agency(ies)
Water distribution/maintenance	South Coast Water District Moulton Niguel Water District
Sanitary Sewer distribution/maintenance, including public and private sewer spill response	South Coast Water District Moulton Niguel Water District
Law Enforcement	Orange County Sheriff
Fire protection and related activities services to the City, including Hazardous Material related matters. Own & operate Stations 29 & 30 in Dana Point.	Orange County Fire Authority

Role/Services Provided	Agency(ies)
• Food facilities inspections, • Used Oil Program, • inspects all hazardous waste generators (as CUPA)	Orange County Health Care Agency
Maintenance of the Salt Creek & San Juan Creek flood control channels	Orange County Flood Control District
Owns & operates SOCWA treatment plant, JB Latham plant, located North of Pacific Coast Highway on Del Obispo, in the City of Dana Point.	South Orange County Wastewater Authority (SOCWA)
Own & Operate 1-5 freeway	Caltrans
Own & operate Dana Hills High, R H Dana Elementary, Palisades Elementary & Capo Bus Yard	Capistrano Unified School District
Own & operate Salt Creek County Beach, Capistrano County Beach, Dana Point Harbor Baby Beach, Dana Strand Beach & Poche County Beach	Orange County Beaches, Harbors & Parks Department
Monarch Beach	Monarch Bay Association
Doheny State Park Beach	California State Parks
Capistrano Bay District Beach	Capistrano Bay District
Dana Point Harbor	Orange County
County of Orange Corporation Yard	County of Orange Public Works
Dana Point Branch Library	Orange County Public Libraries

2.5 FISCAL ANALYSIS

Effective programs require adequate funding to implement planned activities. Since the adoption of the permits, the City has provided funding for the countywide shared-cost budget and annually allocates funds for compliance activities. The City uses the Fiscal Analysis Report form shown in **Exhibit 2.4**, to report on capital, operations, maintenance costs, and funding sources in the Annual LIP PEA Report.

Provision E.8., Fiscal Analysis, requires the City to:

- Secure resources necessary to meet all requirements of the Order;
- Conduct an annual fiscal analysis that includes:
  - Various categories of expenditures, including specific capital, operation and maintenance and any other expenditures in each category;
  - The staff resources needed and allocated to meet the requirements of this Order;
  - Estimated expenditures for the reporting period and the current fiscal year; and
  - The source of funds, including legal restrictions on use of such funds for the current and next fiscal year.
- Submit a summary of the annual fiscal analysis with each WQIP Annual Report

- Provide documentation, upon request, used to develop the summary

The City of Dana Point implements a two-year budget process. Each Department Manager is required to submit a draft budget to the City Manager to be included in a comprehensive City-wide budget for City Council review and approval. Each year, appropriate financial data (expenditures and projected costs) is collected from each division with water quality roles and costs in order to prepare the annual fiscal analysis.

The City uses predominantly General Funds to fund the water quality program. Although "storm water fees" are generally considered a potential option for funding of water quality program, any such fee is considered a tax and is subject to Proposition 218, which requires voter approval and poses a significant constraint on the feasibility of this option, especially in the current economic climate.

The City utilizes other funding sources that may arise for the water quality program activities when available and applicable. Such funds could include:

- Solid waste and recycling funds: potential funds for trash related activities and public education
- Used Oil Program: potential funds for public education, distribution of oil containers, and other programs to prevent illegal disposal of used oil
- Various Federal, State and Local grant programs, including Prop 50, Prop 84, OCTA Measure M, and others
- Permit fees for specific required inspections, as appropriate and allowed (for example, Construction BMP Inspections)

2.6 DATA MANAGEMENT AND PERMIT REPORTING REQUIREMENTS

2.6.1 Data Management

The City of Dana Point utilizes a number of data management tools to track, record, and document information required for the annual reports, including the JUMRP/LIP Annual Report Form (Attachment D as referenced in the Permit), provided as **Exhibit 2.5.**

Illicit Discharge Detection and Elimination Program

Illicit discharges, including enforcement actions, follow up activities, and clean-ups are generally tracked in the City's TRAK-iT Code-TRAK Database System. Some activities are also tracked in the Government Outreach tracking system utilized by the City's Street Manager.

Development Planning Program

Plan checks and Water Quality Management Plan reviews are tracked in the City's TRAK-iT Permitting Database.

The inventory of WQMP BMPs, including inspections and any violations and/or enforcement actions, is maintained in an excel spreadsheet by the Water Quality Program Manager. A GIS map, showing the WQMP BMP locations is updated annually.

Construction Program

The City's construction site inventory is tracked in the City's TRAK-iT Permit Database. Inspections, violations, and enforcement actions are also tracked in this database.

Existing Development Program - Commercial

Commercial inspections are tracked in an excel database. Any violations or enforcement actions are tracked through the TRAK-iT Code TRAK Database System.

The City must retain records for five (5) years.

2.6.2 Annual Permit Reporting Requirements

The Permit requires a variety of reporting mechanism to document compliance with the Order. The goal of reporting is to communicate to the San Diego Regional Water Quality Control Board (RWQCB) and the people of the State of California the implementation status of each Local Implementation Plan (LIP).

Provision F in the Permit includes the following annual reporting requirements:

- **Progress Report Presentations**: The RWQCB may request the Co-permittees to provide progress reports to the San Diego RWQCB at a Board Meeting with progress reports on the implementation of the WQIP and LIP;
- **Transitional Annual Reports**: The JUMRP/LIP Annual Report Form (Attachment D as referenced in the Permit) shall be submitted to the RWQCB no later than October 31 of each year for the period of July 1- June 30), until the WQIP Annual Reports are in effect.
- **Transitional Monitoring and Assessment Program Annual Reports**: A Transitional Watershed Management Area Monitoring and Assessment Program (MAP) Annual Report must be submitted no later than January 31 for the reporting period of October 1- September 30 until the first WQIP Annual Report is in effect. Refer to Provision F.3.b. (2) for specific details.
- **Water Quality Management Plan (WQIP) Annual Reports**: A WQIP Annual Report must be submitted by January 31 of each year. The LIP reporting period is July 1 - June 30 and the MAP is October 1 - September 30. The Annual Report must be made on the Regional Clearinghouse and must include the following:
    - The receiving water and MS4 outfall discharge data collected pursuant to Provisions D.1 and D.2 of the Permit, summarized and presented in tabular and graphical form;

- The progress of special studies required pursuant to Provision D.3 of the Permit, and the findings, interpretations, and conclusions of a special study, or each phase of a special study, upon its completion;
- The findings, interpretations, and conclusions for the assessments required Pursuant to Provision D.4 of the Permit;
- The progress of the implementation of the WQIP, including, but not limited to, the following:
    - The progress toward achieving the interim and final numeric goals for the highest water quality priorities for the Watershed Management Areas;
    - The water quality improvement strategies that were implemented and/or no longer implemented by each of the Co-permittees during the reporting period and previous reporting periods;
    - The water quality improvement strategies planned for implementation during the next reporting period;
    - Proposed modification to the water quality improvement strategies, the public comments received, and the supporting rationale for the proposed modifications;
    - Previous modifications or updates incorporated into the WQIP and/or each Co-permittee's LIP and implemented by the Co-permittees of the Watershed Management Area (WMA); and
    - Proposed modifications or updates to the WQIP and/or the City's LIP.
- A completed JUMRP/LIP Annual Report Form (Attachment D, as referred to in the Permit), **Exhibit 2.6,** certified by a Principle Executive Officer and Ranking Elected Official or Duly Authorized Representative; and
- Any data or documentation utilized in developing the WQIP Annual Report upon request by the San Diego RWQCB. All monitoring data must be uploaded to the California Environmental Data Exchange Network (CEDEN) and provided on the Regional Clearinghouse.

- **Baby Beach Total Maximum Daily Load Annual Progress Report**
- **Beaches and Creeks Total Maximum Daily Load Annual Progress Report**

2.6.3 Regional Monitoring and Assessment Report

The co-permittees must submit a Regional Monitoring and Assessment (MAP) Report no later than 180 days prior to the expiration date of the Permit (April 1, 2020). The Regional MAP may be submitted as part of the Report of Waste Discharge (ROWD) pursuant to Provision F.5.b. In preparing the report, the receiving water and MS4 outfall discharge monitoring data must be considered to assess the following:

a. The beneficial uses of the receiving waters within the San Diego Regional that are supported and not adversely affected by the Co-permittee's MS4 discharges;

b. The beneficial uses of the receiving waters within the San Diego Regional that area adversely impacted by the Co-permittee's MS4 discharges
c. The progress toward protecting the beneficial uses in the receiving waters within the San Diego Region for the Co-permittee's discharges; and
d. Pollutants or conditions of emerging concern that may impact beneficial uses in the receiving waters.

The Regional MAP must include recommendations for improving the implementation and Assessment of the WQIPs and LIP programs. The co-permittees must provide any data or documentation utilized to prepare the Regional MAP upon request by the San Diego RWQCB. Any data used to prepare the Regional MAP must be available on the Regional Clearinghouse.

2.6.4 Reporting of Non-Compliant Sites

The City must notify the San Diego Water Board in writing within five (5) calendar days of issuing escalated enforcement (as defined in the Co-permittee's Enforcement Response Plan) to a construction site that poses a significant threat to water quality as a result of violations or other non-compliance with its permits and applicable local ordinances, and the requirements of this Order. Written notification may be provided electronically by email to the appropriate San Diego Water Board staff.

Each Co-permittee must notify the San Diego Water Board of any persons who are required to obtain coverage under the statewide Industrial General Permit and Construction General Permit and who have failed to do so, within five (5) calendar days from the time the Co-permittee becomes aware of the circumstances. Written notification may be provided electronically by email to RB9_Nonfilers@waterboards.ca.gov.

3 PLAN IMPROVEMENT AND WATERSHED PLANNING

3.1 INTRODUCTION

This Section describes the approach being taken by the City in developing and updating the Local Implementation Plan (LIP) to maintain a responsive compliance program. Program updates are informed by an adaptive management process focused on addressing high priority water quality conditions (HPWQCs) identified in the Water Quality Improvement Plan (WQIP) by revising, adding, or deleting BMPs and activities in response to performance assessment and research. This feedback loop forms the framework for revision and improvement of the Program and its documentation.

3.2 WATER QUALITY IMPROVEMENT PLAN (WQIP), DRAINAGE AREA MANAGEMENT PLAN (DAMP), LOCAL IMPLEMENTATION PLAN (LIP)

The Principal Permittee, in conjunction with the City and the other Co-Permittees (Permittees), have developed a comprehensive framework for storm water management, described in the Drainage Area Management Plan (DAMP), and most recently the South Orange County Water Quality Improvement Plan (WQIP) which is updated, as appropriate, in conjunction with the Report of Waste Discharge and each new Municipal Permit's findings and requirements, and the Cities' respective Local Implementation Plans (LIPs).

While the WQIP provides a framework for collective action focusing on solving the highest priority water quality issues and conditions and identifying numeric goals, objectives, and schedules by which they will be achieved on a watershed-scale, the LIPs provides some flexibility that allows each City to direct their resources and activities as deemed appropriate by implementing a baseline set of Best Management Practices (BMPs) and activities that are considered proven to address the HPWQCs in the most cost effective manner within the City's jurisdiction. The City's LIP contains both non-structural and pollution prevention controls, as well as localized structural BMPs, as required by Provision E of the Fifth Term Permit, which integrates the goals and strategies defined in the WQIP. The Monitoring and Assessment Plan (MAP) (See Section 3.7 below) provides recommendations for modifying those elements to improve the effectiveness of the implemented BMPs in achieving the goals. An adaptive management process (See Section 3.8 below) has been developed to periodically reevaluate the priority water quality conditions, water quality improvement goals, strategies, and schedules.

3.3 HIGH PRIORITY WATER QUALITY CONDITIONS (HPWQCs)

Through a robust data collection and evaluation process, the WQIP has identified pathogen health risk, unnatural water balance/flow regime, and channel erosion/geomorphologic impacts as the highest priority water quality conditions (HPWQCs) for the South Orange County Watershed Management Area and thus has established associated numeric goals and limits to address them and the associated pollutants. **Table 3.1** below indicates each HPWQC along with temporal and geographic extent.

Table 3.1: High Priority Water Quality Conditions for the South Orange County Water Quality Improvement Plan

Condition	Temporal Extent	Geographic Extent (or narrative criteria for future effort to define geographic extent)
Pathogen Health Risk	Dry and Wet	Beaches • Where recreational use/high value and persistent exceedances of FIB standards (limited extent in dry; most beaches during wet)
Unnatural Water Balance/Flow Regime	Dry	Stream Reaches • Reaches and outfalls demonstrated to be ponded or flowing in dry weather • Areas with other observed issues exacerbated by unnatural water balance (e.g., low IBI, high eutrophication, high invasive species) • Areas with highest intensity of recreational use/visibility
Channel Erosion/ Geomorphologic Impacts	Wet	Stream Reaches • Where impacted • Where degraded channel form has become limiting factor in channel ecology • Areas with highest intensity of recreational use/visibility • Where sediment or particulate-bound pollutants are contributing to downstream water quality impairment or complicating restoration efforts

3.4 JURISDICTIONAL STRATEGIES

The City is required to identify jurisdictional strategies that will be implemented as part of their LIP that are designed to effectively prohibit non-stormwater discharges to the MS4, reduce pollutants in stormwater, and protect beneficial uses of receiving waters. A summary of the City of Dana Point's strategies that are implemented to meet these goals and specifically address the HPWQCs are included as **EXHIBIT 3.1**. More information regarding the individual strategies are included in the respective Section(s) of the LIP.

3.5 OPTIONAL JURISDICTIONAL STRATEGIES

The Permit requires that each City identify optional strategies, including additional BMPs, incentives, or programs that may be implemented by the City, describe the funds and/or resources that must be secured by the City in order to implement the optional strategies, and identify the circumstances

necessary to trigger implementation of the optional jurisdictional strategies. The City of Dana Point's optional strategies are included as **EXHIBIT 3.2**.

3.6 FRAMEWORK FOR LIP PROGRAM ASSESSMENT

The Reports of Waste Discharge (ROWD), the region-wide Annual Unified Reports, the Watershed Reports, the City's Annual LIP PEA Reports, the Annual Baby Beach TMDL Progress Report, and Beaches and Creeks Bacteria TMDL reports provide a history of the program and BMP activities implemented as well as the progress in meeting water quality standards.

Should existing BMPs demonstrate to be ineffective or not as effective as anticipated, new or modified BMPs may be considered. In order to assure that resources for pollution prevention and pollutant removal BMPs are strategically expended, the City typically evaluates any potential new structural or preventative BMP technologies or practices on a limited scale (i.e. pilot project), or consults evaluations conducted by others before considering broader-scale implementation, if necessary. Implementation is pursued in a prioritized manner on a schedule consistent with available resources. After pilot and/or broader implementation, local effectiveness is assessed to determine if further adjustments or modifications are needed to the BMP implementation or program priorities. These iterative efforts are discussed and reported in the Annual Jurisdictional Work Plan progress updates submitted with the WQIP Annual Report.

BMP effectiveness assessment may be characterized via direct or indirect evidence at one or more of the six CASQA outcome levels described below. The BMP selection and effectiveness assessment process may include, but is not limited to, input from the following factors and information sources, as available and applicable:

- A review of technical literature (such as the ASCE/EPA databases)
- A review of existing control programs
- Demonstration or research projects by City or other entities
- Input from vendors, consulting firms, other municipalities, or other agencies
- Water quality and flow data and modeling
- User and operational/maintenance staff feedback
- Opinion surveys
- Beneficial Use assessment
- Cost and cost/benefit
- Technical feasibility
- Acceptability by the community
- Ease or difficulty of implementation
- Maintenance requirements
- Financial resources
- Pollutant prevention/removal performance

- Multiple resource benefits or impacts

The program evaluation framework is based on the California Stormwater Quality Association (CASQA, 2015[1]) method, which presents a hierarchy of potential outcomes at six levels:

- Outcome Level 6: Receiving Water Conditions
- Outcome Level 5: MS4 Contributions
- Outcome Level 4: Source Conditions
- Outcome Level 3: Target Audience Actions
- Outcome Level 2: Barriers & Bridges to Action
- Outcome Level 1: Stormwater Program Activities

More information regarding effectiveness assessment, including guidance documents can be found here: www.casqa.org/effectiveness_assessment.

Annual progress updates to the LIP, as necessary, are submitted with the WQIP Annual Report. Program assessment and iterative BMP findings, as well as any modifications to the program or to programmatic assessment methods, are reported, along with any corresponding revisions made to the LIP, as appropriate. The LIP is intended to be dynamic document plan that is evaluated on at least an annual basis by the City or as directed by the Regional Board.

3.7 WATER QUALITY IMPROVEMENT MONITORING & ASSESSMENT PLAN

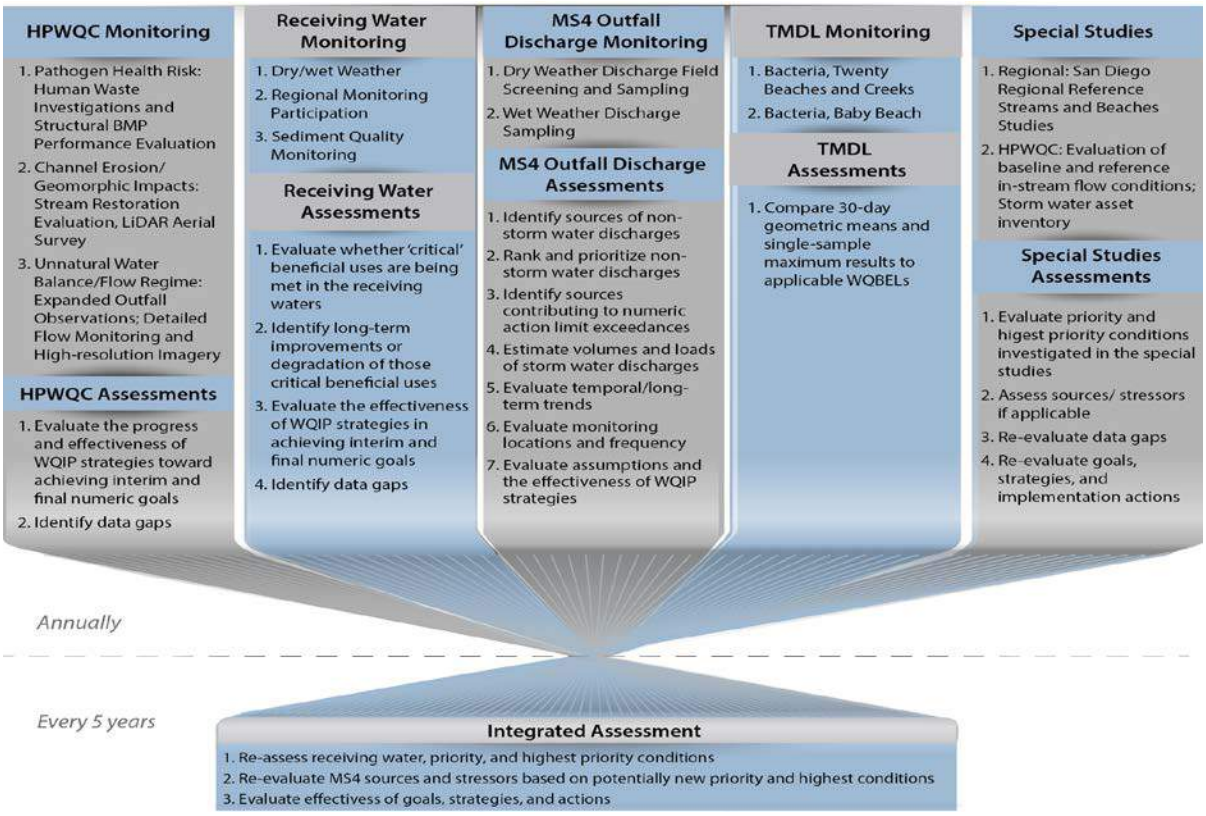
A comprehensive Monitoring and Assessment Plan (MAP) was developed to describe and plan for ongoing monitoring and assessment of the implemented strategies established to drive and focus the adaptive management process (see 3.8 below). The MAP was strategically built upon the existing and extensive County-wide monitoring program, when appropriate, to maximize use of extensive data sets. The MAP describes the strategies and methods that Copermittees will use to monitor and assess the progress toward the numeric goals and schedules presented in Section 3 of this WQIP. The MAP also describes the approach the Copermittees will use to monitor the conditions of receiving waters and discharges from the MS4 under wet and dry weather conditions and was developed to adhere to the prescriptive monitoring and assessment requirements of Permit Provisions in Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100.

The *Assessment Program* includes both annual assessments and an integrated assessment. Annually, the Permittees will evaluate data collected as part of the aforementioned monitoring programs and special studies and information collected during the implementation of the jurisdictional runoff management programs assess the progress of water quality improvement strategies. At the end of the Permit term, an integrated assessment will be performed by the Permittees. The integrated assessment will combine all previously performed assessments along with regional monitoring results and studies so that WQIP

[1] A Strategic Approach To Planning For And Assessing The Effectiveness Of Stormwater Programs, CASQA, 2015

effectiveness and modifications can be considered. **Figure 3.1** depicts the conceptual organization and relationship of the SOC Monitoring and Assessment Program. The MAP in its entirety can be found here: https://ocgov.app.box.com/v/SDR-WQIP-Clearinghouse.

Figure 3.1: Conceptual Organization of Monitoring and Assessment Program



3.8 WQIP ITERATIVE APPROACH AND ADAPTIVE MANAGEMENT PROCESS

The Permittees are required to continually review and update the WQIP until compliance with discharge prohibitions and receiving water limitations is achieved. The adaptive management process includes two distinct components:

- Continual evaluation of data and new information
- Updates

The iterative approach and adaptive management process is described in detail in Section 5 of the WQIP (https://ocgov.app.box.com/v/SDR-WQIP-Clearinghouse) and extends the three key themes identified in the Orange County Stormwater Program's Report of Waste Discharge (ROWD, 2014) on the State of the Environment in the San Diego Region:

- Focus on priority areas and constituents rather than trying to monitor all constituents, potential issues, and locations

- Increase the integration of data from a wider range of sources
- Continue to evolve from a strictly discharge-specific approach to a risk-based prioritization approach

3.8.1 WQIP Updates

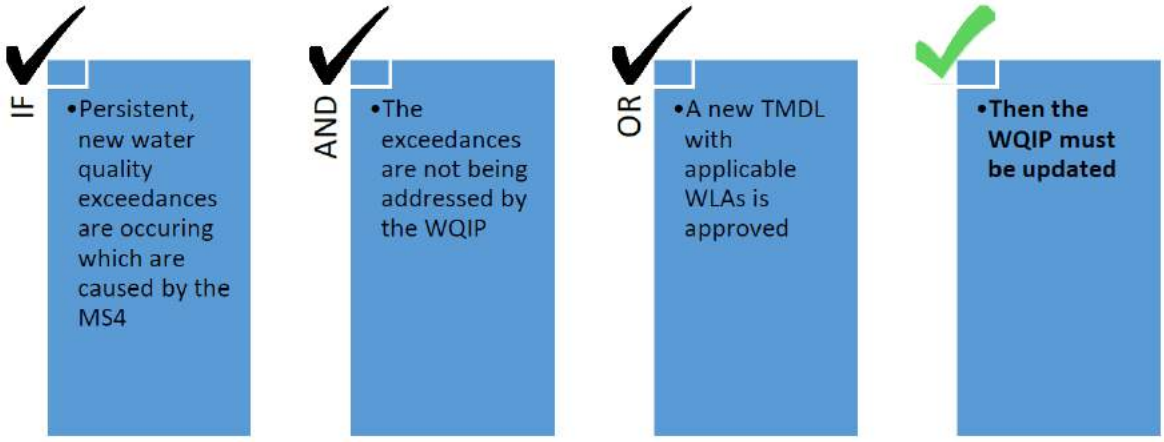
The Permit specifies two circumstances under which the WQIP must be updated. The Permit states that if exceedances of water quality standards persist in receiving waters, and the Permittees or Regional Board determine that the exceedances are new and being caused by the MS4 and are not addressed by the existing WQIP, then the Permittees must use an iterative approach to update the WQIP. The Permit also requires that the WQIP be updated to address newly approved TMDLs with WLAs applicable to the Permittees.

If WQIP modifications are required or deemed necessary, the WQIP will be updated pursuant to Permit Provision F.2.C (SDRWQCB 2015) and will:

- Indicate which strategies are effective and will continue to be implemented,
- Identify any new strategies that will be implemented to reduce or eliminate the pollutants or conditions which are causing the exceedance, and
- Identify any updates to the schedule or MAP, which are necessary to accommodate these strategy changes

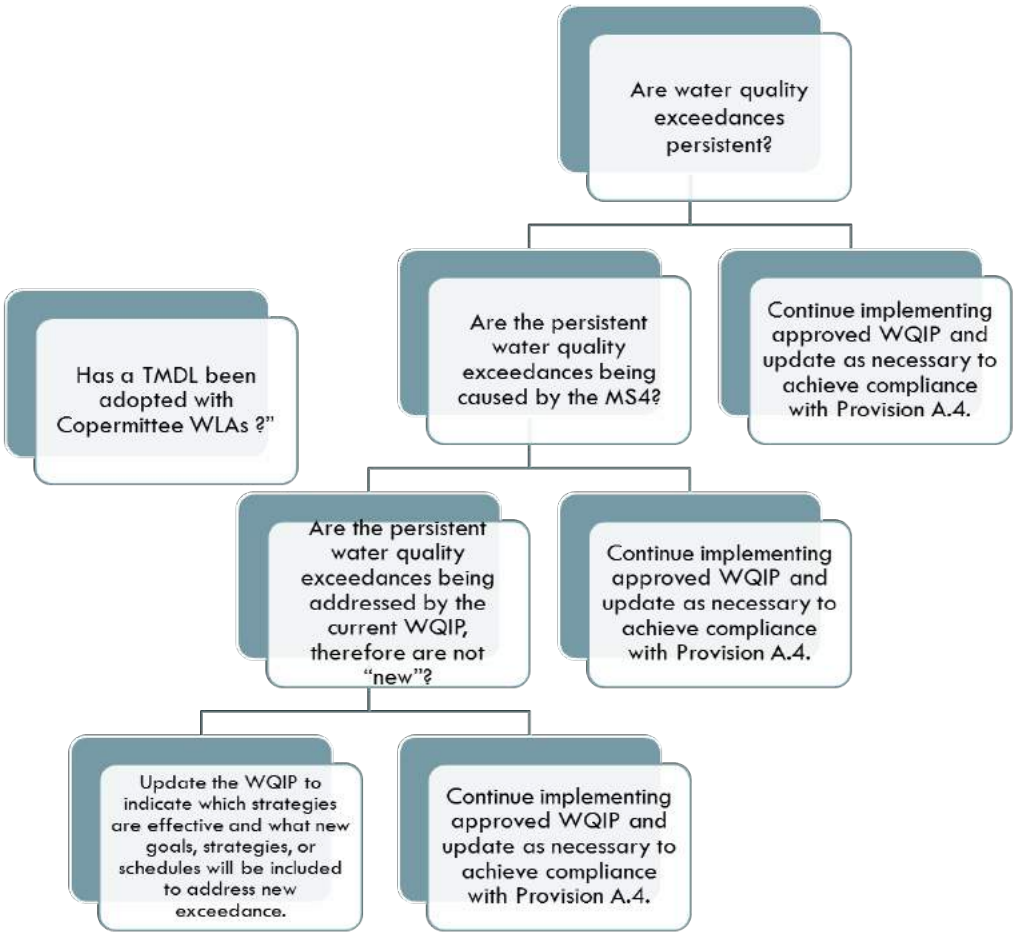
A simplified schematic of the adaptive management process triggering WQIP updates is provided in **Figure 3.2** below.

Figure 3.2: Iterative Approach and Adaptive Management Process



A WQIP decision tree of the adaptive management process is provided in **Figure 3.3** below.

Figure 3.3: WQIP Iterative Approach and Adaptive Management Process Decision Tree



Any proposed updates to the WQIP priority water quality conditions, numeric goals, and associated modifications to the schedules, will be reported either in the WQIP annual report or, at a minimum, in the ROWD, and will be proposed in accordance with Permit Provision F.2.c., including a involvement of the Consultation Panel and a public participation process.

3.9 FUNDING OF STRUCTURAL CONTROLS

Expenditures of structural controls include jurisdictional, watershed, and regional WMA activities. Implementation of these structural controls may be funded through the City's General fund and or Capital Improvement Program (CIP), as adopted by City Council. In-lieu fees may also be an option in the future, upon the time that an "in-lieu fee schedule" has been developed as part of an Alternate Compliance Program for use when private development projects are unable to provide sufficient

structural controls on site. Additional details regarding Alternative Compliance Options and the in-lieu fee option can be found in Section 3 of the approved Model Water Quality Management Plan.

Additionally, the City can apply to secure funding for structural controls through the following competitive grant and loan programs, provided the City and project meets the applicable eligibility and other criteria for the respective program:

1. Potential Grant Funding Programs:

    a. OC Go (Measure M) Environmental Cleanup Program
    b. Proposition 1 – Stormwater Grant Program and IRWM
    c. Proposition 68 – Parks and Water Bond
    d. Metropolitan Water District of Southern California Future Supply Action Funding Program (Through partnership with member agencies)

2. Potential Financial Assistance (Loan) Funding Programs:

    a. Clean Water State Revolving Fund (CWSRF)
    b. Drinking Water State Revolving Fund (DWSRF) (Through partnership with local water agencies)

4 LEGAL AUTHORITIES

4.1 REGULATORY REQUIREMENTS

The City of Dana Point is required to establish, maintain, and enforce adequate legal authority to control pollutant discharges into and from its MS4 and to meet the requirements of MS4 Permit San Diego Regional Water Quality Control Board Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100 (Permit Directive E.1). Dana Point Municipal Code (DPMC), Chapter 15.10 Storm Water/Surface Runoff Water Quality (aka Water Quality Ordinance) is the foundation of the City's water quality/pollution prevention program. The most current and up-to-date version of the Ordinance and the entire City of Dana Point Municipal Code is available online at www.danapoint.org/municipalcode.

4.2 AUTHORITY TO CONTROL POLLUTANT DISCHARGES

The City's Water Quality Ordinance is the principal legal foundation of the City's water quality/pollution prevention program. The certified Statement of Legal Authority is provided as **Exhibit 4.1**. This legal authority enables the City to:

- Control the contribution of pollutants in discharges of runoff associated with industrial and construction sites;
- Prohibit all identified illicit discharges not otherwise allowed;
- Prohibit and eliminate illicit connections to the MS4;
- Control the discharge of spills and dumping or disposal of materials other than storm water into its MS4;
- Require compliance with conditions in the City's ordinance, permits, contracts, or orders;
- Utilize enforcement mechanisms to require compliance with storm water ordinances, permits, contracts, or orders;
- Control the contribution of pollutants from one portion of the MS4 to another portion of the MS4 through interagency agreements among other MS4 owners;
- Carry out all inspections, surveillance, and monitoring necessary to determine compliance and noncompliance with the local ordinance and permits with this Order, including the prohibition on illicit discharges to the MS4;
- Require the use of Best Management Practices (BMPs) to prevent or reduce the discharge of pollutants into the MS4s from storm water to the maximum extent practicable (MEP); and
- Require documentation on the effectiveness of BMPs implemented to reduce the discharge of storm water pollutants to the MS4 to the Maximum Extent Practicable (MEP).

4.3 OTHER CITY OF DANA POINT POLLUTION PREVENTION CODES/ORDINANCES

In addition to the City's Water Quality Ordinance, there are other City ordinances contained in the Dana Point Municipal Code (DPMC), that addresses water quality protection, pollution prevention, and contribute to the comprehensive water quality/pollution prevention program. Other complimentary codes are noted in **Table 4.1**.

Table 4.1: City of Dana Point Pollution Prevention Related Codes

Title	Chapter	Name	Section	Content
6: HEALTH & SANITATION	6.03.151	Industrial Waste Disposal	Dumping of Waste Unlawful	Prohibits dumping or discharging industrial waste
	6.10.030	Integrated Waste Management	Solid Waste Removal	Requires collection of solid waste, at a minimum of once per week
	6.10.230	Integrated Waste Management	Self-haulers and Gardeners - Disposal at Authorized sites, Reporting Requirements	Prohibits spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment, including discarding of barrels, containers and other closed receptacles.
	6.10.270	Integrated Waste Management	Clean-Up Responsibility	Requires that each person shall be responsible for the cleanup of any and all solid waste and/or recyclables which that person has generated, deposited, released, spilled, leaked, pumped, poured, emitted, emptied, discharged, injected, dumped or disposed into the environment.

Title	Chapter	Name	Section	Content
6: HEALTH & SANITATION	6.14.002	Nuisances, General	Public Nuisances Designated	• Prohibits accumulation of dirt, litter, feces or debris on sidewalks, parking lots, landscaped or other areas. • Prohibits any property with accumulation of grease, oil, or other hazardous material on paved or unpaved surfaces, driveways, buildings, wall or fences , or from which any such material flows or seeps on to any public street or property. • Prohibits any area with lack of turf, planted material, rock, or other ground covering, so as to cause excessive dust or allow the accumulation of debris. • Prohibits dumping of any waste matter on public or private property. • Prohibits the depositing or dumping of rocks, dirt, or debris on public or private property.
	6.15.001	Landscape & Maintenance of Vacant Property in Commercial Districts	Landscaping of Vacant Property	Vacant property in commercial districts must be adequately landscaped and irrigated.

Title	Chapter	Name	Section	Content
6: HEALTH & SANITATION	6.15.002	Landscape & Maintenance of Vacant Property in Commercial Districts	Landscape Standards	• Landscaping shall cover as much land as possible, reduce erosion, reduce glare, and reduce water run-off. • Encourages use of water-saving plants
	6.20.012	Regulations on Leaf Blowers	Regulations on Leaf Blower Operation	Prohibits dirt, dust, debris, leaves, grass clippings, cuttings, or trimmings to be blown or deposited on any land, lot, street, alley, or gutter.
	6.45	Anti-littering	N/A	It shall be unlawful for any person to throw, drop, cast, or deposit on any street, alley, sidewalk, or any other public premises, including, but not limited to, beaches, parks, fountains, ponds, bays, oceans, and other bodies of water or public areas, waste material of any kind including, without limitation, cigarette butts, cans, paper, paper containers, bottles, or any other form of waste matter, whether solid, hazardous, or special.
	6.46	Expanded Polystyrene Food Service Ware	N/A	Food vendors are prohibited from providing prepared food in disposable food service ware made of EPS.

Title	Chapter	Name	Section	Content
6: HEALTH & SANITATION	6.47	Plastic Carry-out Bags	N/A	No affected retail establishment shall provide plastic carry-out bags to customers at the point of sale. Reusable bags and recyclable paper bags are allowed alternatives.
	6.48	Vessel Ordinance	.010	Regulates the anchoring of vessels off the coast of Dana Point in order to prevent improper waste disposal, which was a concern for the water quality at Doheny State Beach and address safety concerns.
8: BUILDINGS & CONSTRUCTION	8.01.190	Grading & Excavation Control	Application	Requires compliance with State General Construction Permit.

Title	Chapter	Name	Section	Content
8: BUILDINGS & CONSTRUCTION	8.01.380	Grading & Excavation Control	Erosion Control and Water Quality Requirement Systems.	• Regulates excavation, grading, and construction • Slopes shall be prepared and maintained to control erosion • Requires temporary and permanent erosion control devices • Requires cleaning of paved streets during construction • Establishes design and construction requirements for desilting basins • Requires equipment and workers to be available for emergencies when rain is imminent
	8.01.400	Grading & Excavation Control	Erosion Control & Water Quality Control Maintenance	Requires BMP maintenance
	8.02	California Building Code		Prescribes regulations for the erection, construction, enlargement, alteration, repair, improving, removal, conversion, demolition, occupancy, equipment, use, height, area, and maintenance of all buildings and structures, including the new Green Building Codes, effective Jan 1, 2011
	8.16	Uniform Plumbing Code	Chapter 10	Requires Grease Trap/Interceptors for new/improved restaurants

Title	Chapter	Name	Section	Content
8: BUILDINGS & CONSTRUCTION	8.24	Uniform Fire Code		Prohibits the discharge of any waste liquid containing crude petroleum or its products into or upon any drainage canal or ditch, storm drain, sewer, or upon the ground
9: WATER EFFICIENT LANDSCAPE STANDARDS AND REQUIREMENTS	9.55	Water Efficient requirements per AB1881	N/A	• Establishes requirements for planning, design, installation, and maintenance of water efficient landscapes for new construction and redevelopment (runoff prevention is a focus) • Establishes a maximum applied water allowance with goal of reducing to lowest practical amount. • Establishes water management practices and water waste prevention for existing landscapes.
10: ANIMAL CONTROL, WELFARE & LICENSING REQUIREMENTS	10.06.050	Animals At Large	Excreta Nuisance Prohibited	Prohibits leaving excreta in any public park, beach, sidewalk, public property, and private property other than that of the animal owner
12: VEHICLES & TRAFFIC	12.08.022	Parking Restrictions for City Streets	Repair, Dismantling, Greasing, Etc. Prohibited Upon Streets	Prohibits repair or maintenance of vehicles on any public street, unless emergency

Title	Chapter	Name	Section	Content
12: VEHICLES & TRAFFIC	12.08.024	Parking Restrictions for City Streets	Washing or Polishing for Hire Prohibited on Streets	No person shall wash or polish any vehicle in any public street when a charge is made for service
13: PARKS & RECREATIONAL FACILITIES	13.04.100	Parks & Recreational Facilities Regulations	Refuse, Trash and Litter	Prohibits littering in parks
	13.04.105	Parks & Recreational Facilities Regulations	Prohibition of Smoking in Public Parks	Prohibits smoking in public parks
	13.04.110	Parks & Recreational Facilities Regulations	Advertising Matter	Prohibits distribution of advertising media in parks on trees, without approval of City Manager
14: STREETS & SIDEWALKS	14.01.150	Streets and Sidewalk Code	Sandbags Required on Worksite	Require catch basin protection
	14.01.270	Streets and Sidewalk Code	Soil or Debris Obstruction	Prohibits deposit of soil or debris and requires removal by the responsible party.
	14.01.280	Streets and Sidewalk Code	Oil Petroleum & Other Hazardous Materials	Prohibits deposit of any oil, other liquid petroleum content, or other hazardous materials on any public highway, street or alley.

Title	Chapter	Name	Section	Content
15: WATER & SEWERS	15	Storm Water & Urban Runoff Pollution Controls	N/A	• Prohibits non stormwater discharges, including irrigation runoff • Reduces pollutant loads from storm water to Maximum Extent Practicable • Establishes minimum requirements for storm water management, including source controls • Establishes requirements for development projects • Prohibits Illicit connections.

4.4 WATER AND SEWER AGENCY POLLUTION PREVENTION ORDINANCES/PROGRAMS

In addition to City ordinances, there are independent water and sewer agencies that govern Dana Point residents and businesses. These regulations and/or programs assist in the overall effectiveness of our water quality/pollution prevention program. Most significantly, each of the three water districts, which serve Dana Point, have adopted enforceable ordinances or programs that prohibit irrigation runoff into the storm drain.

It is also important to note that the City of Dana Point does not own or operate the sanitary sewer system, and the respective sewer agencies are responsible for response to and clean-up of sewer spills and general sanitary sewer system operation and maintenance, including fats, oils and grease control and other pre-treatment and source control programs. The City closely coordinates with these agencies on these programs. Various ordinances that address these independent water and sewer agencies' programs are listed below in **Table 4.2**.

Table 4.2: Independent Water/Sewer Agency Pollution Prevention Related Ordinances /Programs

Agency	Name of Ordinance/Program	Date Adopted or Effective	Website	Water Quality / Pollution Prevention Issue Addressed
South Coast Water District	Ordinance # 190 Waste Discharge Pre-Treatment & Source Control Programs		www.scwd.org	Sewer spill prevention
South Coast Water District	Grease Control Ordinance # 201	2/21/06	www.scwd.org	Sewer spill prevention
South Coast Water District	Water Conservation Ordinance #206	4/23/09	www.scwd.org	• Irrigation runoff control • Washwater control
Moulton Niguel Water District	Fats, Oils & Grease Control Program	1/1/10	www.mnwd.com	Sewer spill prevention
Moulton Niguel Water District	Water Conservation Program	12/2009	www.mnwd.com	• Irrigation runoff control • Washwater control

4.5 ROLES AND RESPONSIBILITIES BEYOND CITY JURISDICTION

Although the City has a robust regulatory and enforceable framework in place, there are agencies, industries, and programs that may have either complimentary and/or conflicting authority that may extend beyond the authority of the City. The City of Dana Point believes that collaboration with the following agencies, industries, and programs, by both the regulators and the regulated communities, will ultimately be necessary for a comprehensive and effective water quality program. The City is not responsible for discharges regulated under separate permits or under the jurisdiction of other agencies, industries, or programs where the City has no authority. The following list includes some agencies and programs that are beyond City authority that may affect receiving water quality:

- Pesticides used in the state are registered by the Department of Pesticide Regulation (DPR).*
- Air contaminants, including fugitive dust, are regulated by the Air Quality Management District (AQMD).
- Leaking Underground Storage Tanks (LUST), landfills, regulations on water reuse, restaurant inspections, ocean water protection, including beach closures and Warnings Monitoring Program (per AB411), used oil recycling, etc. are overseen by Orange County Health Care Agency.
- Hazardous waste inventory and emergency planning is regulated by the Orange County Fire Authority as the Administering Agency (AA).
- Hazardous waste transport, treatment, storage and disposal are regulated by the Department of Toxic Substances Control (DTSC).
- Caltrans is regulated by State and Regional Board under Order 2012-0011-DWQ.
- Construction projects impacting one acre or greater are regulated by the General Construction Permit under Order 2009-0009-DWQ, which is administered by the State Resources Control Board.
- Industrial sites are regulated under the Industrial Permit under Order 2014-0057-DWQ, which is administered by the State Resources Control Board.
- Discharges from utility vaults and underground structures are regulated under Order 2014-0174-DWQ, which is administered by the State Resources Control Board.
- Reclaimed water use is regulated under a separate permit (Order 97-52), administered by the SDRWCB.
- Hydrostatic test and potable water will be regulated under Tentative Order R9-2009-0094, upon adoption. This order will be regulated by SDRWQCB.
- The Serra sewer treatment outfall is regulated by SDRWQCB under Order R9-2009-0094.
- Caltrans is regulated by State and SDRWQCB under Order 99-06-DWQ.
- Phase II MS4s, such as Capistrano Unified School District, is regulated by State and SDRWQCB under Order 2003-0005-DWQ.
- On-site Disposal Systems (OSDS), agricultural and nursery discharges, animal operations, and aerially discharged wastes over land are each regulated under one of eleven (11) conditional “waivers” administered by SDRWQCB.

*In California, DPR, SWRCB, and RWQCB have mandates and authorities bearing on pesticides and water quality. In order to promote cooperation to protect water quality from the adverse effects of pesticides, DPR and the SWRCB signed a Management Agency Agreement (MAA). The MAA, and its companion document, "The California Pesticide Management Plan for Water Quality," strive to coordinate interaction, facilitate communication, promote problem solving, and ultimately assure the protection of

water quality. The City looks forward to seeing the outcomes of this MAA coordination and implementation, as pesticides have been noted as a pollutant of concern in water bodies within Orange County.

4.6 ENFORCEMENT

The City's Water Quality Ordinance includes adequate legal authority, to the extent permitted by California and Federal Law and subject to the limitations on municipal action under the constitutions of California and the United States, to enter, inspect, and gather evidence (pictures, videos, samples, documents, etc.) from industrial, construction, and commercial establishments. Sanctions are in place to allow the City to progressively and decisively take enforcement actions against any violators of their Water Quality Ordinance. The City intends to use Enforcement Response Plan, **Exhibit 4.2,** in concert with the Enforcement Consistency Guide for Water Quality Ordinance Implementation.

Several City Departments have roles and responsibilities in enforcing various elements of the City's Water Quality Ordinance. Please refer to Section 2 for the City organizational chart and the description of department roles and responsibilities.

5 MUNICIPAL

5.1 INTRODUCTION

Municipal facilities within the City include predominantly public parks, along with two administration buildings (City Hall and the Community Center), streets and sidewalks, trails, the storm drain system, parking facilities, a pedestrian bridge, a funicular, the Nature Interpretive Center, and structural Best Management Practices (BMP), including the Salt Creek Ozone Treatment System, several trash separation units, and diversions. Operation and maintenance activities include street and sidewalk repair, storm drain and BMP maintenance, graffiti cleaning, trash removal, street sweeping, etc. BMPs and programs associated with these facilities and activities are described below. Integrating water quality protection into routine municipal programs will support both the principal requirements of the Fifth Term Permit and effectively address two of the High Priority Water Quality Conditions (HPWQCs) identified in the Water Quality Improvement Plan (WQIP), specifically, unnatural water balance in dry weather and pathogen health risk.

5.2 MUNICIPAL PROGRAM MANAGEMENT

For overall program management information, please refer to **Exhibit 2.3** of Section 2 of the LIP. Water service in the City is predominantly provided by South Coast Water District, with smaller areas within the City served by San Juan Capistrano Utilities (a small portion in the northerly central portion of the City) and Moulton Niguel Water District (serving two small areas in the northern tips of the City). Sewer services are provided by the same agencies in the same areas with some slight deviations. A Water District Boundaries Map is provided as **Exhibit 5.1**. The City contracts with the County of Orange and private vendors for street and storm drain maintenance.

5.3 SOURCE IDENTIFICATION/INVENTORY

The City of Dana Point maintains an inventory of municipal areas and activities that have the potential to contribute pollutants to the City's storm drain system. The inventory includes the name, address, notes if inactive, a description of the area/activity such as which pollutants are potentially generated by the area/activity, inspection frequency, whether the area/activity is adjacent to an Environmentally Sensitive Area, identification of whether the area/activity is tributary to a Clean Water Act Section 303(d) water body segment and generates pollutants for which the water body segment is impaired, and other information. The current municipal inventory is included as **Exhibit 5.2**. A general description of facilities and activities per Department is provided below.

Parks Department

The City's Parks Department maintains 28 parks encompassing 82 acres of park land with approximately 3,000 trees and five dog fun zones. The Parks Department also maintains 30.5 acres of parkway medians and over 5,000 right-of-way trees. City staff and contractors, under City staff supervision, conduct landscaping maintenance and trash removal and control. The Nature Interpretive Center (NIC) is also managed by the Parks Department in cooperation with the Center for Lands Management. Through contracted services, most materials are not stored at City facilities, however a small amount of supplies and materials are stored in an enclosed storage area at the Community Center.

Public Works/Street Maintenance Department

The Street Maintenance Division is responsible for the inspection and maintenance of the City's streets (approximately 19 miles of arterial streets, 56 miles of non-arterial streets), sidewalks, approximately 18 miles of storm drains, inlet filters, storm water diversions, storm drain trash removal units, and storm drain pump stations. The Street Maintenance Division oversees numerous long term service contracts for street and storm drain maintenance, (approximately 150 curb miles not including medians) street sweeping, concrete and asphalt repairs, inlet filter cleaning and replacement, and trash removal unit maintenance.

Facilities

The City's Facilities Division maintains City Hall, Del Obispo Community Center Building, 6 park restrooms, the Nature Interpretive Center and the Pacific Coast Highway Pedestrian Bridge, none of which have a high potential to contribute pollutants. However, appropriate Minimum BMPs below are implemented if specific activities are conducted.

Solid Waste (Trash Management)

The City's solid waste program provides weekly curbside collection of residential refuse, recyclables, including plastic bags, and green waste. Multiple days per week collection is provided for commercial, multi-family, and temporary bins, as needed. The City also provides curb-side pick-up of residential Household Hazardous Waste (HHW), public education programs, a SHARPS (needles, lancets, and other "sharps" used for medical purposes) disposal mail back program, a collection and recycling program for cell phones, Compact Fluorescent Bulbs (CFL) and household batteries, the Construction and Demolition Ordinance program, residential bulky item drop off events, and community vermicomposting workshops. The waste hauler also responds to daily requests to pick up bulky items improperly disposed (i.e. without scheduling) and provide trash and recycling services for City events. The City has also implemented the Plastic Bag Ban and Styrofoam Ban programs (through ordinances. Please refer to Section 4 for more information on the ordinances. For detailed information on the City's waste program, please see: www.danapoint.org/recycle.

Wastewater Facilities

The City does not own or operate the public sewer system and three independent agencies provide these services: South Coast Water District and Moulton Niguel Water District. South Orange County Wastewater Authority owns and operates a sewerage treatment plant within the City, which is regulated under its own NPDES Permit. The City coordinates closely with these districts to ensure swift response to any reported sewage spill.

5.4 MODEL MAINTENANCE BMP IMPLEMENTATION

The City of Dana Point has integrated pollution prevention and other Model Maintenance Best Management Practices (BMPs) into its municipal program and requires their use by all municipal departments, personnel, and contractors, where appropriate.

5.4.1 Municipal Model Maintenance BMPs

The City of Dana Point requires BMPs for all municipal areas and activities. The City has prepared specific procedures for certain activities as follows:

- City of Dana Point Street and Storm Drain Procedures in **Exhibit 5.3**
- City of Dana Point Invasive Plant Guidelines in **Exhibit 5.4**
- Slope Stabilization Plant Recommendations in **Exhibit 5.5**
- Water Quality Requirements for Landscape Irrigation in **Exhibit 5.6**
- Fireworks Best Management Practices Plan (FBMPP) in **Exhibit 5.7**

In addition, designated minimum BMPs for general municipal areas and activities are area or activity specific and are detailed in the County Drainage Area Management Plan (DAMP) at http://www.ocwatersheds.com/documents/bmp/municipalactivities and include the following:

Municipal Fixed Facility BMPs:

- FF-2, Building Maintenance and Repair
- FF-3 Equipment Maintenance and Repair
- FF-4, Fueling
- FF-5, Landscape Maintenance
- FF-6, Material Loading and Unloading
- FF-7, Material Storage, Handling, and Disposal
- FF-8, Minor Construction

- FF-9, Parking Lot Maintenance
- FF-10, Spill Prevention and Control
- FF-11, Vehicle and Equipment Cleaning
- FF-12, Vehicle and Equipment Storage
- FF-13, Waste Handling and Disposal

Drainage Facility Operation and Maintenance:

- DF-1, Drainage Facility Operation and Maintenance

Municipal Field Program BMPs

- FP-2, Landscape Maintenance
- FP-3, Roads, Streets, and Highways Operation and Maintenance
- FP-4, Sidewalk, Plaza and Fountain Maintenance and Cleaning
- FP-5, Solid Waste Handling
- FP-6, Water and Sewer Utility Operation and Maintenance
- FP-8, Surface Cleaning

The above BMP Fact Sheets are included as **Exhibit 5.8**.

The City also utilizes the CASQA BMPs handbooks found at: http://www.cabmphandbooks.com/Industrial.asp and http://www.cabmphandbooks.com/Municipal.asp for additional resources.

5.4.2 Fire Department BMPs

The Orange County Fire Authority (OCFA) provides fire services in the City of Dana Point. Although emergency fire fighting flows (flows necessary for the protection of life and property) do not require BMPs and are not prohibited, non-emergency activities, such as practice blazes and maintenance activities with the potential to create water pollution, are undertaken with appropriate management measures. **Exhibit 5.9** provides the Model Procedures for the OCFA, which have been integrated into their policies and standard operating procedures.

5.4.3 Special Event BMPs

The City receives requests to allow special events to occur on city property, including parks, streets, and facilities. Examples of special events include food festivals, concerts, charity events, car shows, and filming. The City requires organizers to apply for Special Events Permits, which allow City staff from multiple departments, including water quality staff, to review proposed activities and identify any potential concerns. The City has developed enhanced Best Management Practices for Special Events to address high priority conditions of concern including bacteria and prohibited discharges as well as, trash and debris, including potential balloon debris.

Coordinators of special events are informed of their responsibility to implement the BMPs and of the penalties for failing to meet their commitments during the application process. City staff are often on duty during a special event and are available as a resource to event staff and to inspect and ensure that there are no water quality issues. Any violations of the City's requirements are addressed through the enforcement process as described in Section 5.10.

The City's Minimum BMPs for Special Events are provided in **Exhibit 5.10**.

5.4.4 BMPs Addressing High Priority Water Quality Conditions of Concern

The City of Dana Point implements enhanced BMPs for municipal areas and activities to address High Priority Water Quality Conditions (HPWQCs).

Enhanced BMPs to address anthropogenic sources of bacteria and potential pathogens include:

- Coordination with Sheriff Department to address homeless encampments that may be observed on public property in priority areas;
- Providing pet waste pick-up bags at many City parks and trails;
- Weekly street sweeping of all public streets and parking lots (see Section 5.5 below);
- Frequent irrigation system checks to prevent sprinkler overspray and repair any damaged or broken systems; and
- Routine trash collection on City property and streets

Enhanced BMPs to address non-stormwater discharges include:

- Frequent irrigation system checks to prevent sprinkler overspray and repair any damaged or broken systems.
- Routine trash collection on City property and streets

5.5 STREET SWEEPING OF MUNICIPAL AREAS

The City of Dana Point implements a weekly street sweeping program for municipal roads, alleys, streets, highways, and parking facilities to optimize pick up of sediment, trash, debris, and associated pollutants, including bacteria. The City street sweeping maps and schedule are provided on the City's website at: www.danapoint.org/streetsweeping. Additional sweeping beyond mapped routes takes place as needed for special events and for spill clean up. Parking restrictions are in place and enforced in prioritized areas to maximize debris pickup.

5.6 STORM DRAIN AND STRUCTURAL BMP OPERATION AND MAINTENANCE

5.6.1 MS4 and Facilities

The primary function of the storm drain system (also referred to as municipal separate storm sewer system (MS4)) is to prevent flooding during storms. The City of Dana Point implements a schedule of maintenance activities for the storm drain system, which includes catch basins, piping, storm drain inlets, open channels, storm drain outlets, etc. A schematic of the City of Dana Point MS4 Storm Drain System Data is provided as **Exhibit 5.11**.

In general, maintenance activities include:

- Inspection and removal of accumulated waste at least once a year for all MS4 facilities and additional cleaning may be conducted as necessary;
- Repairing and replacing damaged or failing structures; and
- Maintaining legible signage at public storm drain inlets to prohibit "no dumping"

Maintenance and cleaning activities, including the overall quantity of waste removed, are tracked and reported. Waste removed is disposed of pursuant to applicable laws and maintenance crews take measures, as appropriate, to eliminate waste discharges during MS4 maintenance and cleaning activities. Measures include full recovery of jetter water using vacuum equipment, placing sandbags, if necessary, and blocking storm drain pipes during cleaning operations as required.

A general procedure for the City Street and Storm Drain Maintenance is provided in **Exhibit 5.3.**

5.6.2 STRUCTURAL BMPS

The City of Dana Point inspects and maintains proper operation of all municipal structural treatment control BMPs designed to reduce storm water pollutant discharges to or from its MS4s and related drainage structures. Please refer to **Exhibit 5.2** and E**xhibit 5.12** for an inventory and map, respectively, of the City's Structural BMPs.

5.7 LANDSCAPE MAINTENANCE

5.7.1 General Landscape Maintenance

The City implements a variety of BMPs to reduce or eliminate the amount of pollutants with potential to enter the storm drain system from municipal parks, medians, and landscaped areas. Potential pollutants include non-storm water discharges, sediment, trash, fertilizers, pesticides, pet waste, and associated pollutants, such as bacteria. Such BMPs include:

- Annual training for City Parks staff;
- Regular trash pick-up at public parks;
- Regular irrigation system checks to prevent non-storm water discharges;
- Providing pet waste pick-up bags at many City parks and trails; and
- Implementation of sediment and erosion controls in areas highly susceptible to erosion

5.7.2 Pesticide, Herbicide, and Fertilizer BMPs

The City of Dana Point implements BMPs to reduce the contribution of pollutants associated with the application, storage, and disposal of pesticides, herbicides, and fertilizers from municipal areas and activities to MS4s and receiving waters. Such BMPs include:

- Annual training and certification for applicators that the City utilizes;
- The City's Integrated Pest Management (IPM) Policy and Implementation Guidelines, provided in **Exhibit 5.13**, is utilized by the City to implement measures that rely on non-chemical solutions;
- The use of native vegetation where appropriate;
- Schedules for irrigation modification to reduce runoff of chemical fertilizers and pesticides; and
- The storage and proper disposal of unused pesticides, herbicides, and fertilizers through the City's contractors, if these types of chemical are used.

5.8 SANITARY SEWER INFILTRATION PREVENTION CONTROLS

The City of Dana Point implements measures to prevent and limit infiltration from municipal sanitary sewers to municipal separate storm sewer systems (MS4s), where necessary. Such measures include:

- Interagency coordination with sanitary sewer responsible agencies including South Coast Water District, Moulton Niguel Water District, and South Orange County Wastewater Authority;

- MS4 maintenance and inspections;
- Plan checking for construction and new development, by both the City and the sewering agencies;
- Code enforcement activities;
- Training of municipal staff and contractors conducting field operations on the MS4 and those who respond in the field; and
- Special investigations, as needed

5.9 INSPECTION OF MUNICIPAL FACILITIES

The City of Dana Point is unique in that its facilities consist predominantly of parks, streets, and sidewalks. Routine maintenance procedures provide for frequent inspections that will indicate the presence of prohibited discharge(s) that can be abated in a timely manner. Suspected issues are addressed by appropriate staff doing the routine maintenance or reported to appropriate staff for follow-up if any issue is observed beyond routine maintenance.

The City's inventory of facilities and routine inspection frequencies is provided in **Exhibit 5.2**. The designated inspection frequency supports the strategies and goals of the HPWQC and pollutant priorities set forth in the South Orange County WQIP. Significant issues above and beyond routine operation and maintenance that is abated onsite at time of observation are tracked in a database used by Streets Division and work order requests for issues related to Parks. Documentation of inspections is tracked through annual maintenance schedules and/or facility cleaning and inspection logs.

5.10 ENFORCEMENT OF MUNICIPAL AREAS AND ACTIVITIES

City maintenance employees and contractors are trained on required BMPs and general water quality compliance and perform inspections on their daily rounds. Any BMP deficiencies that may be observed in regards to municipal areas and activities are reported to the responsible department in an expedient manner. Potential water quality issues are afforded high priority and are generally addressed (or actions are taken to address) within 24 hours. Upon observation of a significant issue that cannot be immediately controlled, the Senior Water Quality Engineer is notified and an appropriate action plan is developed. Follow-up actions for significant issues are tracked and recorded by the Water Quality Engineer in municipal files or in the City's database system, as appropriate. Historically, all issues have been addressed successfully in a timely manner and escalated enforcement action has not been required, however, it is a mechanism available if circumstances dictate.

5.11 TRAINING AND EDUCATION

The City of Dana Point trains all municipal personnel and contractors that have responsibilities for selecting, implementing, and evaluating BMPs for municipal areas and activities to perform such tasks as required during normal work activities. Training of municipal personnel is detailed in Section 6.

6 OUTREACH, TRAINING, AND PUBLIC PARTICIPATION

6.1 INTRODUCTION

Water quality protection themed education, outreach, and training are important efforts in improving water quality of our creeks, streams, and coastal waters. By encouraging and fostering the adoption of sustainable behaviors protective of water quality by staff, the general public, and by regulated businesses and commerce, the City of Dana Point (City) may reduce the sources and pathways of pollution arising from common daily activities.

The goals of the training and outreach program are to:

- Encourage storm water pollution prevention behaviors and activities by tailoring messaging and materials to effectively communicate with various target audiences such as residents, businesses, visitors, etc. focusing on high priority conditions of concern;
- Maintain a properly trained staff; and
- Provide the public with opportunities to participate in the development, implementation, and refinements of the Water Quality Improvement Plan (WQIP)

6.2 REGULATORY REQUIREMENTS

The Public Education Program was developed as a model for fulfilling the public education requirements of Section E.7 of the San Diego Regional Water Quality Control Board Municipal NPDES Stormwater permit, Order No. R9-2013-0001, (As amended by Order Nos. R9-2015-0001 and R9-2015-0100), Fifth Term Permit.

The federal regulations require a description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials (Federal Register/Vol. 55, No. 222, p. 48071). In addition, the regulations also specify education programs for construction site operators and a program to facilitate public reporting of illicit discharges.

The City of Dana Point supports and participates in the countywide public education program – *H_2OC*, which is also the principal means of ensuring compliance with the public education and outreach elements of the Fifth Term Permit. In addition to this effort, the City conducts local outreach efforts to additionally increase awareness and foster environmental protective behaviors, which are described in this section.

6.3 COUNTY-WIDE OUTREACH PROGRAM

Dana Point supports *H_2OC*, www.h2oc.org, the dynamic County-wide outreach campaign. This campaign was revamped in 2018 following a critical iterative review, including the enhancement of the "H_2OC brand".

The updated H_2OC brand will serve as the umbrella campaign under which the Dana Point will work with other Permittees to implement a robust information-based foundational campaign and behavior-based action campaigns. All efforts will coalesce under one cohesive brand that is recognizable by the public.

The NPDES Public Education Sub-Committee (Committee) comprised of Co-Permittee representatives meets monthly to collaboratively direct *H_2OC*. The City participates in the Committee to ensure program strategies and materials developed are appropriate to residents and businesses within the City.

The objectives of the H_2OC Program are to provide the following:

- Increase urban runoff pollution awareness;
- Increase awareness for specific segments of the community of the importance of participation in controlling non-point source pollution, including preventing irrigation runoff;
- Provide information on alternative behaviors and practices that can contribute to controlling non-point source pollution, including irrigation runoff;
- Provide the public with opportunities to participate in the development, implementation, and refinement of the South Orange County Water Quality Improvement Plan (WQIP); and
- Track public awareness in the educational programs and changes in behavior toward activities more protective of water quality.

6.3.1 *H_2OC* Campaign Elements

The foundational campaign forms the underpinning of *H_2OC* based on maintaining a consistent water quality message, which includes overall program branding, school and business outreach, pollutant-specific and residential program outreach, and annual development and implementation of a media plan. The primary goal of the foundational campaign is to achieve permit compliance by increasing knowledge of residents and businesses and changing behavior over time. The success of these efforts is measured through the achievement of impressions and building engagement in *H_2OC*.

Residential Program/Homeowner Association Outreach

The County-wide Residential Program includes recommendations (*"Tips"*) for pollution-prevention methods for residential areas. Specific pollution prevention practices identified for each residential activity that poses a threat to water quality are provided in the activity fact sheets presented in **Exhibit**

9.6. The City uses the implementation strategies discussed in **Section 9.3.2** to encourage pollution prevention in residential areas.

In addition, the City will facilitate proper management and disposal of used oil, toxic materials, and other household hazardous wastes (HHWs) by providing educational materials describing the operation of the County's principal Household Hazardous Waste Collection Centers. The City also implements a curbside pick-up program for household hazardous waste, which is described in Section 5.

Business Outreach

The County-wide program has developed materials specifically for food service establishments (FSEs), mobile businesses, automotive service centers and detailing establishments, pet care businesses, pest control operators, landscape service companies, gasoline service stations, and the land development and construction industry. The program has presented and is available to present at industry conferences and workshops on various topics. *H_2OC* also coordinates with the Municipal Water District of Orange County (MWDOC) and University of California, Davis Cooperative Extension with outreach efforts focusing on outdoor water conservation, which addresses unnatural water balance, pesticide use, etc.

School Outreach

H_2OC uses agreements and relationships with organizations that outreach to school-aged children to deliver messages on pollution prevention. These organizations, such as the Orange County Department of Education (OCDE), Discovery Science Center (DSC), the Pacific Marine Mammal Center, and the Ocean Institute, provide an avenue for disseminating materials and messaging in a format conducive to student learning. Materials developed to inform children of stormwater pollution prevention behaviors are designed to encourage adoption of BMPs at school and in the home, as well as meet California Content Standards.

Pollutant-specific Outreach

Outreach materials are developed for residents and businesses in Orange County regarding specific pollutants of concern and reviewed annually and updated by *H_2OC* as needed. City-specific materials supplement these efforts ensuring that pollution issues specific to the city are adequately addressed. Pollutant-specific outreach include proper use and disposal of pesticides and fertilizers, proper disposal of pet waste, residential automobile washing and proper disposal of household hazardous waste. Pollutant-specific outreach to businesses will focus on water conservation, reduction of metals in runoff and proper use and disposal of chemicals and other hazardous wastes.

Other Audiences

A speakers' bureau was developed for *H_2OC* to supplement the previous outreach efforts through local Chambers of Commerce. On behalf of the Permittees, the County as the Principal Permittee, distributes

requests for presentations to local groups such as Chambers of Commerce, rotary clubs, kiwanis clubs, key clubs, National Honor Society groups, and environmental groups (e.g. Sierra Club).

County-wide Action Campaigns

To document sustainable behavior change, *H_2OC* pairs general pollution prevention outreach with localized action campaigns that focus on changing specific behaviors in small, community-based target groups. The action campaigns utilize Community-Based Social Marketing (CBSM)[1] techniques to document behavior change on a more frequent scale.

Community-Based Social Marketing involves four basic steps:

- Identifying barriers and motivators to an activity;
- Developing a strategy that utilizes tools to leverage those barriers and motivators in order to affect behavior change;
- Pilot the strategy; and
- Evaluate the strategy and refine it for future implementation.

By simplifying campaign messaging and requesting adoption of specific BMPs, *H_2OC* seeks to remove the uncertainty caused by offering a large number of stormwater pollution-preventing behaviors in favor of one single high-impact action.

H_2OC Overwatering is Out

The ultimate goal of the *Overwatering is Out* action campaign is to improve water quality through eliminating residential irrigation runoff. This is accomplished by encouraging residents to sign up for program messaging (i.e. tips to reduce overwatering) and to commit to making changes to their irrigation habits or landscape to reduce runoff. Built into the program is also the ability to quantify behavior changes that are the direct result of the action campaign.

Although the City supports the *H_2OC Overwatering is Out* action campaign by providing a link on the City website, www.h2oc.org/resources/take-action/overwatering-is-out/ , as a resource, the City has found that local outreach efforts such as working closely with water districts, including South Coast Water District, which serves the majority of Dana Point, have achieved a better response. City outreach efforts are described later in this section.

[1] McKenzie-Mohr, Doug & Smith, William (1999). *Fostering sustainable behavior: An introduction to community-based social marketing.* Gabriola Island, B.C.: New Society (www.CBSM.com)

6.4 CITY OF DANA POINT OUTREACH PROGRAM

The City of Dana Point also implements a City-specific public education campaign to complement *H_2OC* to address local issues and target constituencies that are best reached locally rather than a countywide effort.

6.4.1 City Residential and Community Outreach

The City builds upon the County-wide Public Education program by implementing residential and community outreach activities, including a variety of media, such as:

- One-on-one contact at a number of local events throughout the year;
- Participation and support of clean-up day events;
- Explore utilizing the City's social media for occasional outreach messages
- Local newspapers;
- City Water Quality page on the City's website at www.danapoint.org;
- City "e-news", where individuals can sign up for updates on certain topics, including water quality;
- Cable station, slides, and short video pieces at Council meetings;
- Various presentations;
- One-on-one outreach during investigations or any other correspondence with the public;
- Brochures at City hall;
- Regular waste hauler newsletter;
- Providing educational activities targeting children at events;
- Speaking at school events, assemblies, field trips, and providing tours upon request;
- Providing an interactive watershed exhibit and various handouts at the City's Nature Interpretive Center;
- Maintaining storm drain stencils, which remind and educate the community that materials entering the storm drain wind up in the ocean; and

Outreach topics include an explanation of the regulations, noting prohibited discharges, BMPs ("household tips") that can be easily implemented to conduct activities in a compliant manner, general runoff concepts, local water quality conditions, public reporting options, water conservation, low impact development, proper management and disposal of used oil and other household hazardous waste (HHW), and potential vector concerns.

Through partnerships with neighboring Cities and Water Agencies, both water quality and water conservation staff pursue a number of outreach avenues with the primary intention of providing common-themed environmental education to residents, homeowner's associations, and property managers.

The goals of these outreach efforts are to increase the general public's knowledge about the storm drain system and impacts of runoff, so that they choose to make the decision to modify their behavior to reduce or eliminate adverse impacts on the environment. Although difficult to accurately assess, the residential community's increase in knowledge regarding MS4s, impacts of runoff on receiving waters, and potential BMP solutions are analyzed through regional survey data and City enforcement records.
The County of Orange and the Department of Resources Recycling and Recovery (CalRecycle) provide grant funding to support local government programs promoting used oil recycling. There are a handful of certified used oil recycling centers in the City of Dana Point that will recycle residential used oil and oil filters for no charge. The City and County jointly advertise this service through public education materials and at local events. Information on this program can be found at www.calrecycle.ca.gov/UsedOil/.

6.4.2 City Business Owners and Operators Outreach

The City's education program to target business owners and operators uses a variety of media to increase the knowledge of their specific activities and impacts on runoff and water quality, Best Management Practices (BMPs) for their activities, including proper management and disposal of used oil and toxic materials, public reporting mechanisms, and water conservation to reduce pollutants to the maximum extent practicable.

The City outreaches to businesses within the community by:

- Providing information/brochures regarding applicable BMP requirements during inspections;
- Providing information/brochures regarding applicable BMP requirements during various other interactions, such as meetings, conferences, etc.;
- Conducting mailing of requirements, when necessary;
- Providing information on the City's website;
- Providing information in the City's Recreation Guide, which is mailed to all addresses in Dana Point; and
- Working with property managers to relay information to their tenants.

6.4.3 City Development Community Outreach

The City's training and education program incorporates a component focused at the development community, which includes project applicants, property owners, developers, contractors, and others in the development community. Built upon the fundamentals of runoff concepts and MS4 systems, including their impact on water quality, topics of focus are requirements for development projects, including Low Impact Development (LID) site design, source control, pollution prevention, and treatment BMPs, as well as local priorities and ESAs. These topics are described in detail in the City's Water Quality Management Plan (WQMP). Outreach is conducted through a variety of methods including pre-application meetings, the City's website, fact sheets, checklists, close and thorough coordination during

the project applicant's WQMP preparation, and support and/or advertising of various workshops that may be organized by industry organizations and local agencies.

6.4.4 City Construction Community Outreach

Through the permitting and construction process, the City educates permit applicants, contractors, property owners, and other responsible parties about storm water issues, BMP requirements, grading ordinance requirements, enforcement, and local priorities. Through correspondence with permit counter staff and information provided on the City's website, the City provides outreach to this target community by:

- Distributing fact sheets with permits;
- Discussion regarding construction BMPs and enforcement protocols during preconstruction meetings;
- Discussions during plan check;
- Discussions during inspections;
- Requiring the City's Runoff Threat Assessment Form (**Exhibit 8.2**) for grading projects;
- Contacting the highest priority construction sites to ensure rain readiness, when feasible; and
- Including BMP requirements in contract language.

Exhibit 6.1 summarizes the key outreach opportunities that the City will utilize to increase awareness of various target audiences on a variety of pollutants and topics.

6.5 MUNCIPAL STAFF TRAINING PROGRAM

For an effective stormwater program to be efficiently implemented, its staff must have sufficient knowledge, experience, and skills. The City educates and trains City employees and contractors on applicable stormwater regulations to ensure that proper management practices are applied to all municipal activities and projects. Training and educational opportunities include County-sponsored training sessions, Association/Industry training sessions, workshops and seminars, on-the-job training, staff meetings, and emails. The City also encourages and supports specific staff to obtain and maintain applicable water quality related certifications such as Certified Professional in Storm Water Quality (CPSWQ), Qualified Storm Water Pollution Prevention Plan (SWPPP) Practitioner and Developer (QSD/QSP), Certified Inspector of Sediment and Erosion (CISEC), Qualified Industrial Stormwater Professional (QISP), etc., as applicable.

Staff with specific roles in the implementation of the City's water quality program, by Program Component, are depicted in the organization chart (**Exhibit 2.3**).

6.5.1 Development Program Training

The City's water quality training program provides training to appropriate Planning, Building, and Engineering Development review staff so that they have an understanding of applicable water quality laws, the connection between land use decisions and water quality, methods of minimizing impacts to water quality, Low Impact Design (LID) site design BMP techniques, and specific development requirements, including Water Quality Management Plan and hydromodification requirements.

6.5.2 Municipal Program Training

The City's water quality training program provides training to all field staff involved in operation and maintenance of City facilities, including parks, streets, storm drain system, and structural BMPs. Staff are informed of the BMPs required for their respective facilities and activities, including good housekeeping practices. Appropriate staff are trained on proper spill response, containment, clean up, and general erosion and sediment control BMPs. All field staff are encouraged to report or address non-stormwater discharges.

6.5.3 Existing Development/ID/IC Program Training

The City provides training to staff responsible for conducting water quality compliance inspections and enforcement of residential, commercial, and industrial facilities and areas. The training includes identification of non-stormwater and other prohibited discharges, inspection and enforcement procedures, BMP implementation, and review of monitoring data, if applicable.

6.5.4 Construction Program Training

The City provides annual training prior to the rainy season for construction inspectors, building inspectors, code enforcement, grading review staff, and other municipal staff involved in maintenance of City facilities, as appropriate. Topics of the training can include applicable regulations, connection between construction activities and impacts to water quality, proper implementation of soil erosion and sediment control BMPs, review of inspection, plan review, and enforcement policies, current BMP technologies, and structural BMPs.

6.6 PUBLIC PARTICIPATION

Public participation allows the community to be directly involved and helps further implementation of the program by expanding City resources and fostering a sense of community and stewardship within the City. The City encourages public participation through the following methods.

6.6.1 Facilitating Public Input and Feedback

The City provides opportunities for residents to ask questions and give comments about the City's Water Quality Program. City newsletters and the program website (www.danapoint.org/environmental) include contact information where residents can communicate with municipal staff. City staff are encouraged to spend time talking with businesses or residents they encounter in their daily jobs. The City also collects feedback during public workshops, monthly publicly-noticed Ocean Water Quality Subcommittee meetings, and City Council Meetings where the opportunity is given to participate in the updating, development, and implementation of the Water Quality Improvement Plan and the Local Implementation Plan (LIP).

The City also has an Ocean Water Quality Subcommittee, a subcommittee comprised of three appointed citizen members, a non-profit representative, a City council member and the Director of Public Works. This subcommittee meets regular (generally once per month) and provide an accessible venue for the public to provide feedback and get involved in water quality issues.

6.6.2 City's Nature Interpretive Center (NIC)/Tide pool Interpretive Program (TIP)

Appreciation and use of the City's natural resources will naturally foster a desire to protect them. The City of Dana Point Nature Interpretive Center (NIC) is a well-visited destination where the public can discover and appreciate the rich history of the Dana Point Headlands and surrounding area. Through the recreational use of the adjacent trail system and the rotating exhibits, the NIC is a destination where the public can come to obtain a greater understanding and appreciation of natural resources in the City of Dana Point and how to protect them.

The Tide pool Interpretive Program (TIP) provides an interpretive educational program for all visitors to the rocky intertidal areas of the Dana Point Marine Conservation Area. This program is sponsored by the City of Dana Point in concert with the Ocean Institute and we are actively seeking new volunteer docents.

Both programs have an army of trained and committed volunteer docents that promote stewardship of our natural resources and offer valuable opportunities for interaction with the public.

6.7 PUBLIC REPORTING

To receive complaints or tips of illegal discharges, the City provides a variety of methods, all of which have demonstrated sufficient use:

- City 24-Hour Emergency – Police dispatch: 949-770-6011
- City of Dana Point's 24-Hour Complaint Hotline: 949-248-3573
- City of Dana Point Code Enforcement Division: 949-248-3564
- Orange County 24-Hour Water Pollution Hotline: 1-877-89-SPILL and online reporting at:

www.ocwatersheds.com/wphotline

- City Water Quality Engineer: 949-248-3584 or lzawaski@danapoint.org
- South Coast Water District 24-Hour Sewer Spills: 949-499-4555
- Moulton Niguel Water District 24/7 Emergency Service: 949-831-2500

7 DEVELOPMENT

7.1 INTRODUCTION

Watershed urbanization can adversely impact waterways and coastal waters and give rise to urban runoff pollution. To reduce these impacts, the City has established design standards for new development and significant redevelopment projects that require implementation of BMPs including Low Impact Development (LID) techniques, hydromodification controls, source controls, and treatment controls. Implementation of these design standards ensures that the hydrologic impacts that can arise from watershed imperviousness are mitigated and consequently, this key element of the Program addresses all of the High Priority Water Quality Conditions (HPWQCs) identified in the WQIP.

The Permittees recognize the importance of understanding the physical, chemical, and biological conditions of the receiving waters at a watershed scale, and the impact of incremental projects on these conditions and will continue to enlarge their understanding of receiving waters on a watershed scale through implementation of the WQIP. This information will assist in providing a strong linkage between the planning process and the development review and permitting process as required by the Permits.

7.2 PROGRAM OVERVIEW

The New Development and Significant Redevelopment Program links new development BMP design, construction, and operation to the earlier phases of new development project planning encompassed by the General Plan, environmental review process and discretionary development planning, review, and approval processes. The General Plan specifies policies that guide new development. The environmental review process examines impacts from proposed new development with respect to the General Plan policies and many environmental issues, including water quality, and includes consideration of mitigation measures to reduce any identified significant impacts.

The development planning and permit approval processes carry forward requirements in the form of the California Environmental Quality Act (CEQA) commitments and mitigation measures, conditions of approval, design specifications, tracking, inspections, and enforcement actions. These three “front-end” planning processes must be coordinated and linked to the later phases of BMP design, construction, and operation for new development and significant redevelopment to help ensure storm water quality protection features are planned, evaluated, selected, and designed in accordance with goals for the protection of water quality and other environmental resources.

The key staff that is responsible for overseeing, implementing, and enforcing the new development program are shown in the Organization Chart provided as **Exhibit 2.3**.

In general, the Planning and Building Departments are responsible for:

- Implementing the policies and objectives of the City set forth in the General Plan and Zoning Ordinance;
- Reviewing proposed developments for consistency with standards and policies relating to land use and preservation of the environment;
- Preparing for and supporting discretionary review and approval actions taken by the Planning Commission and City Council related to new development and significant redevelopment projects;
- Overseeing that all building construction complies with adopted codes and that permitting and licensing systems are efficient and serve the needs of the public, as well as the City.

The Public Works and Engineering Departments are responsible for:

- Administration of public improvement projects and ensuring construction in the public right-of-way complies with adopted codes and engineering standards;
- Administration of building improvement projects requiring grading and ensuring construction complies with adopted codes and engineering standards.
- Administration of other engineering related permit activities such as encroachment permits, improvement permits, utility improvement permits, etc. to ensure construction activities in the City's rights-of-ways comply with adopted codes, regulations, and engineering standards.

All the materials and tools for applicants related to development and water quality are provided on the City's website here: www.danapoint.org/wqrequirements.

7.3 GENERAL PLAN ASSESSMENT

The City has reviewed and revised, as necessary, its General Plan for the purpose of providing effective water quality and watershed protection principles and policies that direct land-use decisions and require implementation of consistent water quality protection measures for all development and redevelopment projects. Any future updates of the General Plan will also consider water quality and watershed protection.

7.4 ENVIRONMENTAL REVIEW PROCESS

During the period of the Fourth Term Permit Term, the City reviewed and revised, as necessary, its environmental review process to include requirements for evaluation of water quality effects and identification of appropriate mitigation measures, in accordance with the California Environmental Quality Act (CEQA).

7.5 PRIORITY PROJECT CRITERIA

During project review, approval, and permitting, the City requires new development and significant redevelopment projects that meet the criteria of a Priority Project (see below) to address the quality and quantity of stormwater runoff through the incorporation of permanent (post-construction) Best Management Practices (BMPs) in project design. The City requires project-specific Water Quality Management Plans (Project WQMPs) for all private and public projects that qualify as one of the Priority Project Categories listed in **Table 7.1**.

Table 7.1: Priority Project Categories

Priority Project Categories
New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

Priority Project Categories
New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA).“Discharging directly to” includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands).
New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day..
New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post Construction

7.6 NON-PRIORITY PROJECT REQUIREMENTS

Regardless if a project is determined to be a Priority Project or not, all development projects must incorporate the following Source Control Low Impact Development Best Management Practices (BMPs), where applicable and feasible.

Source Control BMP Requirements

- Prevention of illicit discharges into the MS4;
- Storm drain system stenciling or signage;
- Protect outdoor material storage areas from rainfall, run-on, runoff, and wind dispersal;
- Protect materials stored in outdoor work areas from rainfall, run-on, runoff, and wind dispersal;
- Protect trash storage areas from rainfall, run-on, runoff, and wind dispersal; and
- Any additional BMPs determined to be necessary by the Copermittee to minimize pollutant generation at each project

Low Impact Development (LID) BMP Requirements

- Maintenance or restoration of natural storage reservoirs and drainage corridors (including topographic depressions, areas of permeable soils, natural swales, and ephemeral and intermittent streams);
- Buffer zones for natural water bodies (where buffer zones are technically infeasible, project applicant are required to include other buffers such as trees, access restrictions, etc.);
- Conservation of natural areas within the project footprint including existing trees, other vegetation, and soils;
- Construction of streets, sidewalks, or parking lot aisles to the minimum widths necessary, provided public safety is not compromised;
- Minimization of the impervious footprint of the project;
- Minimization of soil compaction to landscaped areas;
- Disconnection of impervious surfaces through distributed pervious areas;
- Landscaped or other pervious areas designed and constructed to effectively receive and infiltrate, retain and/or treat runoff from impervious areas, prior to discharging to the MS4;
- Small collection strategies located at, or as close as possible to, the source (i.e. the point where storm water initially meets the ground) to minimize the transport of runoff and pollutants to the MS4 and receiving waters;
- Use of permeable materials for projects with low traffic areas and appropriate soil conditions;
- Landscaping with native or drought tolerant species; and
- Harvesting and using precipitation

The City uses the "Low Impact Development & Source Control BMPs for all redevelopment and development projects" fact sheet provided as **Exhibit 7.1** to guide project applicants.

Food Facilities that may not meet the criteria of a Priority Project must complete and submit the "City of Dana Point Water Quality Grease Management BMP Certification Form**"** to confirm compliance for source control BMPs at restaurants (**Exhibit 7.2)** to address the pathogen health risk HPWQC.

7.7 PRIORITY PROJECT REQUIREMENTS

The "BMP Design Manual" consists of the following three documents: South Orange County Model Water Quality Management Plan (WQMP), Hydromodification Management Plan (HMP), and the Technical Guidance Document (TGD). These documents together describe the structural BMP performance criteria, provide guidance to applicants as to how to achieve the performance criteria for the project, and also provide engineering details, standards, etc.

Exhibit 7.3, the BMP Design Manual, contains links for the following documents:

- South Orange County Model WQMP

- South Orange County Technical Guidance Document (TGD)
- Hydromodification Management Plan (HMP)

The South Orange County Model WQMP, Technical Guidance Document (TGD) and Hydromodification Management Plan (HMP) contain all the information specified for the BMP Design Manual, as referenced in the Permit, and should for purposes of compliance be considered to be a BMP Design Manual[1] .

7.8 PUBLIC AGENCY PROJECTS

Public Works projects, generally known as Capital Improvement Projects (CIPs), that meet the criteria of Priority Projects are also required to implement the LID, source control, hydromodification, and treatment control BMPs. In general, the same WQMP overall requirements described herein apply to public agency projects as well as private development projects. however, certain types of public projects that occur in Dana Point have unique characteristics that may be allowed certain exemptions, as specified in the Permit, such as:

- New or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria:
  - Designed and constructed to direct storm water runoff to adjacent vegetated areas or other non-erodible permeable areas; or
  - Designed and constructed to be hydraulically disconnected from paved streets or roads; or
  - Designed and constructed with permeable pavements or surfaces in accordance with USEPA Green Streets guidance.26
- Retrofitting or redevelopment of existing paved alleys, streets, or roads that are designed and constructed in accordance with the USEPA Green Streets guidance.27

Please refer to the Model WQMP and TGD (**Exhibit 7.3**) for more information.

A WQMP is also not required for public agency projects consisting of routine maintenance activities, such as trenching and resurfacing associated with utility work, pavement grinding, resurfacing existing roadways, sidewalks, pedestrian ramps, or bike lanes on existing roads, and routine replacement of damaged pavement, such as pothole repair.

7.9 PROJECT WATER QUALITY MANAGEMENT PLANS (WQMPS)

The Model Water Quality Management Plan (WQMP) has been developed to aid the Cities and the County of Orange under the jurisdiction of the San Diego Regional Water Quality Control Board and project proponents therein with addressing post-construction urban runoff and stormwater pollution from new development and significant redevelopment projects that meet the criteria of a Priority Project. The

[1] The BMP Design Manual was previously referred to as the Standard Storm Water Mitigation Plan under Order No. R8-2009-0002.

purpose of the project WQMP is to define project features and BMPs that will mitigate the project's impacts on receiving water quality and hydromodification in conformance with applicable standards.

7.9.1 Preliminary WQMPs

For all projects requiring discretionary or land use entitlement actions, a Preliminary WQMP (pWQMP) should be submitted as part of the application for project approval during the environmental review phase (CEQA) and must be submitted prior to approval of entitlements and Planning Commission approval of a project or other public hearing. Applications without a pWQMP will be deemed incomplete. Although termed "preliminary," it should be understood that the pWQMP requires relatively robust engineered design of LID retention and hydromodification management BMPs, as they may be significant elements of the site design. LID and hydromodification control BMPs should be considered and incorporated at the earliest conceptual planning stages of a project for early review, to potentially avoid necessary project changes and delays during the review and approval process. The pWQMP must identify and locate selected BMPs, provide design parameters including hydraulic sizing of treatment BMPs, and contain sufficient BMP detail to ensure the BMPs are adequately sized.

The Model WQMP and TGD **Exhibit 7.3** should be used as a guide for preparation of a Preliminary WQMP and the Final Project WQMP. The City of Dana Point/South Orange County WQMP Template (**Exhibit 7.4**) should be used by a project proponent to complete the Preliminary and Final WQMP for a specific project. The BMP fact sheets can be used in conjunction with project-specific design parameters and sizing to convey design intent. The TGD contains a number of BMP fact sheets that can be used for most LID BMPs. There are a number of resources listed in the Model WQMP for Site Design, Source Control, and Treatment Control BMPs that should be considered to guide the design and implementation of the BMPs.

Final details of non-structural source control BMPs and operation and maintenance details are not required to be included with the pWQMP, but will be required as part of the Final Project WQMP (See Section 7.9.2 below) that is required prior to the issuance of grading or building permits. Owner certification is required for both the Preliminary and Final WQMP submittals. All final plans must show all the structural and any applicable non-structural source control BMPs per the approved Final WQMP.

7.9.2 Final WQMPs

Prior to issuance of grading or building permits, the project applicant must update the pWQMP and submit the completed Final WQMP for review and approval. The Final WQMP shall include all final BMP design drawings and details on the construction plans.

The Final Project WQMP must be consistent with the pWQMP. If there are any substantial differences, the City must make a determination that the differences do not diminish the effectiveness of the BMPs to mitigate or address the project's potential impacts to water quality. Furthermore, any changes must not result in any new environmental impacts not previously disclosed in the local jurisdiction's circulated environmental document(s). If the changes diminish the project's ability to mitigate or address its water

quality impacts, or result in previously undisclosed environmental impacts, the City should require that the project be subject to further environmental review.

The Final Project WQMP must include calculations to support the structural integrity of the selected LID or treatment control BMP as appropriate and be prepared by or under the direction of a California Registered Civil Engineer and affixed with their stamp and signature. The City shall review a project's construction plans to assure that the plans are consistent with the BMP design criteria and guidance.

The Final WQMP must also include a stand-alone, user friendly Operation and Maintenance Plan. Please see Section 7.10 for the specific requirements.

7.10 OPERATION AND MAINTENANCE PLAN

The City of Dana Point requires that a separate, stand-alone, and user-friendly document is prepared for the party that will ultimately be responsible for operation and maintenance of all the BMPs in the Final WQMP. The Operation and Maintenance Plan (O&M) Plan that is prepared by the applicant for private sector projects shall describe and/or include:

- Site Plan
- Non-structural and Structural BMPs
- Employee responsibilities and training for BMP operation and maintenance with 24-hour contact information
- Operating schedule
- Maintenance frequency and schedule
- Specific maintenance activities
- Required permits from resource agencies, if any
- Forms to be used in documenting maintenance activities
- Recordkeeping requirements (at least 5 years)

The City has developed an Operations and Maintenance (O&M) Plan template to assist the applicant in preparing an acceptable O&M Plan. The City of Dana Point O&M Plan Template is provided as **Exhibit 7.5**.

7.11 PLAN CHECK: ISSUANCE OF GRADING OR BUILDING PERMITS

The construction plans submitted by the applicant for plan check must incorporate all of the structural BMPs identified in the approved Final WQMP. Therefore, the City requires that the final Project WQMP is approved prior to being issued a building or grading permit.

7.12 PERMIT CLOSEOUT, CERTIFICATES OF USE, AND CERTIFICATES OF OCCUPANCY

Prior to certificate of occupancy, the City construction and building inspectors inspect the project, including any BMPs, to verify that they have been constructed and are operating in compliance with all specifications, plans, permits, ordinances, the WQMP, and TGD. The City also requires a separately-bound and stand-alone WQMP Operation and Maintenance Plan (O&MP) that will remain on site so that the parties responsible for maintenance of all the BMPs has an accessible and user friendly maintenance guide. See Section 7.10 for more information.

The City has developed a BMP Construction Certification Form, **Exhibit 7.6**, which is required to be signed and sealed by the Engineer of Record indicating that the project site has been field inspected and that the structural BMPs have been installed per approved plans and are operational and functioning properly for the intended use and the any debris that may have accumulate during construction has been removed.

The Project WQMP continues with the property after the completion of the construction phase and the City may require that the terms, conditions, and requirements be recorded with the County Recorder's office by the property owner or any successive owner as authorized by the Water Quality Ordinance. In lieu of recordation the Permittee may require the Project WQMP to include a Notice of Transfer Responsibility Form, which serves to notify the Permittee that a change in ownership has occurred and notify the new owner of its responsibility to continue implementing the Project WQMP.

Accompanying this is a close out of permits and issuance of certificates of use and occupancy. The City will use this juncture to assure satisfactory completion of all requirements in the Project WQMP by requiring the applicant to:

- Demonstrate that all structural BMPs described in the Project WQMP have been constructed and installed in conformance with approved plans and specifications,
- Demonstrate that an O&M Plan has been approved for all structural BMPs within the Project WQMP,
- Demonstrate that a mechanism or agreement acceptable to the City has been executed for the long-term funding and performance of BMP operation, maintenance, repair, and/or replacement.
- Demonstrate that the applicant is prepared to implement all non-structural BMPs described in the Project WQMP,
- Demonstrate that an adequate number of copies of the Project WQMP are available onsite, and
- For industrial facilities subject to California's General Permit for Stormwater Discharges Associated with Industrial Activity as defined by Standard Industrial Classification (SIC) code, demonstrate that coverage has been obtained by providing a copy of the Notice of Intent (NOI)

submitted to the State Water Resources Control Board and a copy of the notification of the issuance of a Waste Discharge Identification (WDID) Number

Public Agency Projects

For public agency projects, upon completion of construction when contract close-out occurs, the responsibility for operation and maintenance of the structural BMPs will transfer from the contractor to the Public Works Department and become part of the Municipal Activities Program (Section 5), unless transfer of responsibility of the BMP has occurred through contracts, lease agreements, or maintenance agreements. Should responsibility be transferred, the City will negotiate satisfactory operation and maintenance standards with the entity accepting the operation and maintenance responsibilities.

7.13 BMP MAINTENANCE TRACKING

Each Project WQMP will be stored within the City's files and will continue with the property after the completion of the construction phase. The City may require that the terms, conditions, and requirements be recorded with the County Recorder's office by the property owner or any successive owner as authorized by the Water Quality Ordinance. In lieu of recordation, the City may require the Project WQMP to include a Notice of Transfer Responsibility Form, which serves to notify the City that a change in ownership has occurred and notify the new owner of its responsibility to continue implementing the Project WQMP.

The City maintains a watershed-based database to track and inventory all approved post-construction BMPs and BMP maintenance within its jurisdiction, since February 2003. LID BMPs implemented on a lot by lot basis at a single family residential home, such as rain barrels, are not tracked or inventoried. The database includes information on BMP type, location, watershed, date of construction, party responsible for maintenance, maintenance certifications or verifications, inspections, inspection findings, and corrective actions. A map of the private WQMP Sites (**Exhibit 7.7**) has also been prepared and will be updated periodically, as resources allow.

The City verifies that approved post-construction BMPs are operating effectively and have been adequately maintained by implementing the following measures:

- By considering BMP size, recommended maintenance frequency, likelihood of operational and maintenance issues, location, receiving water quality, and other pertinent factors, the City will designate High Priority BMPs in the inventory
- Inspection of all High Priority BMPs annually
- Verification of adequate maintenance at other WQMP sites through inspections, self-certifications, surveys, or other equally effective approaches
- Appropriate enforcement and follow-up measures will be implemented to ensure the treatment BMPs continue to function as originally designed

8 CONSTRUCTION

8.1 INTRODUCTION

The City of Dana Point identified construction sites and activities associated with any land or soil-disturbing activity as a known or suspected source of pollutants to the storm drain system. Stormwater and non-storm water discharges, including sediments, trash, bacteria, oil and grease, metals, organics, and nutrients are potential pollutants that can be generated by construction sites and activities. The purpose of this program section is to provide a detailed set of guidelines to prevent or minimize the impacts of surface runoff generated by construction activities within the City of Dana Point (City) on receiving water bodies.

Through implementing ordinances, performing inspections, requiring construction Best Management Practices (BMPs), and undertaking enforcement actions, Dana Point minimizes the impacts of surface runoff generated by construction activities within the City on receiving water bodies and therefore, directly supports both the principal requirements of the Fifth Term Permit and effectively addresses two of the HPWQCs identified in the WQIP, specifically, unnatural water balance in dry weather and pathogen health risk.

8.2 REGULATORY REQUIREMENTS

The Model Construction Program was developed to fulfill the municipal activity commitments and requirements of Section E.4 of the San Diego Regional Water Quality Control Board Municipal NPDES Stormwater permit, Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100.

This construction program presents requirements and guidelines for pollution prevention methods that must be used by construction site owners, developers, contractors, and other responsible parties, in order to prevent illicit discharges into the MS4, implement and maintain structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites to the MS4, reduce construction site discharges of storm water pollutants from the MS4 to the maximum extent practicable (MEP), and prevent construction site discharges from the MS4 from causing or contributing to a violation of water quality standards.

State Construction General Permit

In addition to meeting the requirements of City ordinances, all construction projects, whether private or public, that disturb one (1) or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (CGP) Construction General Permit Order 2009-0009-DWQ. The program is administered by the State of

California and San Diego Regional Water Quality Control Board. For more information, please see: http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml

The City of Dana Point does not have the authority or responsibility to enforce the CGP.

San Diego Regional Water Quality Control Board Groundwater Extraction Permit

Groundwater extraction associated with construction activity may be subject to San Diego Regional Water Quality Control Board Order R9-2015-0013, NPDES NO. CAG919003: General Waste Discharge Requirements for Groundwater Extraction Discharges to Surface Waters within the San Diego Region. For more information, please see: www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2015/R9-2015-0013.pdf.

The City of Dana Point does not have the authority or responsibility to enforce the San Diego Regional Water Quality Control Board Groundwater Extraction Permit.

8.3 OVERALL PROGRAM MANAGEMENT

The following section outlines and describes the City departments that are involved in issuing building and/or grading permits for private development projects and that are responsible for inspecting these projects during construction, or that manage public works construction projects that have a potential to impact water quality. Construction projects within the City are regulated by key staff in the Community Development Department, the Public Works and Engineering Services Department, and the Disaster Preparedness and Facilities Department. The Community Development Department oversees the Planning and Building and Safety Divisions, which includes Code Enforcement. An overall City Organizational Chart is provided in Section 2 of the LIP. Specific roles of each are described below.

Community Development – Planning Division

The Planning Division is responsible for implementing the policies and objectives of the community as set forth in the City's General Plan and Zoning Ordinance. This department also reviews proposed developments for consistency with the City's standards and policies relating to land use and preservation of the environment to ensure that the quality of life will be maintained or enhanced for future generations.

Community Development – Building & Safety Division

The Community Development Department oversees the Building and Safety Division, which is responsible for the building and safety standards for the design, construction, use, and occupancy of all buildings and structures within the City. The Building and Safety Division provides plan checking, permitting, and inspection services for new construction, additions, renovations, alterations, and remodels to assure all structures meet the minimum life safety standards of State and local building codes adopted by the City.

Community Development – Code Enforcement Division

The Code Enforcement Division administers a comprehensive enforcement program to correct violations of the Municipal Code.

Public Works & Engineering Services Department

The Public Works Department develops, builds, and maintains the City's infrastructure, including streetscapes, landscape medians, storm drains, water quality diversions, open space, parks, athletic fields, bike trails, and many miles of roadway and traffic signals. The Public Works Department ensures all construction in the public right-of-way complies with adopted codes and engineering standards and issues grading and encroachment permits. Grading permits are required for projects that:

- Propose excavation that exceeds twenty-five (25) cubic yards on any one site and is more than one (1) foot in vertical depth; or
- propose fill more than one (1) foot in depth is placed on natural grade with a slope steeper than five horizontal to one vertical (5:1); or
- propose fill more than three (3) feet in depth, intended to support structures or mobile homes; or
- propose surface paving of any kind exceeding three thousand (3000) square feet; or
- will alter an existing watercourse, channel, or revetment by excavating, or placing fill, rock protection, or structural improvements

Some examples of typical encroachment permit projects include:

- Trenching across the public right-of-way for installation of water, sewer, storm drain, cable, and other underground utilities;
- Construction of curb, gutter, sidewalk, driveway, and roadway pavement; and
- Water monitoring and extraction wells, soil sample borings, installation of signs and newspaper racks.

The Public Works Department Engineering Division reviews projects, in coordination with the Planning Division, to determine which water quality conditions should be included. The Public Works Department is also responsible for the administration of Capital Improvement Projects (CIP Projects).

During the review and approval process for all projects within its jurisdiction, the City considers potential water quality impacts prior to issuance of construction and grading permits and ensures the following:

- Each construction and grading permit requires proposed construction sites to implement designated BMPs and other measures so that illicit discharges to the MS4 are effectively prohibited and storm water pollutants discharged from the site will be reduced to the maximum extent practicable and will not cause or contribute to a violation of water quality standards.
- Prior to permit issuance, the project proponent's erosion or sediment control plans (or equivalent construction BMP plan) is reviewed to verify compliance with the City's grading ordinance and with Order No. R9-2013-0001 as amended by Order Nos. R9-2015-0001 and R9-2015-0100.
- Prior to permit issuance, the City verifies that project proponents, subject to California's statewide General NPDES Permit for Storm Water Discharges Associated with Construction Activities, have existing coverage under the State General Construction Permit[1].

Disaster Preparedness & Facilities Department

The Disaster Preparedness and Facilities Department is responsible for the rehabilitation and maintenance of City buildings.

8.4 INVENTORY OF CONSTRUCTION SITES

The City tracks all permitted construction projects in a software database (TRAK-iT). Inventories (i.e. reports) can be run at any given time, as the data is dynamic and changes daily. The software database includes all permitted construction sites with a City building permit, encroachment permit and/or grading permit, including those covered by the State General Construction Permit[1].

8.5 BMPS FOR CONSTRUCTION PROJECTS

All construction projects, regardless of size, are required to implement BMPs. The City has established a minimum set of BMPs and other measures to be implemented at all construction sites.

All private building, grading, and encroachment permits as well as CIP Projects are required, at a minimum, to implement and be protected by an effective combination of erosion and sediment controls and waste and materials management BMPs. The minimum requirements are summarized on the next page. As different types of projects are processed differently and can vary significantly in terms of scope, the minimum requirements are conveyed to applicants and construction contractors with a variety of tools, depending upon the type of project. The various tools include permit conditions and plan notes, fact sheets, special conditions, and the City's Runoff Threat Assessment Form. In addition, they are reviewed as a part of the pre-construction meeting with the inspector and/or project manager prior to beginning work. Details are provided below.

[1] State Water Resources Control Board (SWRCB) Order No. 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity

Construction BMPs are required to be implemented at all construction sites year round. BMP implementation requirements may vary seasonally (wet and dry seasons), however, dry season BMP implementation must plan for and address unseasonal rain events that may occur during the dry season.

Minimum Requirements for All Construction Sites

CATEGORY		MINIMUM REQUIREMENTS
Management Measures	i.	Pollution prevention where appropriate;
	ii.	Development and implementation of a site specific run-off management plan;
	iii.	Minimization of areas that are cleared and graded to only the portion of the site that is necessary for construction;
	iv.	Minimization of exposure time of disturbed soil areas;
	v.	Minimization of grading during the wet season and correlation of grading with seasonal dry weather periods to the extent feasible;
	vi.	Limitation of grading to a maximum disturbed area as determined by the City before either temporary or permanent erosion controls are implemented to prevent storm water pollution. The City has the option of temporarily increasing the size of disturbed soil areas by a set amount beyond the maximum, if the individual site is in compliance with applicable storm water regulations and the site has adequate control practices implemented to prevent storm water pollution;
	vii.	Temporary stabilization and reseeding of disturbed soil areas as rapidly as feasible;
	viii.	Wind erosion controls;
	ix.	Tracing controls;
	x.	Non-stormwater management measures to prevent illicit discharges and control storm water pollution sources;
	xi.	Waste management measures;
	xii.	Preservation of natural hydrologic features where feasible;
	xiii.	Preservation of riparian buffers and corridors where feasible;
	xiv.	Evaluation and maintenance of all BMPs, until removed; and
	xv.	Retention, reduction, and proper management of all storm water pollutant discharges on site to the MEP standard.
Erosion and Sediment Controls	i.	Erosion prevention. Erosion prevention is to be used as the most important measure for keeping sediment on site during construction;
	ii.	Sediments controls. Sediment controls are to be used as a supplement to erosion prevention for keeping sediment on-site during construction;
	i.	Slope stabilization must be used on all active slopes during rain events regardless of the season and on all inactive slopes during the rainy season and during rain events in the dry season; and
	ii.	Permanent revegetation or landscaping as early as feasible.

For building projects, which are not also subject to a grading and/or encroachment permit, a fact sheet, provided in English and Spanish, details the BMP requirements. The Fact Sheet is provided in **Exhibit 8.1**.

For grading projects, the applicant is required to complete the City's Runoff Threat Assessment Form **(Exhibit 8.2)**, which requires minimum BMPs based on the following factors:

- Site slopes
- Project size and type
- Sensitivity and proximity to receiving water bodies
- Non-storm water discharges

For encroachment projects, the City has developed standard encroachment conditions, which include requirements for Best Management Practices and storm drain protection, in addition to the City's Runoff Threat Assessment Form. During the pre-job meeting for encroachment permits, BMP requirements are also discussed.

8.5.1 Enhanced BMPs

The City may require enhanced or additional BMPs should the project site pose an exceptional threat to water quality. In determining the potential threat, the City considers the following factors:

- Soil erosion potential or soil type
- Site slopes
- Project size and type
- Sensitivity and proximity to receiving water bodies
- Non-storm water discharges
- Ineffectiveness of other BMPs
- Proximity and sensitivity of aquatic threatened and endangered species of concern
- Known effects of AST chemicals
- Any other relevant factors

There are currently no water bodies impaired for sediment or turbidity within the City's jurisdiction, nor are any water bodies within the City tributary to water bodies impaired for these pollutants.

8.5.2 Construction BMPs Standards and Resources

The City of Dana Point has designated construction-specific BMPs standards. **Table 8.1** describes the BMPs designated for use with the LIP. The BMP fact sheets are from the 2015 edition of the California Storm Water Best Management Practices Handbook—Construction, www.casqa.org. The Fact Sheets can be downloaded for personal use from: www.ocwatersheds.com/documents/bmp/constructionactivities.

Table 8.1: Designated Construction BMPs

CATEGORY	BMP #	BMP NAME
Erosion Control BMPs	EC-1	Scheduling
	EC-2	Preservation of Existing Vegetation
	EC-3	Hydraulic Mulch
	EC-4	Hydroseeding
	EC-5	Soil Binders
	EC-6	Straw Mulch
	EC-7	Geotextiles, Plastic Covers & Erosion Control Blankets/ Mats
	EC-8	Wood Mulching
	EC-9	Earth Dikes/ Drainage Swales & Lined Ditches
	EC-10	Velocity Dissipation Devices
	EC-11	Slope Drains
	EC-12	Streambank Stabilization
	EC-13	Reserved
	EC-14	Compost Blankets
	EC-15	Soil Preparation / Roughening
	EC-16	Non-Vegetative Stabilization
Sediment Control BMPs	SE-1	Silt Fence
	SE-2	Sediment Basin
	SE-3	Sediment Trap
	SE-4	Check Dam
	SE-5	Fiber Rolls
	SE-6	Gravel Bag Berm
	SE-7	Street Sweeping and Vacuuming
	SE-8	Sandbag Barrier
	SE-9	Straw Bale Barrier
	SE-10	Storm Drain Inlet Protection
	SE-11	Active Treatment Systems
	SE-12	Temporary Silt Dike
	SE-13	Compost Socks and Berms
	SE-14	Biofilter Bags
Wind Erosion Control BMPs	WE-1	Wind Erosion Control
Tracking Control BMPs	TC-1	Stabilized Construction Entrance/ Exit
	TC-2	Stabilized Construction Roadway
	TC-3	Entrance/Outlet Tire Wash

CATEGORY	BMP #	BMP NAME
Non-Stormwater Control BMPs	NS-1	Water Conservation Practices
	NS-2	Dewatering Operations
	NS-3	Paving and Grinding Operations
	NS-4	Temporary Stream Crossing
	NS-5	Clear Water Diversion
	NS-6	Illicit Connection/Illegal Discharge Detection and Reporting
	NS-7	Potable Water/Irrigation
	NS-8	Vehicle and Equipment Cleaning
	NS-9	Vehicle and Equipment Fueling
	NS-10	Vehicle and Equipment Maintenance
	NS-11	Pile Driving Operations
	NS-12	Concrete Curing
Non-Stormwater Control BMPs	NS-13	Concrete Finishing
	NS-14	Material and Equipment Use Over Water
	NS-15	Structure Demolition/Removal Over or Adjacent to Water
	NS-16	Temporary Batch Plants
Waste Management & Materials Pollution Control BMPs	WM-1	Material Delivery and Storage
	WM-2	Material Use
	WM-3	Stockpile Management
	WM-4	Spill Prevention and Control
	WM-5	Solid Waste Management
	WM-6	Hazardous Waste Management
	WM-7	Contaminated Soil Management
	WM-8	Concrete Waste Management
	WM-9	Sanitary/ Septic Waste Management
	WM-10	Liquid Waste Management

8.6 INSPECTION REQUIREMENTS FOR CONSTRUCTION SITES

8.6.1 Inspection Responsibilities

The City of Dana Point performs inspections of construction sites to verify that they appropriately comply with local permits and local ordinances and Order No. R9-2013-0001 as amended by Order Nos. R9-2015-0001 and R9-2015-0100 and that they continue to protect water quality. Construction sites are inspected until construction activity is complete.

Construction inspectors are also responsible for verifying that any site design, source control, and treatment control BMPs have been constructed and are operating in compliance with all specification, plans, permits, ordinances, the LIP, and Project WQMP, as applicable.

8.6.2 Inspection Frequencies

In setting priorities for inspecting permitted grading construction sites, the City considers the following factors using the City's Urban Runoff Threat Assessment Form as guide:

- Soil erosion potential
- Site slope
- Project size and type
- Sensitivity of receiving water bodies
- Proximity to receiving water bodies
- Non-storm water discharges
- Past record of non-compliance by the operators of the construction site
- Any other relevant factors

Current weather pattern is also considered. **Table 8.2** below provides a summary of minimum inspection frequencies:

Table 8.2: Minimum Inspection Frequencies for Construction Projects

Priority / Site Type	Wet Season (Oct 1 – April 30)	Dry Season (May 1 – Sept 30)
Grading Permit: High per Urban Runoff Threat Assessment Form	Monthly	Every other Month
Grading Permit: Medium per Urban Runoff Threat Assessment Form	Every other Month	Every other Month
Grading Permit: Low High per Urban Runoff Threat Assessment Form	Every other Month	Every other Month
Building Permitted Site w/ potential to impact water quality and without Grading Permit (Low Priority)	As Needed	As Needed

** Reinspection frequencies must be determined by each Copermittee based upon the severity of deficiencies, the nature of the construction activity, and the characteristics of soils and receiving water quality. **

8.6.3 Inspection Documentation Procedures

Inspections are tracked in the software database system (TRAK-iT). Photos, written descriptions, Notice of Non-compliance/Violation forms, and/or the City's Construction BMP Fact Sheet and Checklist (on the back) (**Exhibit 8.1)** may also be used to document the inspection. These tools have evolved and will

continue to evolve as needs arise. Therefore, they may be amended from time to time. For tracking purposes, BMP deficiencies (with the exception of some verbal warnings that are addressed immediately on site and do not require follow-up) are noted in the software database system. Other tools that may be used to implement this program, such as a Construction Inspection Form and a Notice of Non-compliance Form provided in **Exhibit 8.3** and **Exhibit 8.4.**

8.6.4 Enforcement Actions

Enforcement of construction projects is undertaken by the City of Dana Point's inspectors, code enforcement, and/or other staff who possess internal enforcement authority through established policies and procedures. The City has established procedures for enforcement actions as outlined in the City's Municipal Code.

If a significant and/or immediate threat to water quality is observed by an inspector, action will be taken to require the developer/contractor to immediately cease the discharge, which is consistent with the Enforcement Response Plan (see **Exhibit 4.2**) and the Enforcement Consistency Guide in Section 4 of the DAMP. **Table 8.3** outlines the City of Dana Point's escalating enforcement steps that will be taken by inspectors for private construction projects and for Public Works construction projects. Depending on the violation, the inspector may choose to utilize contract language, a local permit, the grading ordinance, or the water quality ordinance as the basis for enforcement.

Table 8.3: Enforcement Actions for Construction Projects

PRIVATE CONSTRUCTION PROJECTS	PUBLIC WORKS CONSTRUCTION PROJECTS
Verbal Warning Written Warning ▪ *Notice of Non-Compliance/Violation* ▪ *Administrative Compliance Order* ▪ *Administrative Citations or Fines* ▪ *Cease and Desist Order* Stop Work Order Revocation of Permit(s) and/or Denial of Future Permits Civil and Criminal Court Actions	Verbal Warning Written Warning ▪ *Notice of Non-Compliance/Violation* Enforcement of Contract ▪ *Withholding of Payment* ▪ *Bond* ▪ *Fines* ▪ *Stop Work Order* ▪ *Revocation of Contract* Civil and Criminal Court Actions

The most common enforcement actions that have been executed by the City in regards to this program are described below:

8.6.5 Verbal Warning

An effective and quick method for corrective actions has been a verbal warning, with corrections often completed while the inspector is present. Generally, verbal warnings are issued for those cases that are minor and not deliberate and/or can be easily remedied and have not resulted in a threat to human or environmental health. When compliance is achieved while the inspector is on site, these warnings are not documented as inspection violations.

8.6.6 Notice of Non-compliance/Notice of Violation

If a verbal warning is not corrected or the severity of the violation is such that a verbal warning is not strong enough, a written notice of non-compliance/violation may be issued describing the violation that is to be corrected and the time frame for corrective action. In judging the degree of severity, the City inspector may also take into account any history of similar or repeated violations by the responsible party at this or other sites. The notices shall be documented in the software database system. For permitted projects, the enforcement will be documented in the Inspection component of the Software database system, and for projects that do not require a permit, a Code Case will be opened. When the violation is corrected, this shall be noted in the project file and/or software database Code Case or Inspection.

In general, the Notice of Noncompliance/Violation may be issued when one or more of the following circumstances exist:

- A required BMP is not implemented or is not implemented properly and requires implementation by the responsible party;
- A leak or discharge is detected and requires elimination;
- A spill or other discharge occurred and cleanup of the spill or discharge is required;
- The violation or threat is not significant and has been short in duration;
- The responsible party is cooperative and has indicated a willingness to remedy the conditions;
- The violation or threat is an isolated incident; and
- The violation or threat does not affect and will not harm human health or the environment.

In general, a Notice of Non-Compliance/Violation is issued prior to a higher level of enforcement action. The Notice of Noncompliance should provide the person with a reasonable time period to correct the violation before further proceedings are brought against the person. However, egregious or unusual circumstances could dictate that a stronger enforcement tool is needed immediately and the following tools are available, when appropriate.

8.6.7 Administrative Compliance Orders

The Administrative Compliance Order is an appropriate enforcement tool in the following circumstances:

- An actual condition of noncompliance exists, but the condition cannot be remedied within a relatively short period of time;
- The owner of the property or facility operator has indicated willingness to come into compliance by meeting milestones established in the required time frame; and
- The violation does not pose an immediate threat to human health or the environment.

8.6.8 Administration Citations

Administrative Citation are issued for violations that involved circumstances that require a greater level of enforcement other than a verbal warning or a Notice of Non-compliance/Violation, or when the verbal warning/Notice of Non-compliance/Violation was served but not heeded to, or the same type of violation occurred. Administrative Citations for violations of the City's Water Quality Ordinance can include fines of up to $1,000. The City has established procedures for issuing Administrative Citation per the Dana Point Municipal Code.

8.6.9 Stop Work Order

The Stop Work Order may be appropriate when the following situations are encountered:

- Immediate action of the responsible party is necessary to stop an existing illicit discharge that is a threat to human health or the environment;
- Unpermitted work is occurring;
- Prior Notices of Non-compliance/Violation have not obtained a favorable response;
- The violation or threat is immediate in nature and may require an emergency spill response or immediate nuisance abatement if left unattended;
- Preparation for a forecasted rain event is not being accomplished adequately; and/or
- Other conditions warrant.

8.6.10 Suspension, Revocation, or Denial of Permits

The City may require the suspension, revocation, or denial of permits. Most permits issued by the City allow the City to suspend or revoke the permit if a violation occurs. The City can choose to exercise its rights to suspend or revoke a permit based on the conditions of the infraction. The decision to exercise this right should include consultation with the enforcing officer, the City's legal council, and other appropriate City staff. Cases for which the suspension or revocation may be appropriate include those when a permitted activity:

- Results in a continuous violation that cannot be or will not be remedied;

- Involves a violation that can only be stopped and remedied by ceasing the permitted activity; and/or
- Is continuously resulting in infractions and previous enforcement actions have not been successful in preventing further infractions.

8.6.11 Civil and/or Criminal Court Actions

Civil enforcement proceedings may be implemented in consultation with the City's legal counsel.

Criminal enforcement may be appropriate when evidence indicates that the responsible party has acted willfully with intent to cause, allow continuing, or concealing a discharge in violation of the Surface Runoff and Water Quality Protection Ordinance. In general, the three types of criminal remedies that can be utilized are issuance of a citation, infraction, and misdemeanor.

The City provides for Administrative Hearings, upon request, per the Dana Point Municipal Code.

8.6.12 Non-Compliance Reporting

The City of Dana Point considers a site non-compliant when one or more violations of local ordinances, permits, or plans exist on the site. The City of Dana Point will notify the San Diego Water Board in writing within five (5) calendar days of issuing escalated enforcement (as defined in the Copermittee's Enforcement Response Plan) to a construction site that poses a significant threat to water quality as a result of violations or other noncompliance with its permits and applicable local ordinances, and the requirements of this Order. Written notification may be provided electronically by email to the appropriate San Diego Water Board staff.

The City will also notify the San Diego Water Board of any persons required to obtain coverage under the statewide Industrial General Permit and Construction General Permit and those who have failed to do so, within five (5) calendar days from the time the Copermittee becomes aware of the circumstances. Written notification may be provided electronically by email to RB9_Nonfilers@waterboards.ca.gov.

9 EXISTING DEVELOPMENT

9.1 INTRODUCTION

The City of Dana Point requires commercial and industrial businesses to implement pollution prevention Best Management Practices (BMPs) and properly maintain any structural BMPs that have been implemented per development or redevelopment requirements, as identified in the site's Water Quality Management Plan (WQMP), when applicable. Known businesses are inventoried and the City ensures that BMPs are implemented through education, inspections, and enforcement. A parallel program is implemented in residential areas with an emphasis on education and outreach rather than inspections. This local regulatory oversight of the built environment supports both the principal requirements identified in Section E.5 of the Fifth Term Permit and effectively addresses two of the High Priority Water Quality Conditions (HPWQCs) identified in the WQIP, specifically, unnatural water balance in dry weather and pathogen health risk.

The existing development component of this plan is comprised of industrial/commercial, food facility, residential/homeowner association areas (HOAs), retrofitting existing development, and a training program (Section 6).

The City's Simplified Schematic of Water Quality Program Implementation Roles & Responsibilities provided as **Exhibit 2.3** shows the various City staff that cooperatively implements various components of the existing Development program.

9.2 COMMERCIAL AND INDUSTRIAL PROGRAM

Dana Point's Industrial/Commercial Program includes specifications for pollution-prevention methods for commercial and industrial areas and activities located within the City. Specific pollution prevention practices that are generally recognized in each Discharger's industry or business, or for that Discharger's activity, as being effective and economically advantageous, are designated by the City as minimum Best Management Practices (BMPs). The City, through an inspection program summarized below, verifies implementation of pollution-prevention methods by industries and commercial facilities.

In addition to the City Departments, other programs implemented by other public agencies provide for comprehensive implementation of water quality related activities. The Orange County Health Care Agency (OCHCA), Environmental Health Division is a Certified Unified Program Agency (CUPA) that inspects businesses within the City that generate hazardous waste for compliance with State and Federal regulations. Proper storage and care of hazardous waste is an important component of pollutant source control. The OCHCA, Environmental Health Division, Food Facility inspectors conduct inspections of all food facilities within the City as described in Section 9.3 of the DAMP. The Orange County Fire Authority (OCFA) inspects businesses within the City for compliance with the Uniform Fire Code and

responds to 911 calls that may involve industrial and commercial discharges, spills, chemical emergencies, accidents, etc. They also refer problems associated with non-stormwater discharges to the City for enforcement.

9.2.1 Commercial and Industrial Site & Source Inventory

The City of Dana Point maintains an inventory (database) of the following known commercial and industrial sites and sources, as required and appropriate:

- Eating and drinking establishments
- Automobile and other vehicle (boat) mechanical repair, maintenance, fueling, cleaning, body repair, or painting with activities occurring outdoors with a potential to discharge pollutants
- Mobile businesses, including automobile or other vehicle washing, carpet, drape, or furniture cleaning, and high pressure or steam cleaning. Note: The City of Dana Point does not have a business licensing program.
- Nurseries and greenhouses
- Hotels
- Other businesses with potential to discharge pollutants

The City's inventory database includes the following information about each identified industry or commercial facility within the City's jurisdiction:

- Business name
- Address information
- SIC code, if applicable
- Industrial sites: WDID
- Specific information
- Potential pollutants from facility
- Proximity to and/or discharge to ESA
- Other info, as appropriate

Since the City of Dana Point does not have a business license program, the inventory of known commercial and industrial sources is maintained by the City's Water Quality Engineer/Water Quality Program Manager and is updated as new information is obtained through the Certificate of Occupancy Program and redeveloped sites that require Water Quality Management Plans and Orange County Health Care Agency and South Coast Water District inventories of food facilities (restaurants).

9.2.2 Commercial/Industrial Best Management Practices

The City of Dana Point's commercial and industrial program includes specifications for minimum activity-based Best Management Practices (BMPs). The Minimum BMPs are activity-based and are part of the

DAMP. The BMP fact sheets are maintained on the www.ocwatersheds.com website for easy and consistent access at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities. The California Stormwater Quality Association (CASQA) Fact Sheets are also used as a reference and available upon request or available at: https://www.casqa.org/resources/bmp-handbooks.

The City requires the implementation of the designated BMPs at each commercial and industrial facility based on site-specific conditions in order to limit that facility's impact upon receiving water quality. See **Table 9.1** for minimum BMP requirements for each commercial/industrial category.

The table below is a general guideline and not all inclusive as specific business may have more than one type of business category and/or activity. Appropriate minimum BMPs must be implemented for all activities that may occur on the site to reduce storm water pollutants and prevent discharges from causing or contributing to a violation of water quality standards.

Table 9.1: Commercial and Industrial Sites and Sources and Minimum BMP Requirements

Commercial/Industrial Facility Categories in City Inventory	Minimum BMP Requirements
• Automobile repair, maintenance, fueling, or cleaning	• IC17 Spill Prevention & Clean Up • IC18 Vehicle & Equipment Fueling • IC19 Vehicle & Equipment Maintenance and Repair • IC20 Vehicle & Equipment Washing & Steam Cleaning • IC21 Waste Handling & Disposal • CASQA – Automotive Service – Body Repair • CASQA – Automotive Service – Maintenance
• Boat repair, maintenance, fueling, or cleaning	• IC13 Over Water Activities • IC14 Painting, Finishing & Coating of Vehicles, Boats, Building & Equipment • IC15 Parking & Storage Area Maintenance • IC 17 Spill Prevention & Clean Up • IC18 Vehicle & Equipment Fueling • IC19 Vehicle & Equipment Maintenance and Repair • IC20 Vehicle & Equipment Washing & Steam Cleaning • IC21 Waste Handling & Disposal
• Equipment repair, maintenance, fueling, or cleaning	• IC 17 Spill Prevention & Clean Up • IC18 Vehicle & Equipment Fueling • IC19 Vehicle & Equipment Maintenance and Repair • IC20 Vehicle & Equipment Washing & Steam Cleaning • IC21 Waste Handling & Disposal

Commercial/Industrial Facility Categories in City Inventory	Minimum BMP Requirements
• Automobile and other vehicle body repair or painting	• IC14 Painting, Finishing & Coating of Vehicles, Boats, Building & Equipment • IC15 Parking & Storage Area Maintenance • IC 17 Spill Prevention & Clean Up • IC21 Waste Handling & Disposal • CASQA Automotive Service – Body Repair
• Mobile automobile or other vehicle washing	• IC20 Vehicle & Equipment Washing & Steam Cleaning • BMPs for Mobile Detailers: www.danapoint.org/wqtipsbusinesses, (**Exhibit 9.1**) • IC24: Washwater disposal www.ocwatersheds.com/civicax/filebank/blobdload.aspx?BlobID=10201
• Automobile (or other vehicle) parking lots and storage facilities	• IC15 Parking and Storage Area Maintenance
• Retail or wholesale fueling	• IC 17 Spill Prevention & Clean Up • IC18 Vehicle & Equipment Fueling • IC21 Waste Handling & Disposal
• Pest control services	• IC7 Landscape Maintenance • IC21 Waste Handing and Disposal
• Eating or drinking establishments including food markets	• City of Dana Point Grease Management Requirements for Food Service Facilities (**Exhibit 7.2**) • IC22 Eating and Drinking Establishments
• Mobile carpet, drape or furniture cleaning	• IC4 Carpet Cleaning • IC24: Washwater disposal www.ocwatersheds.com/civicax/filebank/blobdload.aspx?BlobID=10201
• Cement mixing or cutting	• IC5 Concrete and Asphalt Production, Application and Cutting
• Masonry	• IC5 Concrete and Asphalt Production, Application and Cutting
• Painting and coating	• IC14 Painting, Finishing, and Coating of Vehicles, Boats, Building and Equipment
• Landscaping	• IC7 Landscape Maintenance
• Nurseries and greenhouses	• IC8. Nurseries and Greenhouses
• Golf courses, parks and other recreational areas/facilities	• IC6 Contaminated or Erodible Surface Areas • IC7 Landscape Maintenance
• Pool and fountain cleaning	• IC16 Pool and Fountain Cleaning
• Marinas	• IC13 Over Water Activities
• Portable Sanitary services	• IC21 Waste Handing and Disposal
• Building material retailers and storage	• IC3 Building Maintenance • IC10 Outdoor loading/unloading of materials • IC11 Outdoor Process Equipment Operation and Maintenance • IC12 Outdoor Storage of Raw Materials, Products, and Containers

Commercial/Industrial Facility Categories in City Inventory	Minimum BMP Requirements
• Animal facilities/Mobile Pet Services	• IC2 Animal Handling Areas • IC24: Washwater disposal www.ocwatersheds.com/civicax/filebank/blobdload.aspx?BlobID=10201
• Power washing services	• FP8: Best Management Practices for Power Washing & other Surface Cleaners (**Exhibit 9.2**) • IC24: Washwater disposal www.ocwatersheds.com/civicax/filebank/blobdload.aspx?BlobID=10201

County-wide brochures have also been developed for the designated BMPs for general commercial businesses and are also available at: www.ocwatersheds.com/publiced/resources/bussbrochure. It includes the following topics:

- Automotive Industry Tips
- Concrete/Mortar Tips
- Food Service Tips
- Proper Maintenance Practices for Your Business
- Compliance Best Management Practices for Mobile Businesses
- Landscaping and Gardening

Each of the three water districts also implements a Fats, Oils, & Grease (FOG) Control Program, which helps prevent sewage spills, thereby reducing and/or eliminating bacteria to the receiving waters.

9.2.3 Inspection of Commercial and Industrial Sites/Sources

The City of Dana Point annually inspects at least 20% of the industrial and commercial sites inventoried (excluding food facilities and mobile businesses, see below for respective programs to address these types of businesses) as described in Section 9.2.1, at a minimum. The City uses the following factors to determine when more frequent inspections may be necessary:

- Type of activity conducted and SIC code;
- Materials used at the facility;
- Amount and type of wastes generated;
- Pollutant discharge potential;
- History of non-storm water discharges;
- Size of facility;
- Proximity to receiving water bodies;
- Sensitivity of receiving water bodies;
- Whether the facility is subject to the General Industrial Permit or an individual NPDES permit;

- Whether the facility has filed a No Exposure Certification/Notice of Non-Applicability;
- Facility design;
- Total area of the site, area of the site where industrial or commercial activities occur, and area of the site exposed to rainfall and runoff;
- The facility's compliance history; and
- Any other relevant factors

In addition, inspections may be triggered by complaints of illegal discharges from commercial/industrial facilities made by the public or by another agency. This program is also in coordination with Water Quality Management Plan (WQMP) inspections, for those sites with WQMP requirements.

The City's inspections include:

- Verification of facility operations and activities,
- Check for coverage under the General Industrial Permit (Notice of Intent (NOI) and/or Waste Discharge Identification Number), if applicable;
- Assessment of compliance with the City's ordinances and permits related to runoff;
- Review of BMP implementation;
- Visual observations for non-storm water discharges, potential illicit connections, and potential discharge of pollutants in storm water runoff;
- Education and training on storm water pollution prevention, as conditions warrant; and
- Review of Water Quality Management Plan and Operation and Maintenance Plans, if the site is required to use such a plan.

Inspectors may use the commercial/industrial inspection forms provided in **Exhibit 9.3**. Other methods to document the inspection, such as follow-up letters and photos may also be used.

If concerns or violations are noted during the inspection, appropriate enforcement action will be implemented. These enforcement mechanisms available to the City of Dana Point are detailed in Section 10.5 of this LIP. The enforcement action will include informing the responsible party of what actions need to be taken to abate the concern or violation and a timeline for compliance. A code case, tracked in the City's TRAK-iT database, will be initiated for sites with violations. A follow-up inspection will be conducted to ensure compliance. There will also be escalated enforcement actions in accordance with the Enforcement Response Plan, as necessary, to obtain compliance.

9.2.4 Food Service Facilities

In order to address the High Priority Water Quality Condition (HPWQC) of Pathogen Health Risk as identified in the Water Quality Improvement Plan, the City of Dana Point focuses its commercial

inspection program on potential bacteria generating businesses and conducts an annual inspection at food facilities in Dana Point. The inspections cover the following topics:

- Trash storage and disposal;
- Grease storage and disposal;
- Maintenance of trash collection area and grease management;
- Proper discharge of wash water (e.g., from floor mats, driveways, sidewalks, etc.);
- Identification of outdoor sewer and MS4 connections; and
- Education of property managers when grease and/or trash facilities are shared by multiple facilities.

Grease interceptors and sanitary sewer connections are covered by the Fats, Oils and Grease (FOG) program implemented by the respective water districts. The Orange County Health Care Agency (OCHCA) also conducts an annual water quality inspection on all food service facilities, on behalf of South Orange County cities, and water quality issues are documented and included in the OCHCA's monthly reports. The City will conduct follow-up inspections on facilities, when necessary. Food facility inspections are documented on the City's Food Service Establishment Pollution Prevention BMP Inspection Form, provided as **Exhibit 9.4**.

9.3 RESIDENTIAL/HOMEOWNER ASSOCATION PROGRAM

The Residential/Homeowner Association Program described in this section was developed pursuant to Section E.5 of the Fifth Term Permit and is designed to:

- Promote and encourage the use of pollution prevention methods in residential areas;
- Promote and encourage the implementation, including operation and maintenance, when appropriate, of designated BMPs in residential areas;
- Reduce residential discharges of storm water pollutants, including pesticides, herbicides and fertilizers, to the MEP; and
- Effectively prohibit non-stormwater discharges into the MS4;

9.3.1 Residential/Homeowner Association and Pollutant Source Inventory

The City has identified Residential Management Areas (RMAs) via Homeowner's Associations and other neighborhoods, including Capistrano Beach, Town Center/Lantern Village, and the north central area. A map of the residential area is provided as **Exhibit 9.5**.

Residential pollutants and activities that have potential to impact water quality and the HPWQCs, as identified in the South Orange County Water Quality Management Plan, are the focus of the residential program, and include:

- Non storm water discharges including sprinkler runoff, car wash washwater, and other residential washwater
- Bacteria through improper management of trash, green waste, and pet waste

In addition, the following residential activities have been determined to pose a potential threat to other pollutants of concern:

- Automobile repair, maintenance, and parking
- Home and garden care activities and product use (pesticides, herbicides, and fertilizers)
- Disposal household hazardous waste (e.g., paints and cleaning products)

In addition to specific residential activities, Homeowner's Association (HOAs) may conduct other activities that may generate potential pollutants. **Table 9.2**, presented below, illustrates the relationship of these activities and the potential pollutants they generate.

Table 9.2: Potential Pollutants from HOA Activities

Activity	Potential Pollutants								
	Sediments	Nutrients	Pathogens/ Coliform	Foaming Agents	Metals	Hydrocarbons	Hazardous Materials	Pesticides & herbicides	Non-stormwater discharges
Sidewalk, plaza and fountain cleaning	X	X	X	X			X		X
Landscape maintenance	X	X	X				X	X	X
Home and garden care	X	X	X	X	X		X	X	X
Pet waste	X	X	X						X
Garden waste	X	X	X				X	X	
Automobile parking	X				X	X	X		
Community center O&M	X	X	X						X
Recreation area O&M	X	X	X					X	X
Maintenance yard operation	X	X	X	X	X	X	X	X	X

9.3.2 Residential BMPS

The City of Dana Point has designated a minimum set of activity-specific BMPs for residential activities to address the HPWQCs.

The City has selected the BMPs shown in **Table 9.3** below that are appropriate to prevent or mitigate pollution generated from the specific activities typical of residences within the jurisdiction. The corresponding BMP fact sheets are included as **Exhibit 9.6**. The City requires the implementation of the

following minimum BMPs shown in **Table 9.3** for pollution prevention at all residential areas with activities that pose high threat to water quality.

Table 9.3: Designated Residential Activities BMPs and Programs

Activity	BMP Fact Sheet/Brochure
Automobile Repair and Maintenance	R-1
Car Washing Rules	City of Dana Point Car Washing Rules
Automobile Parking	R-3
Home and Garden Care Activities	R-4
Pet Care	R-5
Household Hazardous Waste Pollution Prevent & Services	City Waste Services Flyer
Water Conservation	R-8

In addition, the following brochures that are applicable to Dana Point residents are available at: http://www.ocwatersheds.com/PublicEd/resources/residential-brochures.html

- Ocean Begins Here
- Children's Brochure
- Home Mechanic
- Homeowners Guide for Sustainable Water Use
- Household Tips
- Household Hazardous Waste
- Recycled Oil South
- Responsible Pest Control
- Sewage
- Home Improvement Projects
- Tips for Landscape and Garden
- Pet Care
- Pool Maintenance
- Pool Draining
- Paint Projects

9.3.3 Homeowner's Association BMPS

In addition to the residential BMPs described above, the City of Dana Point has designated a minimum set of activity-specific BMPs for HOA areas listed in **Table 9.4**. Each HOA area is expected to implement those BMPs that are associated with the activities being conducted.

Table 9.4: BMPs for HOAs

ACTIVITY	BMP	Fact Sheet
Cleaning of CIA/HOA sidewalks, plaza, and entry monuments and fountains	Sidewalk, plaza, and entry monument and fountain maintenance BMPs	FP-4
Landscape maintenance including irrigation and fertilization	Landscape maintenance BMPs	FP-2 IC-7
Operation and maintenance of community pools	Pool cleaning BMPs	IC-16
Street sweeping	Street sweeping BMPs	FP-3
Trash collection, recycling, and disposal	Solid waste handling BMPs	FF-13
Inspection and cleaning of storm drains	Drainage system operation and maintenance BMPs	DF-1
Operation and maintenance of water and sewer lined (not controlled by utility company)	Water and sewer utility operation and maintenance BMPs	FP-6

The BMP Fact Sheets are provided here: www.ocwatersheds.com/documents/bmp/commoninterestactivities or provided upon request.

9.4 RESIDENTIAL/HOMEOWNER ASSOCIATION IMPLEMENTATION AND INSPECTIONS

Implementation efforts will vary depending on whether high priority activities occur within a HOA area, or if the area is located within an area selected for enhanced implementation as part of the residential program. The implementation of the residential/homeowner's association program will be implemented in coordination with other program components, such as municipal field staff program and training (Sections 5 & 6), public education (Section 6), general code enforcement (Section 10.5), ID/ID investigation (Section 10), and WQMP implementation verification program, (Section 7). Implementation efforts include:

- Training City Personnel who have regular contact with residential areas (e.g. park maintenance personnel, street sweepers, code enforcement officers, etc.) to serve as informal inspectors performing field reviews and "drive-by" inspections as noted in the Permit;
- Responding to complaints and general enforcement of Dana Point Municipal Codes;
- Updating the City's Website (www.danapoint.org) by providing the BMP fact sheets and information on residential storm water pollution prevention;

- Conducting Targeted Outreach Mailings, as needed or requested, with topics such as pet waste, sweep it up, outdoor water conservation, car washing, and private sewer lateral maintenance; and
- WQMP operation and maintenance verification where. Some HOAs have WQMP which require implementation of specific non-structural and structural BMPs. Regular inspections or verifications of applicable BMP implementation will help meet the requirements of this program.

If concerns or violations are noted during the inspection, appropriate enforcement action will be implemented. These enforcement mechanisms available to the City of Dana Point are detailed in Section 10.5 of this LIP. The enforcement action will include informing the responsible party of what actions need to be taken to abate the concern or violation and a timeline for compliance. A code case, tracked in the City's TRAK-iT database, will be initiated for sites with violations. A follow-up inspection will be conducted to ensure compliance. In addition, escalated enforcement actions will be implemented in accordance with the Enforcement Response Plan, as necessary, to obtain compliance.

9.5 RETROFITTING EXISTING DEVELOPMENT PROGRAM

The Fifth Term Permit requires the City to identify existing development areas that are potential candidate for retrofit and/or rehabilitation projects to address sources of pollutants and/or stressors that contribute to HPWQC in the South OC WMA, which are unnatural water balance, pathogen health risk and stream erosion. As part of WQIP development, the Permittees elected to perform the optional Watershed Management Area Analysis (WMAA) described in Permit Provision B.3.b.(4) to develop an integrated approach for their land development stormwater planning programs by promoting evaluation of multiple strategies for water quality improvement and development of watershed-scale solutions for improving overall water quality in the watershed.

Through the WMAA the following three components were conducted:

1. Perform analysis and develop Geographic Information System (GIS) layers (maps) by gathering information pertaining to the physical characteristics of the WMA (referred to herein as WMA Characterization). This includes identifying hydrologic and infiltration features of the watersheds, land uses, stormwater conveyance and management facility locations that affect the watershed hydrology.
2. Using the WMA Characterization results, compile a list of candidate projects that could potentially be used as alternative compliance options for Priority Development Projects. Such projects may include opportunities for stream or riparian area rehabilitation, opportunities for retrofitting existing infrastructure to incorporate stormwater retention or treatment, or opportunities for regional BMPs, among others.
3. Additionally, using the WMA Characterization maps, identify areas within the watershed management area where it is appropriate to allow for exemptions from hydromodification

management requirements that are in addition to those already allowed by the Permit for Priority Development Projects.

Exhibits developed as part of the WMAA are located in Appendix K of the WQIP. The exhibits include hydrologic and infiltration features of the watersheds, land uses, stormwater conveyance and management facility locations. Additionally, existing and potential retrofit locations for each subwatershed are also located in Appendix K of the WQIP and identified as the following:

- Figure 6.11 – Laguna Coastal Watershed,
- Figure 7.11 – Aliso Creek Watershed,
- Figure 8.11 – Dana Point Watershed,
- Figure 9.11 – San Juan Creek Watershed, and,
- Figure 10.11 – San Clemente Creek Watershed

Prior to implementing these retrofit projects the Permittees must demonstrate that implementing such a retrofit project would provide greater overall benefit to the watershed than requiring implementation of the onsite structural BMPs through the implementation of the WQIP. The Permittees are currently implementing a number of WQIP strategies such as:

- Development of the Comprehensive Human Waste Source Reduction Strategy Work Plan
- Outfall Capture Feasibility Studies,
- Flow Regime Special Study,
- Reach Rehabilitation Alternatives And Feasibility Studies And Associated Upland Flow Control Opportunity Evaluation, etc.

The completion of these strategies will further assist in identifying source and/or stressors that contribute to HPWQC. Overall, the City will employ a range of strategies to facilitate the implementation or construction of retrofit and rehabilitation projects in accordance with the WQIP. The City may also consider partnering with other neighboring jurisdictions to install regional BMPs where retrofit projects are deemed to provide a greater net benefit to the City than projects implemented only by the City.

10 ILLICIT DISCHARGES AND ILLICIT CONNECTIONS

10.1 INTRODUCTION

The program described in this section was developed pursuant to Section E.2 of the Fifth Term Permit, **Section 10** of the DAMP and in accordance with the strategies in the Water Quality Improvement Plan (WQIP). As illicit discharges and illicit connections (ID/ICs) are potential significant sources of pollutants for the municipal storm drain system, the City implements a comprehensive program for detecting, responding to, investigating, and eliminating ID/ICs in an efficient and timely manner. Please refer to the Dana Point Municipal Code, Chapter 15.10 (www.danapoint.org/municipalcode) for the definition of illicit discharges and connections.

Abating ID/IC directly supports achievement in obtaining the goals of two of the High Priority Water Quality Conditions (HPWQC) identified in the Water Quality Improvement Plan (WQIP), specifically, unnatural water balance in dry weather and pathogen health risk.

10.2 PROGRAM MANAGEMENT

In order to ensure that this program is comprehensive and effective, it is integrated with the municipal, residential, commercial, industrial, and construction inspection programs (LIP Sections 5, 8, and 9), outreach and training program (LIP Section 6), new development and significant redevelopment program (LIP Section 7), and water quality monitoring program (LIP Section 11). Relevant legal authorities are detailed in Section 4 of this LIP and incorporated by reference.

The City's Public Works Department and Code Enforcement Division are predominantly responsible for implementing and enforcing this Section, under the direction the Director of Public Works & Engineering and designee. The water quality program organizational chart is provided in Section 2. Key roles are described below.

Authorized Enforcement Staff

Authorized enforcement staff are City employees, including Code Enforcement, Building Inspectors and Public Works staff, including contracted staff, as appropriate, assigned to duties involving permits and other City approvals, inspections, investigations, and enforcement related to this Section.

Spill Responders

Spill Responders are staff authorized to coordinate with the County of Orange per Water Quality Ordinance Implementation Agreement (**Exhibit 2.1**), Orange County Fire Authority, South Coast Water District, Moulton Niguel Water District, San Juan Capistrano Utilities, and other clean up contractors, as necessary, to respond to spills, leaks, or prohibited (illicit) discharges of pollutants requiring clean-up.

Enforcing Attorney

The City Attorney functions as legal counsel for the City as described in Section 4 of this LIP.

OC Hazardous Materials Strike Force

The Strike Force is a multi-jurisdictional committee that provides tactical, logistical, and training support for the investigation and enforcement of environmental regulations through the Orange County District Attorney's office. The City will utilize this network of support for assistance in investigations and enforcement proceedings when necessary.

County of Orange and City of Dana Point Water Quality Ordinance Implementation Agreement

The City has entered into an agreement with the County of Orange, the Water Quality Ordinance Implementation Agreement, which enables coordination between the City and County in meeting our obligations under the applicable NPDES stormwater permit, including utilizing their Authorized Inspectors to provide scientific, technical, and contractual services and spill response resources to implement the Water Quality Protection Ordinance and Local Implementation Plan (LIP), on an as needed basis. **(Exhibit 2.1)**

10.3 PREVENTION AND DETECTION STRATEGIES

The City of has a number of programs that facilitate the prevention and detection of sources of illicit discharges and illicit connections. On-going activities that assist in the prevention and detection of illicit discharges and illicit connections include:

- Maintenance of necessary legal authorities, including adoption and implementation of appropriate ordinances with enforcement mechanisms and prohibitions of illicit discharges and illicit connections (LIP Section 4).
- Application of development and redevelopment guidance, processes, standards, and requirements to prevent illicit discharges and illicit connections (LIP Section 7).
- Inspection of municipal, residential, commercial, and industrial facilities, as well as construction projects (LIP Sections 5, 8, and 9). MS4 facilities are inspected for illicit discharges and illicit connections during routine maintenance activities.
- Water quality monitoring, including dry weather field screening and analytical monitoring to detect illicit discharges and illicit connections (LIP Section 11).
- GIS mapping of the MS4, including drains and corresponding drainage areas, helps facilitate preventative and response efforts. Maps are confirmed during water quality monitoring and updated, as needed (LIP Section 5).
- Training of City field operations staff and contractors to appropriately report and/or respond to suspected illicit discharges and illicit connections (LIP Section 6).

- Providing a number of ways for reporting water pollution concerns, including:
  - Orange County 24-Hour Water Pollution Hotline: 1-877-89-SPILL & online reporting at www.h2OC.org
  - City 24-Hour Emergency – Police dispatch: 949-770-6011
  - City of Dana Point's 24-Hour Code Complaint Hotline: 949 248-3573
  - City Code Enforcement Department: 949-248-3564
  - City Water Quality Engineer: 949-248-3584 or lzawaski@danapoint.org
  - General Public Works: 949-248-3554
  - South Coast Water District 24-Hour Sewer Spills: 949-499-4555
  - Moulton Niguel Water District: 949-31-2500
- Implementation of education, public information, and other activities to facilitate the proper management and disposal of used oil and toxic materials, as well as awareness of discharge and connection prohibitions (LIP Section 6).
- Participation, as needed, in the OC Hazardous Materials Strike Force.

10.4 INVESTIGATIONS

The City will investigate each ID/IC that is reported, observed or suspected. Investigation is generally initiated by:

- Reports made by City staff, government agencies, or the general public;
- Results by the data from the water quality monitoring program; and
- Professional judgment of water quality monitoring personnel and Authorized Enforcement Staff, for example, obvious illicit discharges due to visual observations or odor

The primary goal of this program is to abate an illicit discharge. Education and enforcement actions are used to prevent future ID/ICs. Illicit discharges and illicit connections are investigated in general accordance with the DAMP Investigative Guidance Manual and the San Diego Region Dry Weather Numeric Action Level (NAL) Source Identification Guidance document, which contains detailed approaches, strategies, and guidance to investigate issues observed through various monitoring programs. Both documents are provided as **Exhibit 10.1** and **Exhibit 10.2**, respectively**.**

Note that sewer spills are under the authority of independent agencies and the spill response procedures are described separately in Section 10.6 below.

An investigation response to an ID/IC typically consists of:

- On-site Assessment/Investigation/Inspections;
- Notifications and Requests for Assistance, if needed;
- Control/Containment/Clean-Up; and
- Enforcement, as appropriate

A diagram depicting the general response to illicit discharges is attached to this Section as **Exhibit 10.3**. It provides a concept of operations beginning with the discovery or notification of an incident through clean-up and enforcement actions.

On-site Assessment/Investigations/Inspections

Upon arriving at the scene, the City of Dana Point's Inspector or Responder will first attempt to determine whether or not an illicit discharge or connection occurred or exists. Once an illicit discharge or connection is confirmed, the Inspector will try to determine the source, why the incident occurred, whether the discharge or release was deliberate or accidental, and whether or not the incident is a repeat occurrence, etc. The investigation will be carefully documented to ensure that accurate information is obtained and all evidentiary requirements are met. Documentation is also intended to ensure that the required regulatory reporting is completed, enforcement and cost recovery actions can be justified, repeat offenders and other areas of concern can be identified, program improvements can be made, and program effectiveness assessments can be prepared.

Investigation documentation includes:

- Information on how the City was notified
- Agency notifications and requests for assistance made
- The location and specific details about the spill/incident
- Information about the alleged responsible party
- Photos, samples or other evidence
- The results of the investigation
- The actions that were taken as a result

A code case will be initiated in the City's TRAK-iT database, where all the documentations and actions (chronology) will be tracked in the code case file.

The Investigative Guidance Manual (Manual) shown in **Exhibit 10.1** was developed for the Authorized Inspectors to specifically address the investigative portion of an ID/IC response. The Manual outlines the fundamental techniques that should be followed during investigations in order to collect legally defensible data. The Manual addresses record keeping, site entry, interviewing, photographs, sample collection, and report writing.

Notifications and Requests for Assistance

After conducting an on-site assessment, several notifications may be necessary. Notifications may include contacting the obvious responsible party, other agencies or entities that may be affected by or have jurisdiction over the pollutant or discharge, and/or requesting assistance when the situation requires resources beyond the City's. The Agency Notification List is included in **Exhibit 10.4.**

Control/Containment/Clean-Up

In preparation for the clean-up phase of the response, the Authorized Enforcement Staff or Spill Responder will evaluate the resources necessary to perform the clean-up and initiate mobilization of the necessary resources. The main objective in the clean-up operation is to restore the impacted area back to its original state (to the maximum extent practicable) and prevent further environmental degradation in the surrounding area of the incident. It is important that the clean-up is completed in a timely and cost-effective manner. Clean up resources are provided in **Exhibit 10.5**.

The City may deliver to the Responsible Party, an invoice for applicable clean-up costs and/or issue an enforcement action, discussed in detail in Section 10.5.

Trauma scene wastes (i.e. blood and human tissue) may be encountered at various incidents including crime and/or accident scenes. Since trauma scene wastes require the implementation of special procedures, the City utilizes various specialty biohazard clean-up contractors to clean up these types of wastes.

The City contracts with outside agencies, including OC Public Works and the Orange County Fire Authority, for control and containment services. South Coast Water District also responds to non-sewage spills/incidents related to potable and recycled water service facilities and also upon the request of the City for other spill assistance. Outside agencies employ control, containment, and documentation procedures described in greater detail in their individual spill/incident response plans.

10.4.1 Reporting

The ID/IC program has a number of reporting requirements. The requirements include:

- Proposition 65 Notification – Health and Safety Code 25180.7 provides that:

  "Any designated government employee who obtains information in the course of his official duties revealing the illicit discharge or threatened illicit discharge of a hazardous waste within the geographical area of his jurisdiction, and who knows that such discharge or threatened discharge is likely to cause substantial injury to public health or safety, must, within 72 hours, disclose such information to the local health officer."

The Proposition 65 Hotline telephone number in Orange County is (714) 433-6403; fax number is (714) 754-1768.

- Regional Board Notifications – If a spill, leak, or illicit dumping is determined to endanger health or the environment, the Permittees provide oral notification to the Regional Board by phone or e-mail within 24 hours of the discovery followed by a written submission within 5 days.

  The key pieces of information that are included with the oral notification include:

  - The date and time of the incident;
  - Reporting party contact information;
  - A description of the incident including why it occurred;
  - The location;
  - Alleged responsible party contact information; and
  - Status on actions taken.

Each Co-permittee must submit a summary of the non-storm water discharges and illicit discharges and connections investigated and eliminated within its jurisdiction with each Water Quality Improvement Plan Annual Report under the Provision F.3.b.(3) of the Fifth Term Permit.

10.5 ENFORCEMENT

Enforcement is undertaken in order to compel the elimination of illicit discharges and illicit connections, and if necessary, to penalize offending parties. Enforcement is implemented in accordance with City policies and procedures that have been established through the Dana Point Municipal Code, including the City's Water Quality Ordinance, the Enforcement Response Plan, , and the City of Dana Point Code Enforcement Operations Manual. Violations may be handled administratively or as criminal cases.

10.5.1 Type of Enforcement

The City Municipal Code's Administrative Citation & Public Nuisance procedures, along with other enforcement options provided for in the City' Water Quality Ordinance (available at www.danapoint.org/municipalcode), and the companion reference documents including the Enforcement Response Plan provided as **Exhibit 4.2**. Some of the factors that influence this decision include the duration and significance of the violation, the cooperativeness and willingness of the responsible party(ies) to remedy the violation, whether the violation is isolated or recurring, and whether the violation will affect or harm human health or the environment.

10.5.2 Verbal Warnings/Educational Letters

Verbal Warnings/Educational letters have been shown to be effective for specific situations, including, but not limited to:

- When an Authorized Enforcement Staff believes that the water pollution complaint may be valid, but does not have evidence to substantiate it;
- When a second party or resident hires a contractor who causes an incident. In this case the contractor may receive the administrative remedy, while the resident may receive a verbal warning or educational letter;
- A violation was not serious nor intentional; and/or
- The responsible party could not be identified. In some cases, a focused outreach effort may be implemented to address a neighborhood or specific group or industry that could have contributed to a concern.

10.5.3 Administrative Remedies

The City of Dana Point has several administrative remedies, which provide a range of enforcement responses and is described below.

Notices of Violation/Notice of Non-Compliance

Notices of Violation/Non-Compliances are issued in general, when:

- The violation or threat is not significant and has been short in duration and easily remedied;
- The responsible party is cooperative and demonstrates expedient remedy of the issue;
- The violation or threat is an isolated incident;
- The violation or threat does not adversely affect or harm human health or the environment

The Notice of Violation/Non-Compliance should indicate a time period for compliance or remedy before further proceedings will be brought against the responsible party. In most circumstances, a Notice of Violation is issued prior to an issuance of a higher enforcement remedy such as an Administrative Citation or Compliance Order, Stop Work, Cease and Desist Order, etc. indicating that the act constitutes a violation and that the violation must be corrected. However, egregious or unusual circumstances may warrant that an initial stronger enforcement method is appropriate.

Administrative Citations

In most cases, Administrative citations carrying civil fines are issued pursuant to chapter 1.10 of the Dana Point Municipal Code where a party is violating, causing, and/or maintaining a violation of the Water Quality Ordinance. A Notice of Violation may have been issued prior to the Administrative Citation; however it is not required.

Administrative Compliance Orders

Administrative compliance orders may be issued in instances where a violation exists, but the condition cannot be remedied within a relatively short period of time and the owner of the property or facility

operator has indicated willingness to comply by meeting milestones established in a reasonable schedule and the violation does not pose an immediate threat.

Cease and Desist/Stop Work Orders

Cease and Desist/Stop Work Orders may be issued when an immediate action of the responsible party is necessary to stop a violation of the Water Quality Ordinance and/or as a first step in ordering the removal of nuisance conditions, which threaten to cause an unauthorized discharge of pollutants if exposed to rain or surface runoff. Some example of cases where a Cease and Desist/Stop Work Order may be issued, include but are not limited to:

- The violation or threat is immediate in nature and may require an emergency spill response or immediate nuisance abatement, if left unattended;
- The violation or threat exhibits a potential situation that may harm human health or the environment;
- The Authorized Enforcement Staff's correspondence with the responsible party indicates that further authority maybe required before remedial action will occur; and/or
- The Authorized Enforcement Staff's prior enforcement measures have not obtained an adequate responsive action.

Nuisance Abatement

Any condition in violation of the Water Quality Ordinance, including the maintenance or use of any illicit connection or the occurrence of any illicit discharge, constitutes a threat to public health, safety, and welfare, and may be declared and deemed a nuisance pursuant to Government Code Section 38771. Nuisances are addressed as described in Chapter 6.14 of the Dana Point Municipal Code, when appropriate.

Other Administrative Remedies

When a violation is related to the City's issuance of a local permit in accordance with the Water Quality Ordinance, administrative proceedings to suspend, revoke, or modify the permit may occur pursuant to City policy and ordinance, as applicable.

Other Civil Actions

Authorized Enforcement Staff will consult with the Enforcing Attorney in matters of continuing or emergency nuisance, and at the discretion of the Water Quality Program Manager and/or Enforcing Attorney, a civil injunction may be sought or other civil proceeding may be brought in accordance with the Water Quality Ordinance.

10.5.4 Criminal Remedies

Criminal enforcement is appropriate when evidence indicates that the violator has acted willfully with intent to cause, continue, or conceal an illicit discharge or illicit connection in violation of the Water Quality Ordinance.

Prosecutor

The Enforcing Attorney may act on the request of the City Manager to pursue criminal enforcement in accordance with City policy and code.

Infractions

At his/her discretion, the Enforcing Attorney may treat misdemeanor acts as infractions. Factors that may be considered include:

- The duration of the violation or threatened violation
- The compliance history of the person, business, or entity
- The effort made to comply with an established compliance schedule
- The existence of prior enforcement actions
- The actual harm to human health or the environment from the violation

Misdemeanors

The Enforcing Attorney may treat acts involving negligently or knowingly violating the Water Quality Ordinance, undertaking to conceal a violation, continuing a violation after notice thereof, or violating the terms, conditions, and/or requirements of any local permit issued pursuant to the Water Quality Ordinance, as misdemeanors.

Administrative Hearings

The ordinance provides for appeals of the Authorized Inspector's decisions to a designated Hearing Officer. The final decisions of Hearing Officers are appealable to the court with proper jurisdiction under statutory review procedures. For further information on the administrative hearing process, see the Enforcement Consistency Guide.

Criminal Citations

Where criminal enforcement is indicated, the Orange County Sheriff's Department may cause issuance of a criminal citation to the offending party pursuant to California Penal Code Sections 853.5, 853.6, and/or 853.9.

10.6 SEWAGE SPILL RESPONSE

10.6.1 Program Responsibilities

The Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (State Water Resources Control Board, Order No. 2006-0003) and San Diego Regional Board Order No. R9-2007-0005 assigns responsibilities relative to sanitary sewer overflows to the owners and operators of sanitary sewer systems. These orders influence sewage spill/incident responses, which is conducted by independent agencies in the City of Dana Point.

South Coast Water District and Moulton Niguel Water District currently have jurisdiction in their designated service areas and are responsible for preventative and corrective sewer maintenance programs within the City (See **Exhibit 5.1**). Their programs consist of procedures and methodologies provided for the operation, maintenance, repair, and replacement of sewer mains, manholes, and pump stations. The program provides for routine monitoring, inspection, cleaning, and related maintenance of all components of the municipal sanitary sewer system in order to reduce the potential of sanitary sewer overflows (SSOs) and structural failures.

The Districts are also responsible for activities to respond to, contain, and clean-up sewage spills/incidents originating from their wastewater and sanitary systems, including systems that collect and convey wastewater to publicly owned treatment facilities. The districts conduct all reporting requirements related to sewer overflows. The City cooperates with the District in order to maximize water quality protection.

10.6.2 Sewer Spill Response

Pursuant to the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, South Coast Water District and Moulton Niguel Water District are responsible for responding to, containing, and cleaning up sewage spills/incidents originating from their wastewater and sanitary systems, including systems that collect and convey wastewater to publicly owned treatment facilities. It is those agencies' standard operating policy to respond to all sewage spills/incidents from private systems as well. Each agency has implemented an overflow emergency response plan that is used during sewage spills/incidents.

In the event that notification of a sewage spill/incident within the City's boundaries is received by the City, staff will notify the appropriate sewer district immediately.

- South Coast Water District provides water and sewer services for the majority of Dana Point
    - General & 24-hour Emergency number (including water spills): 949-499-4555

- Moulton Niguel Water District provides water and sewer services for Dana Woods, Terraza Del Mar, Encantamar, and Pacific Island Villas

    - General and 24-hour Emergency number (including sewer spills): 949-831-2500

10.6.3 Reporting

Regulatory reporting for sewage spills/incidents is the responsibility of the owners and operators of sanitary sewer systems.

11 WATER QUALITY MONITORING AND ASSESSMENT PROGRAM (MAP)

The Water Quality Management Plan requires a Monitoring and Assessment Program (MAP) that describes the strategies and methods that the City and Copermittees will use to monitor and assess progress of the strategies and the conditions of receiving waters and discharges from the MS4 under wet weather and dry weather conditions. The MAP also describes the parameters of the iterative and adaptive approach that will be used for subsequent updates of the WQIP. The specific field and laboratory methods and protocols and data quality objectives will be included within the South Orange County Monitoring and Assessment Program Quality Assurance Program Plan (QAPP), which is currently in development.

This Section is intended to provide a broad overview of the WQIP MAP. For more details, please refer to the South Orange County AMP and QAPP.

11.1 REGULATORY REQUIREMENTS

The South Orange County MAP and QAPP adhere to the prescriptive monitoring and assessment requirements of Permit Provision B, "Water Quality Improvement Plans," Provision D, "Monitoring and Assessment Program Requirements," and Attachment E, "Specific Provisions for Total Maximum Daily Loads Applicable to Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100."

11.2 MONITORING PROGRAM ELEMENTS

The Monitoring Program includes five major elements:

- The High Priority Water Quality Condition Monitoring Program will monitor the effectiveness of strategies and progress towards goals and schedules associated with the highest priority water quality conditions (HPWQCs);
- The Receiving Water Monitoring Program is intended to measure the long-term health of the watersheds;
- The MS4 Outfall Monitoring Program will monitor the discharges from the MS4 outfalls in order to assess the effectiveness of Copermittee Jurisdictional Runoff Management Programs (JRMPs) by prohibiting non-storm water discharges into the MS4 and reducing pollutants in storm water discharges;
- TMDL Monitoring Program will monitor progress toward achieving compliance with interim and final numeric targets specified in the Baby Beach Bacteria Total Maximum Daily Loads (TMDL) and the Twenty Beaches and Creeks TMDL; and

- Special Studies will address pollutant and/or stressor data gaps and/or develop information necessary to more effectively address the pollutants and/or stressors that cause or contribute to the HPWQCs.

Pursuant to Provision D.1 and Attachment E of the Permit, the Receiving Water Monitoring Program includes the following components:

- Long-Term Receiving Water Monitoring includes a broad set of monitoring activities designed to characterize receiving water quality during wet and dry weather over an extended, multi-year timeframe.
- Regional Monitoring Participation includes continued participation in regional monitoring programs that are applicable to the Copermittees, including the Southern California Bight Regional Monitoring Program, the Storm Water Monitoring Coalition Regional Monitoring Program, and the Unified Beach Water Quality Monitoring and Assessment Program.
- Sediment Quality Monitoring includes monitoring of sediments from receiving waters, including Dana Point Harbor.
- TMDL Monitoring includes monitoring for indicator bacteria according to the Baby Beach TMDL and the Twenty Beaches and Creeks TMDL.

Fact Sheets for each of the Program Elements are provided in **Exhibit 11.1.**

11.3 MONITORING STATIONS

Maps showing the monitoring stations, monitoring program element and watershed are provided in **Exhibit 11.2**.

11.4 MS4 OUTFALL MONITORING

A wet and dry weather outfall monitoring program has been developed in order to assess the effectiveness of individual Local Implementation Plans (LIP) toward effectively prohibiting non-storm water discharges into the MS4 and reducing pollutants in storm water discharges from their MS4s. It will also be used to answer a primary question: Do non-storm water or storm water discharges from the MS4 contribute to receiving water quality problems?

Pursuant to Permit Provision D.2.a.(1), *MS4 Outfall Discharge Monitoring Station Inventory*, the City and Copermittees developed an inventory of major outfalls that discharge directly to receiving waters. Table 11.1 summarizes the number of major outfalls by Copermittee to be monitored according to dry and wet weather protocols described in the following subsections. The number and location of outfalls monitored is subject to change on the basis of new information, updates to the Copermittees' MS4 outfall inventories, changes in transient or persistent flow classifications, and/or updates to WQIP.

Table 11.1: Summary of Copermittee's Major MS4 Outfalls

Copermittee	Total Major Outfalls	Dry Weather		Wet Weather Discharge Sampling[3]
		Field Screening[1]	Discharge Sampling[2]	
Aliso Viejo	30	24	7	1
Dana Point	36	29	2	1
Laguna Beach	35	28	2	1
Laguna Hills	9	7	-	-
Laguna Niguel	80	64	6	3
Laguna Woods	3	2	1	1
Lake Forest	29	23	5	1
Mission Viejo	51	41	6	1
Rancho Santa Margarita	21	17	5	1
San Clemente	47	38	6	1
San Juan Capistrano	53	42	5	1
Orange County	45	36	5	2
Total	439	351	50	14

Notes:
1 For Copermittees with less than 125 major MS4 outfalls in the SOC WMA, at least 80 percent of the outfalls must be visually inspected two times per year during dry weather conditions.
2 For Copermittees with less than 5 major outfalls in the SOC WMA, all its major outfalls with persistent flow must be sampled.
3 At least one MS4 outfall per Copermittee, which discharges within the SOC WMA, must be sampled during wet weather conditions.

11.4.1 Dry Weather MS4 Outfall Discharge Monitoring

The Copermittees will conduct dry weather MS4 outfall discharge monitoring throughout the South Orange County (SOC) Watershed Management Area (WMA) in order to:

- Identify non-storm water and illicit discharges to the MS4;
- Prioritize the dry weather MS4 discharges that will be investigated and eliminated pursuant to Permit Provision E.2.d; and
- Inform the prioritization of outfall retrofits and feasibility of planned outfall capture strategies associated with the unnatural water balance and flow regime HPWQC.

Dry weather outfall discharge monitoring will consist of field screening, and where persistent flows are identified, field screening will be followed by dry weather sampling.

Field Screening

The intent of outfall screening is to identify and eliminate sources of persistent non-storm water

discharges. Persistent flow is defined as the presence of flowing, pooled, or ponded water more than 72 hours after a measureable rainfall event of 0.1 inch or greater during three consecutive monitoring and/or inspection events. All other flowing, pooled, or ponded water is considered transient.

Pursuant to Permit Provision D.2.a.(2), field screening will be conducted at 80% of the major outfalls in the SOC WMA. Field screening will be performed two times per year during dry weather conditions with an antecedent dry period of at least 72 hours with less than 0.1 inch of rainfall. The observation parameters summarized in the Fact Sheets in **Exhibit 11.1** will be recorded for each outfall. Field observations will be used along with information available in prior reports, inspections, and monitoring to determine whether any observed flowing, pooled, or ponded waters are likely to be transient or persistent flow. Additionally, jurisdictional illicit connection and/or illicit discharge (IC/ID) programs will be implemented based on observations.

Non-Storm Water Persistent Flow MS4 Outfall Discharge Sampling

The primary purpose of dry weather MS4 outfall discharge sampling is to identify major outfalls with persistent dry weather flows that are impacting receiving water quality, so they may be prioritized and eliminated through targeted programmatic actions and source investigations. In order to accomplish this goal, the Copermittees will use field screening information, including an outfalls discharge status (i.e., persistent, transient, and no-flow), to prioritize major outfalls for sampling. The Copermittees within the SOC WMA will use the prioritization of outfalls for future retrofits to select the five highest priority outfalls for dry weather MS4 outfall discharge sampling.

Sampling will be performed semi-annually at the highest priority outfall monitoring stations. Sampling will include field observations consistent with the parameters presented in **Exhibit 11.1**. When measurable flow is present, field measurements will be recorded and grab or composite samples will be collected for the analyses presented in **Exhibit 11.1**.

In order to determine which persistent non-storm water discharges impact receiving water quality, dry weather MS4 outfall discharge sampling results will be compared to the applicable non-storm water action levels (NALs) included within Permit Provision C.1.a. The results of these comparisons will help to further assess the effectiveness of water quality improvement strategies, as well as inform the prioritization of outfalls for future actions/retrofits.

Dry weather MS4 outfall discharge sampling will be performed at the selected highest priority outfalls until one of the following occurs:

- Non-storm water discharges have been effectively eliminated for three consecutive dry weather monitoring events;
- The source(s) of the persistent flows have been identified as a category of non-storm water discharges that do not require a NPDES Permit and the associated constituents in the discharge do not exceed the NALs;

- Constituents in the persistent flow do not exceed NALs; or
- The source(s) of the persistent flows has been identified as a non-storm water discharge authorized by a separate NPDES Permit

If one of the aforementioned criteria is met or the threat to water quality has been reduced by the Copermittees, the major outfalls will be reprioritized and a new group of five highest priority outfalls will be selected for dry weather MS4 outfall discharge sampling. Highest priority outfall monitoring stations that have been removed from the inventory of outfalls will be replaced with the next highest prioritized outfall. Any removal or reprioritization of the highest priority outfalls will be documented within the WQIP Annual Report.

Additional details of this monitoring, including sampling locations and frequencies, can be found in **Exhibit 11.1**. The specific methods, protocols, and data quality objectives can be found within the *South Orange County Monitoring and Assessment Program Quality Assurance Program Plan*, which may change over time due to site-specific conditions and advances in methodology and technology. Sampling locations are also depicted in **Exhibit 11.2**.

11.4.2 Wet Weather MS4 Outfall Discharge Monitoring

The Copermittees will conduct wet weather MS4 outfall discharge monitoring through the SOC WMA in order to:

- Identify pollutants in storm water discharges from the MS4s
- Guide pollutant source identification efforts;
- Determine the effectiveness of water quality improvement strategies associated with the pathogen health risk HPWQC; and
- Determine compliance with the WQBELs associated with applicable TMDLs

Pursuant to Permit Provision D.2.c, 14 outfalls were selected for wet weather MS4 outfall discharge monitoring. These 14 outfalls represent storm water discharges for each Copermittee, as well as residential, commercial, industrial, and mixed-use land uses. **Exhibit 11.2** summarizes the location of the 14 outfall monitoring stations and **Exhibit 11.1** depicts their locations.

Wet weather MS4 outfall discharge monitoring will be performed during a minimum of one storm event, annually. Wet weather outfall discharge monitoring will consist of field observations, field monitoring, and collection of both grab and time-weighted composite samples. **Exhibit 11.1** summarizes the specific monitoring requirements at each outfall.

Wet weather MS4 outfall discharge sampling results will be compared to the applicable Stormwater Action Levels (SALs) included within Permit Provision C.2.a. The results of these comparisons will help to

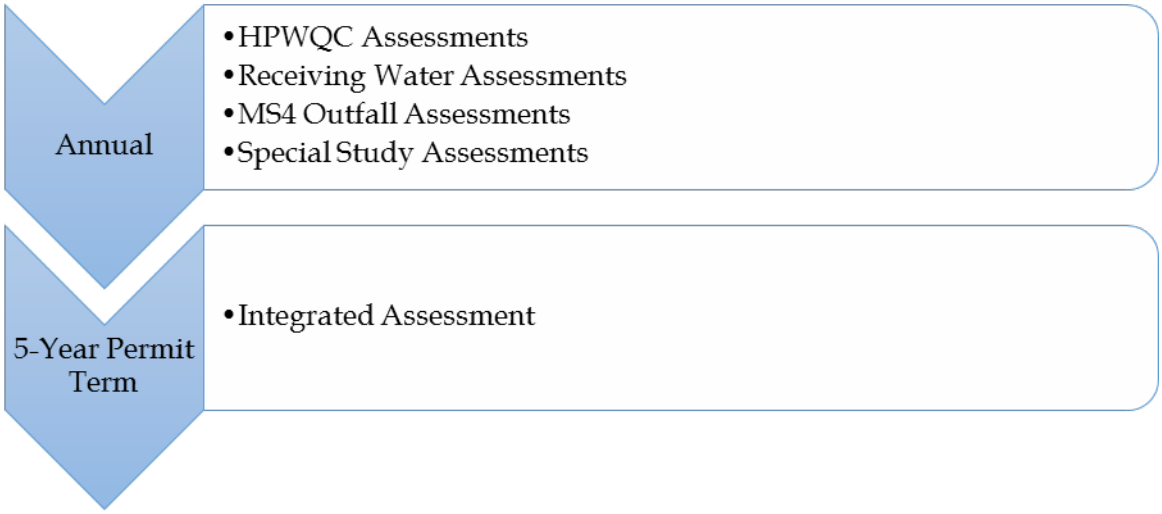
further assess the effectiveness of water quality improvement strategies, as well as inform the development and prioritization of water quality improvement strategies.

Additional details of this monitoring, including sampling locations and frequencies, can be found in **Exhibit 11.1.** The specific methods, protocols, and data quality objectives can be found within the *South Orange County Monitoring and Assessment Program Quality Assurance Program* Quality Assurance Project Plan (QAPP) for the South Orange County (San Juan Hydrologic Unit) Water Quality Improvement Plan (WQIP), which may change over time due to site-specific conditions and advances in methodology and technology. Sampling locations are depicted in **Exhibit 11.2.**

11.5 REPORTING AND ASSESSMENTS

The City and Copermittees will regularly assess its progress toward achieving the WQIP goals and schedules, including addressing the HPWQCs. This will be accomplished by evaluating monitoring data, as well as information collected by individual Copermittees via their JRMP. Five primary assessments and their associated timeframes are summarized in **Figure 11.1.**

Figure 11.1: Annual and 5-Year Permit Term Assessments



Based on the findings of the assessments summarized in **Figure 11.1**, the WQIP Monitoring and Assessment Program will be regularly updated. Updates are likely to close data gaps, refine monitoring methods, revise monitoring locations and frequency of sampling, and incorporate new or enhanced predictive tools. Ultimately, all Monitoring and Assessment Program updates will be determined based on opportunities for the City and Copermittees to better assess its progress toward achieving the WQIP goals and schedules. Although updates are anticipated, the Monitoring and Assessment Program will at a minimum adhere to Permit Provision D requirements.

High Priority Water Quality Condition Assessments

The City and Copermittees will annually assess and report within the WQIP Annual Report progress and effectiveness of strategies implemented to address HPWQCs. **Table 11.2** summarizes the specific assessments that will be performed for each HPWQC.

Table 11.2: Summary of HPWQC Assessments

Monitoring Programs		Assessment
HPWQC: Pathogen Health Risk	Human Waste Investigation	Determine if investigations successfully identified and abated pathogen sources.
	Structural BMP Performance Evaluation	Determine whether structural BMPs reduced the discharge of pathogens to receiving waters.
HPWQC: Channel Erosion/ Geomorphic Impacts	Stream Restoration Evaluation	Evaluate the geomorphic stability of restored stream reaches relative to baseline conditions.
		Evaluate whether IBI and CRAM scores improve relative to baseline conditions.
	LiDAR Aerial Survey	Determine whether there are significant changes to stream stability over time.
HPWQC: Unnatural Water Balance/Flow Regime	Expanded Outfall Observations	Evaluate the progress of expanded outfall observations relative to total number of major outfalls with persistent flow.
	Detailed Flow Monitoring	Evaluate the progress of detailed flow monitoring relative to the total number of priority outfalls.
	High-resolution Imagery	Determine whether there are significant changes to cover conditions (e.g., water, vegetation, soil, etc.) within stream reaches over time.

HPWQC assessments will also be supplemented by the receiving water, MS4 outfall, TMDL, and special study assessments described in this section.

Receiving Water Assessments

The Copermittees will annually assess and report within the WQIP Annual Report both the dry and wet weather conditions of the receiving waters (coastal waters, enclosed bays, harbors, estuaries, lagoons, and streams) in the SOC WMA. Receiving water assessments will include consolidating and processing physical, chemical, and biological data collected during the reporting period, and using this data to summarize the status and trends of receiving water quality conditions. Pursuant to Permit Provision D, the receiving water assessment will:

- Assess whether the conditions of the receiving waters are meeting the numeric goals established in the WQIP
- Identify the most critical beneficial uses that must be protected to ensure the overall health of the receiving water
- Evaluate whether those critical beneficial uses are being protected
- Identify short-term and/or long-term improvements or degradation of those critical beneficial uses
- Consider whether the strategies established in the WQIP (i.e., *Comprehensive Human Waste Source Reduction Strategy,* stream restoration, and elimination of dry weather flows) contribute toward progress in achieving the interim and final numeric goals of the WQIP
- Identify gaps in the monitoring data needed to assess the provisions above

These objectives will be partially accomplished by building upon efforts completed during development of the *2014 Report of Waste Discharge San Diego Region State of the Environment.* Specifically, the SOC Copermittees will continue to use a frequency-based index developed by the Canadian Council of Ministers of the Environment (CCME) to score (i.e., from 0 to 100) the frequency and magnitude of inland receiving water standard exceedances. These scores will be tracked and compared over time. This index, which is an effective means of communicating water quality results, accounts for the number of indicators within each category (i.e., bacteria, metals) that exceed standards for a given year, the percentage of individual samples that exceed standards, and the average magnitude of any such exceedances (CCME, 2001).

In addition to the CCME Index, the SOC Copermittees will combine the bioassessment data it collects within inland receiving waters to apply the CSCI. The CSCI translates complex data about individual benthic macroinvertebrates living in a stream into a measure of overall stream health. Also, the City of San Diego and Tetra Tech (in collaboration with the SDRWQCB and others) are currently developing novel causal assessment approaches and tools that could potentially be applied regionally to help streamline causal assessments in the future.

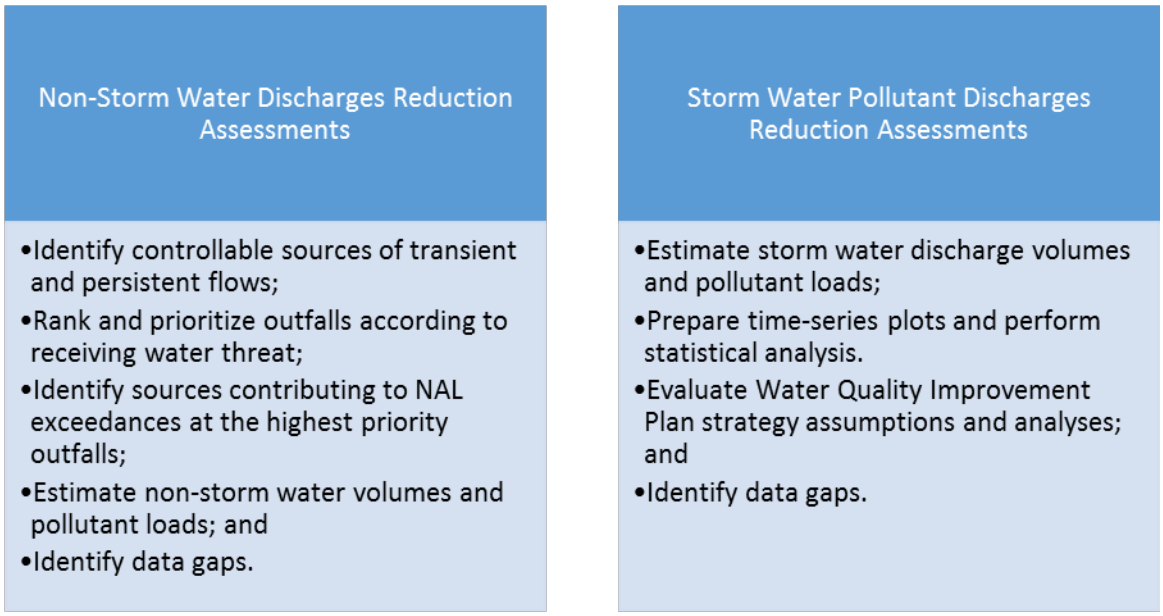
As part of the annual receiving water assessment, a Sediment Monitoring Report will be prepared, which includes an evaluation, interpretation, and tabulation of the water and sediment monitoring data, a sample location map, and a statement certifying that the monitoring data and results have been uploaded into the California Environmental Data Exchange Network.

MS4 Outfall Discharge Assessments

The City and Copermittees will annually assess the effectiveness of their LIPs toward effectively prohibiting non-storm water discharges into the MS4 and reducing pollutants in storm water discharges from the MS4s. The MS4 outfall discharge assessments will be based on both dry and wet weather monitoring data collected pursuant to Permit Provision D, as well as the results of individual jurisdictional illicit discharge detection and elimination programs implemented pursuant to Permit

Provision E.2. **Figure 11.2** depicts the primary components of both the *Non-Storm Water Discharges Reduction Assessments and the Storm Water Pollutant Discharges Reduction Assessments*.

Figure 11.2: Primary Components of the Annual Dry and Wet Weather MS4 Outfall Assessments



The following sections describe in more detail the primary components and approaches the City and Copermittees will use for accomplishing these two separate assessments.

Non-Storm Water Discharges Reduction Assessment

The City and Copermittees will complete Non-Storm Water Discharge Reduction Assessments using the results of dry weather *MS4 outfall discharge Field Screening* and *Non-storm Water Persistent Flow MS4 Outfall Discharge Sampling* summarized in the WQIP MAP 4.2.3 respectively. The following sections summarize the approach to completing the Non-storm Water Discharge Reduction Assessments.

Identify Controllable Sources of Transient and Persistent Flows

Using dry weather MS4 outfall discharge field screening data, information compiled from individual LIP Annual Reports, and data obtained via strategies associated with the unnatural water balance and flow regime HPWQC, the City and Copermittees will:

- Identify the known and suspected controllable sources (i.e., facilities, areas, land uses, and pollutant-generating activities) of transient and persistent flows within the SOC WMA;
- Identify sources of transient and persistent flows within the SOC WMA that have been reduced or eliminated; and

- Identify modifications of the field screening monitoring locations and frequencies for the MS4 outfalls in the Copermittees' inventory necessary to identify and eliminate sources of persistent flow non-storm water discharges.

The specific activities performed by individual LIPs that will assist with the aforementioned reporting, including facility inspections and response to storm water hotline calls and public complaints. The unnatural water balance and flow regime HPWQC strategies that will assist with this reporting include an inventory of permitted discharges and water impoundments.

Rank and Prioritize Outfalls According to Receiving Water Threat

The City and Copermittes will use dry weather MS4 outfall discharge monitoring data, including results of Numeric Action Level (NAL) comparisons, to refine the outfall prioritization strategy associated with the unnatural water balance and flow regime HPWQC. More specifically, major outfalls prioritized for additional actions/retrofit will be ranked according to potential threat to receiving water quality.

Identify Sources Contributing to Numeric Action Level (NAL) Exceedances at the Highest Priority Outfalls

The City and Copermittees will identify both known and suspected sources of discharge that may cause or contribute to NAL exceedances at the highest priority major MS4 outfalls within the SOC WMA. This reporting will be particularly important for those highest priority major outfalls where outfall control strategies associated with the unnatural water balance and flow regime HPWQC are deemed infeasible, thereby, triggering optional strategies associated with the unnatural water balance and flow regime HPWQC, including source investigations.

Estimate Non-Storm Water Volumes and Pollutant Loads

The City and Copermittees will use data from *Non-storm Water Persistent Flow MS4 Outfall Discharge Sampling* to estimate the non-storm water volumes and pollutant loads collectively discharged from all the major MS4s outfalls in its jurisdiction that have persistent dry weather flows during the monitoring year. These estimated volumes and pollutant loads will be derived by calculation or a model, and will include:

- The annual non-storm water volumes and pollutant loads collectively discharged from major MS4 outfalls to receiving waters within the SOC WMA, with an estimate of the percent contribution from each known source for each MS4 outfall; and
- The annual volumes and pollutant loads for sources of non-storm water not subject to the legal authority of LIPs that are discharged from the City and Copermittees' major outfalls to downstream receiving waters.

Storm Water Pollutant Discharges Reduction Assessments

The City and Copermittees will complete Storm Water Pollutant Discharge Reduction Assessments using the results of *Wet Weather MS4 Outfall Discharge Monitoring* data. The following sections summarize the approach to completing the Storm Water Pollutant Discharge Reduction Assessments.

Estimate Storm Water Discharge Volumes and Pollutant Loads

The Copermittees will analyze data from *Wet Weather MS4 Outfall Discharge Monitoring* and use a watershed model or other method to calculate or estimate the following:

- The average storm water runoff coefficient for each land use type within the SOC WMA;
- The volume of storm water and pollutant loads discharged from each of the monitored MS4 outfalls for each storm event with measurable rainfall greater than 0.1 inch;
- The total flow volume and pollutant loadings discharged from each individual Copermittees' jurisdiction within the SOC WMA over the course of the wet season, extrapolated from the data produced from the monitored MS4 outfalls; and
- The percent contribution of storm water volumes and pollutant loads discharged from each land use type within each hydrologic subarea with a major MS4 outfall to receiving waters or for each major MS4 outfall to receiving waters, within the SOC WMA for each storm event with measurable rainfall greater than 0.1 inch.

Prepare Time-Series Plots and Perform Statistical Analysis

The Copermittees will evaluate all the data collected as part of the *Wet Weather MS4 Outfall Discharge Monitoring* activities, including an update of existing time-series plots with new data for each long-term monitoring constituent. Parametric and non-parametric statistical methods will be applied accordingly.

Evaluate Water Quality Improvement Plan Strategy Assumptions and Analyses

The Copermittees will revisit WQIP strategy assumptions and analyses based upon *Wet Weather MS4 Outfall Discharge Monitoring* results and a comparison of the results to SALs. Where new data conflicts with prior assumptions, the Copermittees will reevaluate and update the analyses associated with WQIP strategies and adjust the strategies accordingly. Adjustments to WQIP strategy will be captured within future WQIP updates.

Identify Data Gaps

The City and Copermittees will determine whether or not data gaps must be filled in order to effectively complete the aforementioned annual *Non-Storm Water Discharges Reduction Assessments.* If data gaps are identified, the City and Copermittees will update the WQIP MAP accordingly.

Total Maximum Daily Load (TMDL) Assessments

Annually, the City and Copermittees will analyze both dry and wet weather monitoring data it collects in order to continue assessing whether the interim and final Water Quality Based Effluent Limits (WQBEL), defined within Attachment E of the Permit, are being achieved. The following sections describe the specific assessment approaches that will be used for the Baby Beach TMDL and the Twenty Beaches and Creeks TMDL. The specified assessment approaches are likely to change in the future based upon anticipated updates to the 2014 Region 9 basin plan amendment effort for revising the recreational water quality standards and adaptive management.

Baby Beach TMDL

Due to the close proximity of Baby Beach monitoring sites, monitoring data from all four sites (BDP12, BDP13, BDP14, and BDP15) will be aggregated to determine compliance with the receiving water limitations expressed as bacteria densities. 30-day geometric means will be calculated when there are at least five samples collected within any running 30-day period. Dry and wet weather exceedance frequencies will be calculated by comparing dry weather 30-day geometric means and single-sample maximum results, and wet weather single-sample maximum results to applicable WQBELs, respectively. Effort will be made to correlate any elevated bacteria levels with known or suspected sewage spills from wastewater collection systems and treatment plants or boats.

Twenty Beaches and Creeks TMDL

The primary method responsible Copermittees will use to determine compliance with the interim and final WQBELs the beach and creek/creek mouth segments and areas, as defined within Attachment E of the Permit, will be calculating dry and wet weather exceedance frequencies relative to receiving water limitations expressed as bacteria densities. The following is a summary of the specific exceedance frequency calculations that will be used by the responsible Copermittees:

- Dry weather exceedance frequencies:
  - For each *Water Body* or *Segment or Area* identified within Attachment E of the Permit, 30-day geometric means will be calculated when there are at least five samples collected within any running 30-day period.
  - The *dry weather 30-day geometric mean exceedance frequency* will be calculated by dividing the number of geometric means that exceed the geometric mean receiving water limitations in Attachment E of the Permit, by the total number of geometric means calculated from samples collected during the dry season.
- Wet weather exceedance frequencies:
  - The *single sample maximum exceedance frequency* will be calculated by dividing the number of wet weather days that exceed the single sample maximum receiving water limitations defined in Attachment E of the Permit, by the total number of wet weather days during the rainy seasons.

- The *wet weather 30-day geometric mean exceedance frequency* will be calculated by dividing the number of geometric means that exceed the geometric mean receiving water limitations in Attachment E of the Permit, by the total number of geometric means calculated from samples collected during the wet season. The data collected for dry weather will be used in addition to the data collected for wet weather to calculate the wet weather 30-day geometric means.
- If only one sample is collected for a storm event, the bacteria density for every wet weather day associated with that storm event will be assumed to be equal to the results from the one sample collected.
- If more than one sample is collected for a storm event, but not on a daily basis, the bacteria density for all wet weather days of the storm event not sampled will be assumed to be equal to the highest bacteria density result reported from the samples collected.
- If there are any storm events not sampled, the bacteria density for every wet weather day of those storm events will be assumed to be equal to the average of the highest bacteria densities reported from each storm event sampled.

The responsible Copermittees may also determine compliance by comparing wet and dry weather MS4 outfall discharge results to the concentration based effluent limitations specified in Attachment E of the Permit. If this is done, the responsible Copermittees will calculate both dry and wet weather discharge bacteria densities using flow-weighted averages for all major MS4 outfalls associated with an applicable water body segment or within a jurisdiction. These bacteria densities will be calculated for outfalls where samples are collected within a similar time period.

Integrated Assessments

The WQIP will be updated iteratively so it is more effective toward achieving compliance with discharge prohibitions and receiving water limitations specified in the Permit. To guide this iterative approach, the Copermittees will complete an integrated assessment at the time of preparing the Report of Waste Discharge (at the end of the Permit term), which will compile and distill monitoring data and information collected during the implementation of individual JRMPs. The results of the integrated assessments will be critical to the Copermittees' ability to effectively identify WQIP updates, including update or refinement of priority water quality conditions and adaptation of associated water quality improvement strategies, goals, and schedules.

Integrated assessments will use the findings of receiving water, MS4 outfall discharge, and special study assessments described in the WQIP Section 4.2.6, Integrated Assessments, as well as the assessments completed as part of the TMP, to re-evaluate the primary components of the WQIP. Specifically, the Copermittees will:

- Re-evaluate SOC WMA Priority Water Quality Conditions according to the methodology presented in the B.2 Chapter*;*

- Evaluate progress towards achieving WQIP goals and schedules, including chosen compliance pathways, presented in the B.3 Chapter; and
- Evaluate the effectiveness of WQIP strategies presented in the B.3 Chapter.

Figure 11.3 presents in more detail the individual components and associated methodology of the integrated assessment described above. Water quality improvement strategies will also be evaluated in the WQIP Annual Reports based on available monitoring and JRMP data.

Figure 11.3: Summary of Integrated Assessment

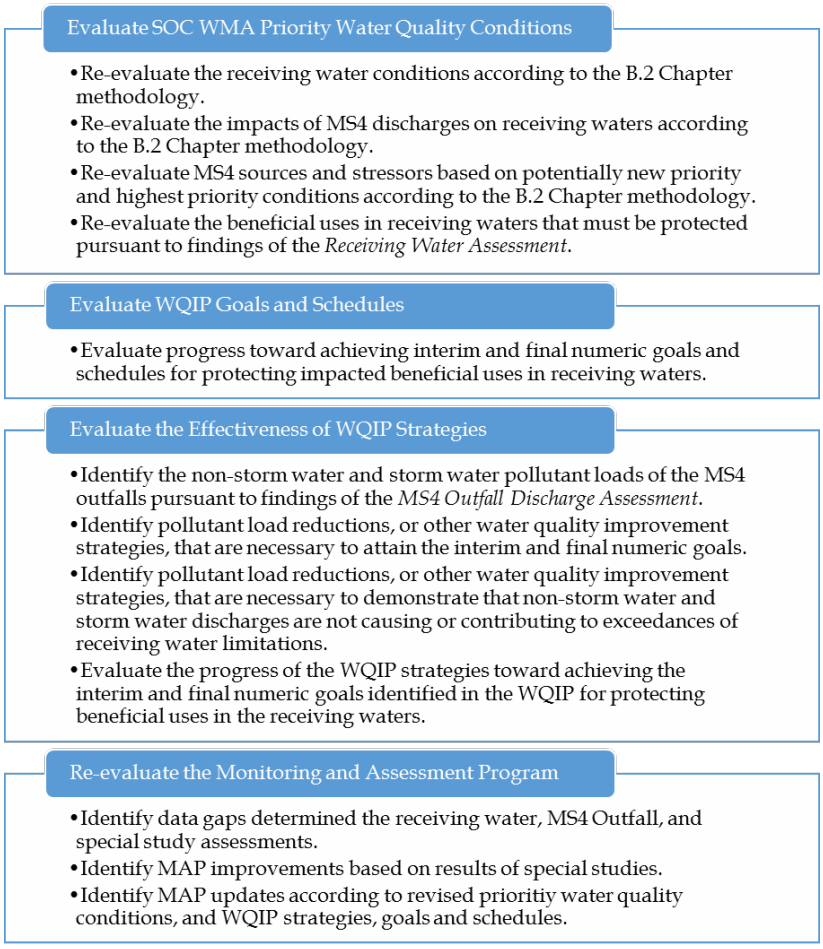


Exhibit 2.1

WATER QUALITY ORDINANCE IMPLEMENTATION AGREEMENT WITH THE CITY OF Dana Point

THIS AGREEMENT, hereinafter referred to as "AGREEMENT" and for purposes of identification numbered D07-079, is made and entered into this 17 th day of October, 2007, by and between the City of Dana Point, a municipal corporation, hereinafter designated as "CITY" and the Orange County Flood Control District, a body corporate and politic, hereinafter referred to as "DISTRICT". These entities are hereinafter sometimes jointly referred to as "PARTIES" and individually as "PARTY".

W I T N E S S E T H

WHEREAS, pursuant to 33 United States Code Section 1251 et seq., as amended the PARTIES are subject to a municipal National Pollutant Discharge Elimination System (NPDES) Stormwater Permit and 40 CFR 122.26 (d)(2)(i)(A-F), which requires each to control various potential pollutant sources into the municipal storm drain system through enforcement of an adequate system of local legal authority; and

WHEREAS, on December 18, 1990 the County entered into the National Pollutant Discharge Elimination System Stormwater Permit Implementation Agreement (hereinafter referred to as "IMPLEMENTATION AGREEMENT") with CITY and other parties. This IMPLEMENTATION AGREEMENT was subsequently amended on October 26, 1993; and

WHEREAS, the IMPLEMENTATION AGREEMENT specifies that the CITY is principally responsible for implementing the National Pollutant Discharge Elimination System Permit within its jurisdictional boundaries; and

WHEREAS, the IMPLEMENTATION AGREEMENT contains provisions allowing CITY to name DISTRICT as "enforcer of a water pollution control ordinance"; and

WHEREAS, CITY has adopted a water quality ordinance (hereinafter referred to as "CITY ORDINANCE") that provides in Section 15.10.090 that the CITY may "contract for services of any public agency or private enterprise to carry out the planning approvals, inspections, permits and enforcement authorized by this Ordinance"; and

WHEREAS, said CITY ORDINANCE defines "AUTHORIZED INSPECTOR" as persons designated to investigate compliance and detect violations of the CITY ORDINANCE; and

WHEREAS, said CITY ORDINANCE contains provisions to control pollutants from both existing and new urban development and significant redevelopment; and

WHEREAS, Section 9-1-90 (c) of those Codified Ordinances of the DISTRICT relating to Storm Water Management and Urban Runoff provides that "the DISTRICT may, upon designation by any city within COUNTY , and at no cost to DISTRICT, be named as an AUTHORIZED INSPECTOR for that city"; and

WHEREAS, similar agreements have been previously executed in the past five years. Commencing in 2002, 29 cities have executed the WATER QUALITY ORDINANCE IMPLEMENTATION AGREEMENT. Subsequently, after the initial three year term, these agreements were extended for additional 3 years by AMENDMENT NO. ONE to the original agreements. The terms of these agreements and their related amendment will be expiring; and

WHEREAS, in furtherance of said program implementation, CITY now wishes to contract with DISTRICT to serve as AUTHORIZED INSPECTOR pursuant to the CITY ORDINANCE, and to pay DISTRICT for the full cost of providing those services; and

WHEREAS, DISTRICT is willing to provide such services to the extent allowed by available staffing resources (See Section 1(g)and 2(a))and to accept payment from CITY for the full cost of providing those services.

NOW, THEREFORE, the PARTIES hereto, in consideration of the mutual covenants and agreements contained in this AGREEMENT, agree as follows:

SECTION 1. DISTRICT RESPONSIBILITIES

Upon request from designated CITY representatives, DISTRICT, upon availability of staffing resources, is authorized to:

(a) Act as AUTHORIZED INSPECTOR on behalf of CITY and shall investigate compliance with, detect violations of, and/or take actions pursuant to the CITY ORDINANCE, generally including activities such as water pollution incident response, clean-up and/or enforcement activities associated with the following:

(i) In response to specific pollutant releases originating from within CITY limits;

(ii) In response to specific pollutant releases originating from within CITY limits that are detected in DISTRICT facilities; and

(iii) In response to adverse findings of water quality monitoring that are attributable to specific pollutants originating within CITY limits.

(b) Perform services in Section (a) of this AGREEMENT as set forth in the CITY ORDINANCE and its accompanying Enforcement Consistency Guide;

(i) Notify designated CITY National Pollutant Discharge Elimination System Permit representative of request for water pollution incident response, clean-up and/or enforcement activities received from designated CITY representatives and Departments;

(ii) Prepare annual list of investigations conducted on CITY's behalf for CITY to submit in the Annual Program Effectiveness Assessment Report to the Regional Water Quality Control Board(s);

(c) Upon written request by the CITY;

(i) Provide to CITY all incident reports and related documents prepared in connection with DISTRICT'S performance under this AGREEMENT and make such records available for inspection by authorized representatives of CITY during normal business hours;

(ii) Utilize services of outside consultants and contractors to aid in the investigation, cleanup and/or enforcement activities undertaken pursuant to this AGREEMENT. If this is required, DISTRICT shall utilize consultants and contractors hired by the CITY under the CITY'S standing purchase order agreements;

(d) Invoice CITY within forty-five (45) days of the signing of this AGREEMENT by the DISTRICT Director for the initial annual pollution response on-call fee identified in Exhibit A, prorated for the balance of the fiscal year ending June 30th from the date of AGREEMENT signing. For subsequent billing years, by June 30th of each year DISTRICT shall review and revise Exhibit A as necessary based on

the then current on-call labor rates, the number of cities contracting with DISTRICT for water quality ordinance services and the latest land area and population data as specified in the IMPLEMENTATION AGREEMENT. Thereafter, DISTRICT shall invoice CITY within 60 days of the beginning of each fiscal year (July 1) based on the revised Exhibit A.

(e) Invoice CITY on a monthly basis for all work performed by DISTRICT under this AGREEMENT on behalf of CITY. DISTRICT will not invoice any "PERSON", as defined in CITY ORDINANCE, identified as causing or contributing to a violation of said ORDINANCE. Invoice from DISTRICT to CITY shall include actual costs incurred by DISTRICT for labor, equipment and services. Said actual costs include overhead (indirect costs such as tools, computers, etc.) and burden (employee benefits).

(f) DISTRICT shall indemnify, defend with counsel approved by CITY, and hold CITY, its elected and appointed officials, officers, agents, employees and contractors free and harmless from any claim, cause of action, or liability whatsoever, based or asserted upon any act or omission of DISTRICT, its elected and appointed officials, officers, agents, employees and contractors, for property damage, bodily injury or death or any other element of damage of any kind or nature, relating to or in any way connected with or arising from the accomplishment of the services to be performed by DISTRICT under this AGREEMENT, except as provided for in Sections 2 (h) and 2 (i) below.

(g) Nothing in this AGREEMENT shall be interpreted as an assumption by DISTRICT of any obligations the CITY may have under law or applicable permits to implement a municipal NPDES stormwater program. This AGREEMENT is solely for the purpose of authorizing DISTRICT personnel to act as AUTHORIZED INSPECTOR for the CITY. This AGREEMENT creates no obligation to provide those services. AUTHORIZED INSPECTOR services will be provided only to the extent permitted by DISTRICT resources.

SECTION 2. CITY RESPONSIBILITIES:

CITY shall:

(a) Identify, in writing, the designated CITY National Pollutant Discharge Elimination System (NPDES) Permit and Authorized Inspector representatives that will be responsible for water pollution incident response, clean-up and/or enforcement activities when DISTRICT involvement is not requested, approved or available. The designations shall include representative names, titles, departments and business/after hours phone numbers;

(b) Designate in writing those CITY representatives authorized to submit service requests to DISTRICT on behalf of CITY. Any request from Orange County Fire Authority/CITY Fire Department and Orange County Sheriffs Department/CITY Police Department shall represent CITY approval. The designations shall include representative names, titles, departments and business/after hours phone numbers;

(c) Meet periodically with DISTRICT to discuss the services being provided, review individual cases, and ensure DISTRICT enforcement activities are consistent with CITY ORDINANCE and accompanying Enforcement Consistency Guide;

(d) Provide in writing any requests for incident reports or related documents prepared in connection with DISTRICT'S performance under this AGREEMENT (Section 1 (c) i));

(e) Provide information in writing regarding any standing purchase order agreements issued by CITY for employment by DISTRICT of outside consultants and contractors (Section 1 (c) ii)). Information provided should include contractor/consultant contact information, purchase order number and services provided;

(f) Make payment to DISTRICT within thirty (30) days of receipt of annual pollution response on-call fee as identified in Exhibit A or monthly invoice from DISTRICT for work performed in accordance with this AGREEMENT and invoice any "PERSON", as identified in CITY ORDINANCE, identified as being responsible for violations of the water quality ordinance;

(g) Assume any and all liability for failure to approve needed work and expenditures to respond to pollutant releases;

(h) CITY shall indemnify, defend with counsel approved by DISTRICT, and hold DISTRICT, its elected and appointed officials, officers, agents, employees and contractors, free and harmless from any claim, cause of action or liability whatsoever, based or asserted upon any act or omission of CITY, its elected and appointed officials, officers, agents, employees and contractors for property damage, bodily injury or death or any other element of damage of any kind or nature, specifically relating to or in any way connected with or arising from the extent and/or adequacy of investigation, or clean-up of pollutants on behalf of CITY, performed by, on behalf of, or under the supervision of DISTRICT personnel, acting in good faith and with due diligence in fulfillment of DISTRICT's responsibilities pursuant to this AGREEMENT; and

(i) Where CITY staff is providing pollution response duties hereinunder, CITY shall indemnify, defend with counsel approved by DISTRICT, and hold DISTRICT, its elected and appointed officials, officers, agents, employees and contractors free and harmless from any claim, cause of action, or liability whatsoever, based or asserted upon any act of CITY, its elected and appointed officials, officers, agents, employees and contractors, for property damage, bodily injury or death or any other element of damage of any kind or nature, relating to or in any way connected with or arising from the accomplishment of services performed by CITY in implementing or enforcing CITY ORDINANCE to which DISTRICT was not a party of.

SECTION 3. GENERAL PROVISIONS

(a) The initial term for this AGREEMENT is for a period of one (1) year commencing with the date of the execution of this AGREEMENT (Initial Term). The term of this AGREEMENT will automatically extend for an additional year at the end of the Initial Term of this AGREEMENT and each year thereafter unless either party provides a written notice to other party no less than 6 months before the expiration of the term of the AGREEMENT of its intent not to renew. Nothing in this clause is to be interpreted, however, to limit the rights of the party to

terminate the AGREEMENT pursuant to the provisions of the Termination Clause(Section 3 (b));

(b) Either party may terminate this AGREEMENT in advance of the termination date, upon six (6) months written notice to the other party sent to the following addresses:

DISTRICT:
Orange County Flood Control District
Attn: Director, Resources and Development Management Department
Post Office Box 4048
Santa Ana, California 92702-4048

CITY:
City of Dana Point
Attn: City Manager
33282 Golden Lantern
Dana Point, California 92629

Upon termination by either PARTY, DISTRICT shall inform the CITY of any ongoing investigations prior to the termination date and return the prorated share of any remaining annual pollution response on-call fees within forty-five (45) days after the termination date for the fiscal year in which the termination occurs. Upon termination it will be the responsibility of the CITY to complete any water pollution incident response, clean-up and/or enforcement activities associated with any ongoing investigations.

(c) PARTIES agree to fully cooperate with and assist one another in all matters pertaining to losses arising from costs not reimbursed by any "PERSON", as identified in CITY ORDINANCE, in performance of this AGREEMENT. If a claim is made, or suit is brought against a PARTY to this AGREEMENT likely to be related to the performance thereof, said PARTY shall immediately forward every claim,

demand, notice, summons or other process received by it to the other PARTY hereto.

(d) If any part of this AGREEMENT is held, determined or adjudicated to be illegal, void or unenforceable by a court of competent jurisdiction, the remainder of this AGREEMENT shall be given effect to the fullest extent reasonably possible.

(e) No alteration or variation of the terms of this AGREEMENT shall be valid unless made in writing and signed by the PARTIES hereto, and no oral understanding or agreement not incorporated shall be binding on any of the PARTIES hereto.

(f) The PARTIES to this AGREEMENT represent and warrant that this AGREEMENT has been duly authorized and executed and constitutes the legally binding obligation of their respective organization or entity, enforceable in accordance with its terms.

IN WITNESS WHEREOF, the parties hereto have executed this AGREEMENT on the dates opposite their respective signatures:

ORANGE COUNTY FLOOD CONTROL DISTRICT,
a body corporate and politic,

Date: 10-15-07

By: _____
Director,
Resources & Development Management Department

APPROVED AS TO FORM
COUNTY COUNSEL

Date: 8/31/2007

By: _____
Deputy

CITY OF Dana Point

Date: 10/2/07

By: _____
City Manager

APPROVED AS TO FORM:

_____
City Clerk

_____
City Attorney of Dana Point

Exhibit A
Water Quality Ordinance Implementation Agreement
Pollution Response Annual Fixed Cost Fee
FY 2007-2008****

Permittee	Population *	Area (sq. mi.) **	Weighted Average Share of Revenue (%)	Annual Fee*** FY 2007-2008
Aliso Viejo	44,924	6.92	1.113503219	$547
Anaheim	342,410	49.89	8.299142308	$4,076
Brea	39,560	11.98	1.368194047	$672
Buena Park	81,349	10.55	1.885897552	$926
Costa Mesa	113,134	15.83	2.699014928	$1,326
Cypress	48,854	6.60	1.149972662	$565
Dana Point	36,669	6.43	0.960363539	$472
Fountain Valley	57,405	9.05	1.436523973	$706
Fullerton	136,428	22.32	3.467492139	$1,703
Garden Grove	171,765	17.92	3.695132965	$1,815
Huntington Beach	201,000	26.64	4.697457385	$2,307
Irvine	193,785	65.98	7.182586244	$3,528
La Habra	61,789	7.36	1.389418324	$682
La Palma	16,081	1.80	0.353999756	$174
Laguna Beach	24,963	8.83	0.947017648	$465
Laguna Hills	33,225	6.64	0.923765991	$454
Laguna Niguel	66,178	14.79	1.942991759	$954
Laguna Woods	18,334	3.04	0.468649664	$230
Lake Forest	78,859	16.78	2.259721101	$1,110
Los Alamitos	12,004	2.01	0.308133779	$151
Mission Viejo	97,997	17.93	2.615675324	$1,285
Newport Beach	83,361	24.64	2.84326713	$1,396
Orange	137,801	25.78	3.71545714	$1,825
Placentia	51,236	6.62	1.186167191	$583
Rancho Santa Margarita	49,130	12.94	1.571540326	$772
San Clemente	66,280	17.68	2.134808822	$1,049
San Juan Capistrano	36,073	13.26	1.401432712	$688
Santa Ana	351,322	27.35	6.945240284	$3,411
Seal Beach	25,298	4.02	0.635155827	$312
Stanton	38,761	3.09	0.771036018	$379
Tustin	71,767	11.14	1.784452225	$876
Villa Park	6,218	2.08	0.228024677	$112
Westminster	92,408	10.05	2.014896247	$990
Yorba Linda	66,794	19.82	2.283266487	$1,121
County of Orange	120,174	175.55	13.32060061	$6,543
OCFCD	0	0.00	10	$4,912
TOTALS	**3,073,336**	**683.310**	**100.00000**	**$49,116**

* Source: State of California, Department of Finance, E-1 City/County Population Estimates with Annual Percent Change January 1, 2005 and 2006, Sacramento, California May 2006. Available at: http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Estimates/E1/documents/E-1table.xls

** Source: RDMD - Geomatics. Area was calculated in miles using the dry land area figures and subtracting areas in each jurisdiction for national forests, state parks, airports, landfills and military installations as determined in the NPDES Implementation Agreement.

*** Annual Fee: is the District's on-call annual cost which is based the prior year's actual annual on-call staff pay divided by Permittee share based on NPDES Implementation Agreement cost share irrespective of the number of participating cities.

**** The District shall review and revise Exhibit A as necessary on June 30th of each year the based on the current on-call labor rates, the number of cities contracting with the DISTRICT for water quality ordinance services and the latest land area and population data (see Agreement Section 1(d)).

Exhibit 2.2

Agreement No. D09-043

AGREEMENT TO FUND WATER QUALITY MONITORING, REPORTING, RESEARCH, PLANNING, AND COMPLIANCE ACTIVITIES IN THE SAN JUAN CREEK WATERSHED

THIS AGREEMENT, for purposes of identification numbered D09-043, is made and entered into this 14th day of SEPT., 2010, by and between the County of Orange (herein called COUNTY), the Orange County Flood Control District (herein called DISTRICT), and the cities of Dana Point, Laguna Hills, Laguna Niguel, Mission Viejo, Rancho Santa Margarita and San Juan Capistrano (herein called WATERSHED CITY or collectively WATERSHED CITIES). The COUNTY, DISTRICT, and WATERSHED CITIES may be referred to collectively as WATERSHED PERMITTEES or individually as WATERSHED PERMITTEE in this AGREEMENT.

WITNESSETH

WHEREAS, The federal Clean Water Act (CWA) section 303(d) requires States to assess the quality of their waters every two years and publish a list of those waters not meeting water quality standards (herein called 303(d) LIST); and

WHEREAS, States must prioritize the water bodies on the 303(d)LIST for development of Total Maximum Daily Loads (herein TMDLs) to improve water quality; and

WHEREAS, the lower one mile and mouth of San Juan Creek has been listed as impaired for indicator bacteria since the 2002 303(d) LIST; and

WHEREAS, the Regional Water Quality Control Board - San Diego Region(RWQCB-SDR) adopted TMDLs for Indicator Bacteria Project I - Beaches and Creeks in the San Diego Region (herein called BEACHES AND CREEKS TMDL) on February 10, 2010, which will become final upon subsequent approval by the State Water Resources Control Board, the Office of Administrative Law and the United States Environmental Protection Agency ; and

WHEREAS, pursuant to the BEACHES AND CREEKS TMDL, the WATERSHED PERMITTEES will be required to submit a Bacteria Load Reduction Plan or a Comprehensive Load Reduction Plan (herein called REDUCTION PLAN); and

WHEREAS, the WATERSHED PERMITTEES may identify other constituents of concern through ongoing monitoring programs that require cooperative action through this AGREEMENT; and

WHEREAS, the WATERSHED PERMITTEES intend to equitably share the cost of performing water quality monitoring, reporting, research, planning, and compliance activities, including the development and implementation of the REDUCTION PLAN in the San Juan Creek watershed; and

WHEREAS the WATERSHED PERMITTEES have reached agreement on a funding formula shown in Exhibit A, which is based on watershed land area and population applied to the formula in Agreement No. D02-048 - the Amendment and Reinstatement of the National Pollutant Discharge Elimination System Stormwater Implementation Agreement dated June 25, 2002.

NOW, THEREFORE, in consideration of the foregoing, the WATERSHED PERMITTEES agree as follows:

Section 1. PURPOSE. This AGREEMENT is entered into for the purpose of funding and performing water quality monitoring, reporting, research, planning, and compliance activities including development and implementation of the REDUCTION PLAN, in the San Juan Creek watershed.

Section 2. TERM. The term of this AGREEMENT shall commence upon approval and execution of this AGREEMENT by all WATERSHED PERMITTEES and shall continue until June 30 of the year following commencement of the term of the AGREEMENT. The AGREEMENT shall automatically renew each subsequent year for an annual term running July 1 to June 30 unless notice of termination is given in accordance with section 8. If a WATERSHED PERMITTEE terminates their participation in this AGREEMENT, the AGREEMENT remains in effect for all other WATERSHED PERMITTEES until such remaining WATERSHED PERMITTEE(S) give notice of termination.

Section 3. FUNDING. Exhibit A, which is attached and by this reference is made a part hereof, presents the cost share allocations for the WATERSHED PERMITTEES. The individual cost shares for the WATERSHED PERMITTEES will be revised once every year pursuant to the formula provided in Exhibit A, based on changes in watershed land area and population. The percentage share shall be calculated by the COUNTY, OC Public Works/OC Watersheds Program based on population, land area and watershed area data. These calculations shall be completed by January 15 of each year and shall be included in the annual budget proposal.

Section 4. PROGRAM BUDGET AND COSTS. The program budget for Fiscal Year 2010-11 is one hundred ninety-eight thousand three hundred eighty-nine dollars ($198,389) allocated among the WATERSHED PERMITEES as shown in Exhibit B, which is attached hereto and made a part hereof. In subsequent fiscal years, the COUNTY shall submit a scope of work and a budget for the following fiscal year to each of the WATERSHED PERMITTEES by February 15 of each year, commencing in 2011. The budget shall contain an estimate of all planned expenditures and an estimate of the payment required from each WATERSHED PERMITTEE for the following fiscal year.

The WATERSHED PERMITTEES shall be permitted to review, comment on and approve the program scope of work and budget for the forthcoming year. Criteria for approval shall be affirmative written responses from a majority of the WATERSHED PERMITTEES. The COUNTY and DISTRICT will constitute one approving party.

The COUNTY shall be entitled to charge to the program all costs for direct labor, materials, equipment and outside contract services for costs associated with carrying out the approved scope of work. Recoverable costs will also include an overhead charge calculated by the County Auditor-Controller which includes OC Public Works overhead, OC Watersheds Program overhead and County-wide cost allocation plan.

Section 5. PAYMENTS. Within 30 calendar days of the effective date of this AGREEMENT, the COUNTY shall send the WATERSHED PERMITTEES an invoice for a deposit

which constitutes their share of the budgeted costs for fiscal year 2010-11 as identified in Exhibit B. Each of the WATERSHED PERMITTEES shall pay the deposit within 45 calendar days of their respective receipt of the invoice.

The COUNTY shall prepare a fiscal year end accounting within 60 calendar days of the end of the fiscal year. If the fiscal year end accounting results in costs (net of interest earnings) exceeding the sum of the deposits, the COUNTY shall seek approval of the excess cost from the WATERSHED PERMITTEES and, if approved, shall invoice each WATERSHED PERMITTEE for its prorated share of the excess cost up to the amount of the revised approved budget. Each WATERSHED PERMITTEE shall pay the billing within 45 calendar days of the date of the invoice. If the fiscal year end accounting results in the sum of the deposits exceeding costs (net of interest earnings), the excess deposits will carry forward to reduce the billings for the following year.

After the initial billing for the program, the COUNTY shall invoice each WATERSHED PERMITTEE for its annual deposit at the beginning (July 1) of each fiscal year following approval of the Program Budget. Each WATERSHED PERMITTEE shall pay the deposit within 45 calendar days of the date of the invoice. Each WATERSHED PERMITTEE'S deposit shall be based on its prorated share of the approved annual budget, reduced by its prorated share of any surplus identified in the prior fiscal year end accounting.

Interest earned on the WATERSHED PERMITTEES' deposits will not be paid to the WATERSHED PERMITTEES, but will be credited against the WATERSHED PERMITTEES' share of the program costs.

Upon termination of the AGREEMENT, a final accounting shall be performed by the COUNTY. If previously approved costs remaining after the deduction of interest earnings exceed the sum of the deposits, the COUNTY shall invoice each WATERSHED PERMITTEE for its prorated share of the deficit. Each WATERSHED PERMITTEE shall pay the invoice within 45 calendar days of the date of the invoice. If the sum of the

deposits, including interest earnings, exceeds the costs, the COUNTY shall reimburse to each WATERSHED PERMITTEE its prorated share of the excess, within 45 calendar days of the final accounting.

Section 6. AMENDMENT. This AGREEMENT may be amended in writing only with the unanimous written approval of the WATERSHED PERMITTEES.

Section 7. LIABILITY. It is mutually understood and agreed that, merely by the virtue of entering into this AGREEMENT, each WATERSHED PERMITTEE neither relinquishes any rights nor assumes any liabilities for its own actions or the actions of other WATERSHED PERMITTEES. It is the intent of the WATERSHED PERMITTEES that the rights and liabilities of each WATERSHED PERMITTEE shall remain the same, while this AGREEMENT is in force, as it was before this AGREEMENT was made, except as otherwise specifically provided in this AGREEMENT.

Section 8. TERMINATION. Any WATERSHED PERMITTEE wishing to terminate its participation in this AGREEMENT shall so notify all other WATERSHED PERMITTEES in writing by March 1 of any year. Such termination shall be effective the following June 30. The terminating WATERSHED PERMITTEE shall be responsible for financial obligations hereunder to the extent incurred in accordance with this AGREEMENT by the WATERSHED PERMITTEE prior to the effective date of termination. The remaining balance of the WATERSHED PERMITTEES may continue in the performance of the terms and conditions of this AGREEMENT on the basis of a revised allocation of cost based on the funding formula in Exhibit A. Termination of participation in this AGREEMENT does not release any WATERSHED PERMITTEE from its regulatory obligations under the BEACHES AND CREEKS TMDL, or REDUCTION PLAN or other subsequently approved regulatory order or directive.

Section 9. AVAILABILITY OF FUNDS. The obligation of each WATERSHED PERMITTEE is subject to the availability of funds appropriated for this purpose, and nothing herein shall be construed as obligating the WATERSHED PERMITTEES to expend or as

involving the WATERSHED PERMITTEES in any contract or other obligation for the future payment of money in excess of appropriations authorized by law.

Section 10. NO THIRD PARTY BENEFICIARIES. Nothing expressed or mentioned in this AGREEMENT is intended or shall be construed to give any person, other than the WATERSHED PERMITTEES hereto, and any permitted successors, any legal or equitable right, remedy or claim under or in respect of this AGREEMENT or any provisions herein contained. This AGREEMENT and any conditions and provisions hereof is intended to be and is for the sole and exclusive benefit of the WATERSHED PERMITTEES hereto and for the benefit of no other person, agency or entity.

Section 11. REFERENCE TO CALENDAR DAYS. Any reference to the word "day" or "days" herein shall mean calendar day or calendar days, respectively, unless otherwise expressly provided.

Section 12. ATTORNEYS FEES. In any action or proceeding brought to enforce or interpret any provision of this AGREEMENT, or where any provision hereof is asserted as a defense, each WATERSHED PERMITTEE shall bear its own attorneys' fees and costs.

Section 13. ENTIRE AGREEMENT. This AGREEMENT is intended by the WATERSHED PERMITTEES as a final expression of their agreement and intended to be a complete and exclusive statement of the agreement and understanding of the WATERSHED PERMITTEES hereto in respect of the subject matter contained herein. There are no restrictions, promises, warranties or undertakings, other than those set forth or referred to herein. This AGREEMENT supersedes all prior agreements and understandings between the WATERSHED PERMITTEES with respect to such matter.

Section 14. SEVERABILITY. If any part of this AGREEMENT is held, determined or adjudicated to be illegal, void, or unenforceable by a court of

competent jurisdiction, the remainder of this AGREEMENT shall be given effect to the fullest extent reasonably possible.

Section 15. SUCCESSORS AND ASSIGNS. The terms and provisions of this AGREEMENT shall be binding upon and inure to the benefit of the WATERSHED PERMITTEES hereto and their successors and assigns.

Section 16. NOTICES. All notices required or desired to be given under this AGREEMENT shall be in writing and (a) delivered personally, or (b) sent by certified mail, return receipt requested or (c) sent by telefacsimile communication followed by a mailed copy, to the addresses specified below, provided each WATERSHED PERMITTEE may change the address for notices by giving the other WATERSHED PERMITTEES at least ten (10) days written notice of the new address. Notices shall be deemed received when actually received in the office of the addressee or when delivery is refused, as shown on the receipt of the U.S. Postal service, or other person making the delivery, except that notices sent by telefacsimile communication shall be deemed received on the first business day following transmission.

Director of Public Works
City of Dana Point
33282 Golden Lantern
Dana Point, CA 92629

Director of Public Services
City of Laguna Hills
24035 El Toro Road
Laguna Hills, CA 92653

Director of Public Works
City of Laguna Niguel
27801 La Paz Road
Laguna Niguel, CA 92677

Director of Public Works
City of Mission Viejo
200 Civic Center
Mission Viejo, CA 92691

Director of Public Works

City of Rancho Santa Margarita
22112 El Paseo
Rancho Santa Margarita, CA 92688

Public Works Director/City Engineer City of San Juan Capistrano
32400 Paseo Adelanto
San Juan Capistrano, CA 92675

Director, OC Public Works
County of Orange
P.O. Box 4048
Santa Ana, CA 92702-4048

Section 17. EXECUTION OF AGREEMENT. This AGREEMENT may be executed in counterpart and the signed counterparts shall constitute a single instrument.

Section 18. GOVERNING LAW AND VENUE. This AGREEMENT has been negotiated and executed in the State of California and shall be governed by and construed under the laws of the State of California. In the event of any legal action to enforce or interpret this AGREEMENT, the sole and exclusive venue shall be a court of competent jurisdiction located in Orange County, California, and the WATERSHED PERMITTEES hereto agree to and do hereby submit to the jurisdiction of such court, notwithstanding Code of Civil Procedure section 394. Furthermore, the WATERSHED PERMITTEES have specifically agreed, as part of the consideration given and received for entering into this AGREEMENT, to waive any and all rights to request that an action be transferred for trial to another county under Code of Civil Procedure Section 394 or any other provision of law.

IN WITNESS WHEREOF, the WATERSHED PERMITTEES hereto have executed this AGREEMENT the day and year first above written:

ORANGE COUNTY FLOOD CONTROL DISTRICT
A body corporate and politic

By: _____
Chairman of the Board of Supervisors

COUNTY OF ORANGE
A body corporate and politic

Date: 9-14-10

By: _____
Chairman of the Board of Supervisors

SIGNED AND CERTIFIED THAT A COPY OF
THIS AGREEMENT HAS BEEN DELIVERED TO
THE CHAIRMAN OF THE BOARD

Date: 9-14-10

By _____
DARLENE J. BLOOM
Clerk of the Board of Supervisors of
Orange County, California

APPROVED AS TO FORM
COUNTY COUNSEL
ORANGE COUNTY, CALIFORNIA

By _____
Geoffrey K. Hunt, Deputy

Date: 7/13/2010

CITY OF DANA POINT

Date: April 19, 2010

By: _____
Mayor

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney

CITY OF LAGUNA HILLS

Date: April 27, 2010

By: _____
Mayor, Randal Bressette

ATTEST:

_____
City Clerk, Peggy J. Johns

APPROVED AS TO FORM:

_____
City Attorney, Gregory E. Simonian

CITY OF LAGUNA NIGUEL

Date: 5/2/10

By: _____
Mayor

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney 4/21/10

CITY OF MISSION VIEJO

Date: 5-18-10

By: Trish Kelley
Trish Kelley
Mayor

ATTEST:

Karen Hamman
Karen Hamman
City Clerk

APPROVED AS TO FORM:

William P. Curley III
William P. Curley III
City Attorney

CITY OF RANCHO SANTA MARGARITA

Date: 7-21-10

By: _____
Mayor

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney

CITY OF SAN JUAN CAPISTRANO

Date: 4/20/2010

By: _____
City Manager

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney

Exhibit A
San Juan Creek TMDL Program
Cost Share Allocations

Permittee	Total Square Miles[1]	Square Miles Within San Juan Creek Watershed[1]	Percentage Of Land Area In Watershed[2]	Total Population[3]	Estimated Population in San Juan Creek Watershed[4]	Weighted Average Share of Cost (%)[5]
Dana Point	6.43	1.96	30.44	37,082	11,289	2.99
Laguna Hills	6.64	1.01	15.26	33,434	5,101	1.40
Laguna Niguel	14.79	1.35	9.16	67,201	6,156	1.75
Mission Viejo	17.93	14.53	81.04	100,242	81,234	21.71
Rancho Santa Margarita	12.94	12.92	99.87	49,704	49,638	14.94
San Juan Capistrano	13.26	12.89	97.18	36,870	35,831	12.25
County of Orange	175.23	64.08	36.57	119,480	43,689	34.96
OCFCD[6]	----	----	----	----	----	10.00
TOTALS	**247.220**	**108.740**	**----**	**444,013**	**232,938**	**100.00**

[1] Source: County of Orange RDMD/Geomatics, February 2009 (see Agreement D02-048 Exhibit B-1)

[2] Percentage of Land Area in Watershed = Square miles within Watershed/Total Square Miles * 100

[3] Source: State of California Department of Finance, January 2009 (see Agreement D02-048 Exhibit B-1)

[4]Estimated Population in Watershed = Total Population * Percentage of City Land Area in Watershed/100

[5]Weighted Average Share of Cost = ((Square Miles within Watershed/Total Square Miles of Watershed)*0.5)+((Estimated Population in Watershed/Total Estimated Population in Watershed)*0.5) x 90

[6]Orange County Flood Control District assumes a flat 10 percent of the total

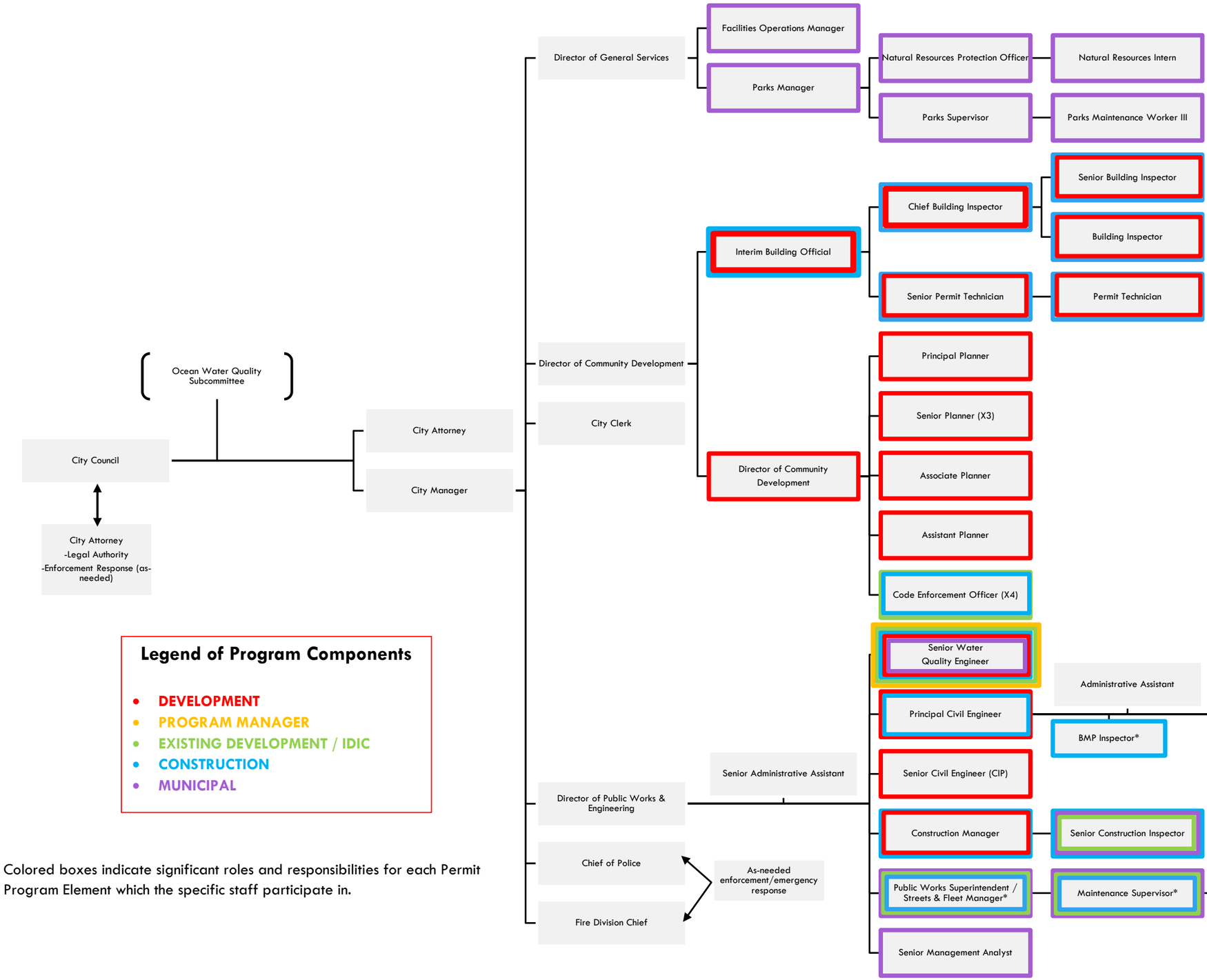
Exhibit B
FY 2010-11 Cost Share Amount

Permittee	Weighted Average Share of Cost (%)	Cost Share Amount
Dana Point	2.99%	$ 5,933.65
Laguna Hills	1.40%	$ 2,786.68
Laguna Niguel	1.75%	$ 3,471.92
Mission Viejo	21.71%	$ 43,062.34
Rancho Santa Margarita	14.94%	$ 29,633.56
San Juan Capistrano	12.25%	$ 24,312.21
County of Orange	34.96%	$ 69,349.74
OCFCD	10.00%	$ 19,838.90
TOTALS	**100**	**$ 198,389.00**

See Exhibit A for cost share percentage information

City of Dana Point Water Quality Program Simplified Schematic of Significant Roles & Responsibilities

December, 2018



Legend of Program Components

- DEVELOPMENT
- PROGRAM MANAGER
- EXISTING DEVELOPMENT / IDIC
- CONSTRUCTION
- MUNICIPAL

Notes:

1. Colored boxes indicate significant roles and responsibilities for each Permit Program Element which the specific staff participate in.

*Contract Employee

	CAPITAL COSTS

Fiscal Analysis Summary

LIP Program Elements	FY20XX-XX Costs	Projected Costs FY20XX-XX
Public Projects - BMPs		
Other Capital Projects / Major Equipment Purchases FYXX-XX: Any Costs in Facilities Improvement Fund (12) FYXX-XX: Any irrigation runoff prevention improvement in Parks (timers, upgrades, etc.) FYXX-XX: other costs, as appropriate		
TOTALS		

OPERATIONS & MAINTENANCE

LIP Program Elements	FY20XX-XX Costs	Projected Costs FY20XX-XX
Supportive of Program Administration (Communications (57-2010), Office Supplies (57-2070), Memberships (57-2090), Training (57-2150), SOCWMA Cost Share in 57-2510, 57-2130, mileage (57-2290), 57-2270, SWRCB Permit Fee (57-2510), Legal Fees (admin.))		
Staff Resources		
Municipal Activities (LIP Section 5.0) Storm Drains & Trash & Debris Control (52-2510 & 57-2510 plus specific County tasks from spreadsheet)		
Municipal Activities (LIP Section 5.0) Street Sweeping (52-2490)		
Public Information (LIP Section 6.0) Nonpoint Source Pollution Awareness (57-2110)		
Existing Development (LIP Section 9.0) Industrial/Comm./HOA Inspections, 57-2230		
Illicit Connections/Discharge Ident. & Elimination (LIP Section10.0) Investigations,. See above in Municipal Activities: 57-2230, 57-2510		
Agency Contribution to Regional Program, 57-2510		
WQ Technical Support (57-2230)		
Other - Construction BMP Inspections (reimbursed by fees, 57-2240)		
TOTALS		

LIP Funding Sources	FY 20XX-XX Funding Sources	FY 20XX-XX Projected Funding Sources
General Fund		
Utility Tax/Charges		
Separate Utility Billing Item		
Gas Tax		
Special District Fund	fill out funds below	
- Sanitation Fee		
- Benefit Assessment		
- Fleet Maintenance Fund		
- Community Services Fund		
- Water Fund		
- Sewer & Storm Drain Maintenance Fee		
Other: Permit Fees (Construction BMP Inspections)		
Other:		
Other:		
Other:		
Other:		
Other:		

General Fund		
Utility Tax/Charges		
Separate Utility Billing Item		
Gas Tax		
Special District Fund		
Other		
TOTAL		

JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM
City of Dana Point ANNUAL REPORT FORM
FY 20xx-xx

I. COPERMITTEE INFORMATION			
Copermittee Name: City of Dana Point			
Copermittee Primary Contact Name: Lisa Zawaski			
Copermittee Primary Contact Information: Dana Point City Hall Address: 33282 Golden Lantern, Public Works Suite 212			
City: Dana Point	County: Orange	State: CA	Zip: 92629
Telephone: 949-248-3584	Fax: N/A	Email: lzawaski@danapoint.org	

II. LEGAL AUTHORITY	
Has the Copermittee established adequate legal authority within its jurisdiction to control pollutant discharges into and from its MS4 that complies with Order No. R9-2013-0001?	YES ☐ NO ☐
A Principal Executive Officer, Ranking Elected Official, or Duly Authorized Representative has certified that the Copermittee obtained and maintains adequate legal authority?	YES ☐ NO ☐

III. JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM DOCUMENT UPDATES	
Was an update of the jurisdictional runoff management program document required or recommended by the San Diego Regional Water Board?	YES ☐ NO ☐
If YES to the question above, did the Copermittee update its jurisdictional runoff management program document and make it available on the Regional Clearinghouse?	YES ☐ NO ☐

IV. ILLICIT DISCHARGE DETECTION AND ELIMNATION PROGRAM	
Has the Copermitee implemented a program to actively detect and eliminate illicit discharges and connections to its MS4 that complies with Order No. R9-2013-0001?	YES ☐ NO ☐
Number of non-storm water discharges reported by the public	
Number of non-storm water discharges detected by Copermittee staff or contractors	
Number of non-storm water discharges investigated by the Copermittee	
Number of sources of non-storm water discharges identified	
Number of non-storm water discharges eliminated	
Number of sources of illicit discharges or connections identified	
Number of illicit discharges or connections eliminated	
Number of enforcement actions issued	
Number of escalated enforcement actions issued (includes actions more than Notice of Violation/Compliance)	

V. DEVELOPMENT PLANNING PROGRAM	
Has the Copermittee implemented a development planning program that complies with Order No. R9-2013-0001?	YES ☐ NO ☐
Was an update to the BMP Design Manual required or recommended by the San Diego Water Board?	YES ☐ NO ☐
If YES to the question above, did the Copermittee update its BMP Design Manual and make it available on the Regional Clearinghouse?	YES ☐ NO ☐
Number of proposed development projects in review (includes Engineering/Grading projects)	
Number of Priority Development Projects in review (includes both Preliminary & Final WQMPs under review)	
Number of Priority Development Projects approved (Note: represents only "Final" WQMP approvals)	
Number of approved Priority Development Projects exempt from any BMP requirements (Hydromod Exemptions Only)	
Number of approved Priority Development Projects allowed alternative compliance	
Number of Priority Development Projects granted occupancy	

Number of completed Priority Development projects in inventory	
Number of high Priority Development Project structural BMP inspections	
Number of Priority Development Project structural BMP violations	
Number of enforcement actions issued	
Number of escalated enforcement actions issued	

VI. CONSTRUCTION

Has the Copermittee implemented a construction management program that complies with Order No. R9-2013-0001?	YES ☐ NO ☐
Number of construction sites in inventory (Grading Permit sites = X, date)	
Number of active construction sites in inventory	
Number of inactive construction sites in inventory	
Number of construction sites closed/completed during reporting period (Permits Finaled)	
Number of construction site inspections	
Number of construction site violations	
Number of enforcement actions issued	
Number of escalated enforcement actions issued	

VII. EXISTING DEVELOPMENT MANAGEMENT PROGRAM

Has the Copermittee implemented an existing development management program that complies with Order No. R9-2013-0001?	YES ☐ NO ☒

	Municipal	Commercial**	Industrial	Residential*
Number of facilities or areas in inventory				
Number of existing development inspections				
Number of follow-up inspections				
Number of violations				
Number of enforcement actions issued				
Number of escalated enforcement actions issued				

VIII. PUBLIC EDUCATION AND PARTICIPATION

Has the Copermitee implemented a public education program component that complies with Order No. R9-2013-0001?	YES ☐ NO ☐
Has the Copermitee implemented a public participation program component that complies with Order No. R9-2013-0001?	YES ☐ NO ☐

IX. FISCAL ANALYSIS

Has the Copermittee attached to this form a summary of its fiscal analysis that complies with Order No. R9-2013-0001?	YES ☐ NO ☐

X. CERTIFICATION

I [☐ Principal Executive Officer ☐ Ranking Elected Official ☒ Duly Authorized Representative] certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature	Date
Lisa Zawaski	Senior Water Quality Engineer
Print Name	Title
949-248-3584	lzawaski@danapoint.org
Telephone Number	Email

ATTACHMENT D: JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM ANNUAL REPORT FORM

CITY OF DANA POINT

OFFICE OF THE CITY MANAGER

July 3, 2018

Ms. Laurie Walsh
San Diego Regional Water Quality Control Board
2375 Northside Drive, Suite 100
San Diego, CA 92108-2700
Submitted via email:
Laurie.Walsh@waterboards.ca.gov

Bill Hereth / Gayleen Perreira
State Water Resources Control Board
Storm Water Section
P.O. Box 1977
Sacramento, CA 95812-1977
Gayleen.Perreira@waterboards.ca.gov &
bhereth@waterboards.ca.gov

Subject: City of Dana Point, PIN 219073
Duly Authorized Representative

Dear Ms. Walsh & Mr. Hereth & Ms. Perreira:

This is to notify you that the following positions have been designated as Duly Authorized Representatives for the City of Dana Point on all matters relating to the *National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the* San *Diego Region* (Order), NPDES Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100, NPDES No. CAS0109266, and for any subsequent MS4 Orders, Permits, or other water quality related orders, relating to the City of Dana Point.

- Senior Water Quality Engineer
- Director of Public Works & Engineering

The positions designated above possess authorized signature authority for all reports and/or submissions required by the City's NPDES permit(s), and for any other correspondence or information requested by the San Diego Regional Water Quality Control Board.

Respectfully,

Mike Killebrew
Assistant City Manager/Director of Administrative Services
City of Dana Point

CC: M. Denny, M. Sinacori, L.Zawaski, City of Dana Point

July 3, 2018

Ms. Laurie Walsh
San Diego Regional Water Quality Control Board
2375 Northside Drive, Suite 100
San Diego, CA 92108-2700
Submitted via email:
Laurie.Walsh@waterboards.ca.gov

Bill Hereth / Gayleen Perreira
State Water Resources Control Board
Storm Water Section
P.O. Box 1977
Sacramento, CA 95812-1977
Gayleen.Perreira@waterboards.ca.gov &
bhereth@waterboards.ca.gov

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Respectfully,

Mike Killebrew
Assistant City Manager/Director of Administrative Services
City of Dana Point

CC: M. Denny, M. Sinacori, L.Zawaski, City of Dana Point

CITY OF DANA POINT

OFFICE OF THE CITY MANAGER

July 3, 2018

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San Diego Regional Water Quality Control Board
2375 Northside Drive, Suite 100
San Diego, CA 92108-2700
Submitted via email:
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Mike Killebrew
Assistant City Manager/Director of Administrative Services
City of Dana Point

CC: M. Denny, M. Sinacori, L.Zawaski, City of Dana Point

CITY OF DANA POINT

OFFICE OF THE CITY MANAGER

File

NPDES MS4 PERMIT

July 3, 2018

Ms. Laurie Walsh
San Diego Regional Water Quality Control Board
2375 Northside Drive, Suite 100
San Diego, CA 92108-2700
Submitted via email:
Laurie.Walsh@waterboards.ca.gov

Bill Hereth / Gayleen Perreira
State Water Resources Control Board
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Respectfully,

Mike Killebrew
Assistant City Manager/Director of Administrative Services
City of Dana Point

CC: M. Denny, M. Sinacori, L.Zawaski, City of Dana Point

Exhibit 3.1: Summary of City of Dana Point Summary of Jurisdictional and Watershed Strategies

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
DAMP/LIP Strategies					
Municipal Activities	Trash and Debris Control	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	<u>WQIP Priority Pollutants</u> •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity <u>Other Pollutants</u> •Metals •Oil & Grease •Sediment	Citywide	LIP Section 5
	Drainage Facility Maintenance – MS4 Inspections/Cleaning				
	Street Sweeping				
	Structural BMP Maintenance at Municipal Projects				
	Pesticide & Fertilizer Management				
	Municipal Staff Training and Education				
Public Education	Nonpoint Source Pollution Awareness	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime •Channel Erosion/ Geomorphic Impacts	<u>WQIP Priority Pollutants</u> •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity <u>Other Pollutants</u> •Metals •Oil & Grease •Sediment	Citywide	LIP Section 6
	Household Hazardous Waste Collection				

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
	City's Ocean Water Quality Subcommittee				LIP Section 6
New Development/ Significant Redevelopment	Water Quality Management Plan Review & Post Construction BMP Inspection	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime •Channel Erosion/ Geomorphic Impacts	<u>WQIP Priority Pollutants</u> •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity <u>Other Pollutants</u> •Metals •Oil & Grease •Sediment	Citywide	LIP Section 7
Construction	Construction BMPs – Plan Check & Inspection	•Pathogen Health Risk Unnatural Water Balance/Flow Regime •Channel Erosion/ Geomorphic Impacts	<u>WQIP Priority Pollutants</u> •Bacteria/Pathogens •Non-stormwater discharges •Nutrients •Trash •Turbidity <u>Other Pollutants</u> •Metals •Oil & Grease •Sediment	Citywide	LIP Section 8

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
Existing Development	Industrial Facility Inspections	•Unnatural Water Balance/Flow Regime	<u>WQIP Priority Pollutants</u> •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Toxicity <u>Other Pollutants</u> •Metals	Industrial Facilities within the City	LIP Section 9
	Commercial/Food Facility Inspections	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	<u>WQIP Priority Pollutants</u> •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Toxicity <u>Other Pollutants</u> •Metals	Commercial/ Food Facilities within the City	LIP Section 9
Existing Development	Mobile Business Program	•Unnatural Water Balance/Flow Regime	<u>WQIP Priority Pollutants</u> •Non-stormwater discharges •Nutrients •Toxicity <u>Other Pollutants</u> •Metals •Oil & Grease	Citywide	LIP Section 9

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
	Residential/HOA Inspections	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	<u>WQIP Priority Pollutants</u> •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity <u>Other Pollutants</u> •Metals •Oil & Grease	City Residential Management Areas	LIP Section 9
Illegal Discharges / Illicit Connections	Illicit Connection Inspections Illegal Discharge Investigations, Spill Response	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	<u>WQIP Priority Pollutants</u> •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity <u>Other Pollutants</u> •Metals •Oil & Grease •Sediment	Citywide	LIP Section 10
WQIP Strategies					

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
Regional WQIP Strategies	Control Activities for Pathogen Health Risk •Comprehensive Human Waste Source Reduction Program	•Pathogen Health Risk	WQIP Priority Pollutants •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients	South Orange County Watershed Management Area	WQIP Section 3
Regional WQIP	Control Activities for Unnatural Water Balance •Expanded transitional monitoring observations •Detailed flow monitoring at priority outfalls •High-resolution imagery analysis •Flow regime characterization •Outfall prioritization •Outfall capture feasibility studies •Incentives for low water use landscaping and/or irrigation source controls	•Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity Other Pollutants •Metals •Oil & Grease •Sediment	South Orange County Watershed Management Area	WQIP Section 3

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
Strategies	Control Activities for Channel Erosion •Restoration Alternatives and Feasibility Studies •Finalize Conceptual Geomorphically-Referenced Basis of Design (GRBoD) Guidelines •Programmatic Permitting Framework for Geomorphically-Referenced Basis of Design Projects •LiDAR Data Acquisition and Analysis •Coordination with upland controls proposed for Pathogen Health Risk and Water Balance HPWQCs •Aliso Creek Mainstem Ecosystem Restoration Project •Watershed Management Area Analysis Coarse Sediment Supply Analysis	•Channel Erosion/ Geomorphic Impacts	WQIP Priority Pollutants •Bacteria/Pathogens •Nutrients •Turbidity •Toxicity Other Pollutants •Sediment	South Orange County Watershed Management Area	WQIP Section 3
Jurisdictional Non-structural WQIP Strategies	Unauthorized Encampment Waste Management Program	•Pathogen Health Risk	WQIP Priority Pollutants •Bacteria/Pathogens •Trash	Targeted areas, when observed	LIP Section 5
	Permitted discharge and water impoundment inventories	•Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants •Non-stormwater discharges	Citywide	LIP Section 10
	Investigation of L01S02 (in coordination with the City of San Juan Capistrano, County of Orange and Caltrans)	•Pathogen Health Risk	WQIP Priority Pollutants •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff	L01S02 Subwatershed (San Juan Creek Watershed)	LIP Section 3

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
Jurisdictional Structural WQIP Strategies	City-wide Catch Basin Inlet Filters	•Pathogen Health Risk	<u>WQIP Priority Pollutants</u> •Bacteria/Pathogens •Trash <u>Other Pollutants</u> •Nutrients •Sediment	Citywide	LIP Section 5
Jurisdictional Structural WQIP Strategies	**ALIPAZ DIVERSION** <u>Project Description</u>: dry weather flow diversion to sewer <u>Drainage Area</u>: 372 acres <u>Project Schedule</u>: April 2003 <u>Project Costs</u>: $650,000, including trash separation unit	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	<u>WQIP Priority Pollutants</u> (Dry Weather Only) •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity <u>Other Pollutants</u> •Metals •Oil & Grease •Sediment	Alipaz Storm Drain Subwatershed (San Juan Creek Watershed)	LIP Section 5

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
	DEL OBISPO DIVERSION Project Description: dry weather flow diversion to sewer Drainage Area: 27 acres Project Schedule: December 2003 Project Costs: $650,000, including trash separation unit	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants (Dry Weather Only) •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity Other Pollutants •Metals •Oil & Grease •Sediment	Del Obispo Storm Drain Subwatershed (San Juan Creek Watershed)	LIP Section 5

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
Jurisdictional Structural WQIP Strategies	**NORTH CREEK DIVERSION** Project Description: dry weather flow diversion to sewer Drainage Area: 150 acres Project Schedule: September 2003 Project Costs: $1,000,000, including trash separation unit	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants (Dry Weather Only) •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity Other Pollutants •Metals •Oil & Grease •Sediment	North Creek Storm Drain Subwatershed (San Juan Creek Watershed)	LIP Section 5

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
	STRANDS BEACH DIVERSION Project Description: dry weather diversion Drainage Area: 58 acres Project Schedule: May 2009 Project Costs: $58,000	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants (Dry Weather Only) •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity Other Pollutants •Metals •Oil & Grease •Sediment	Strands Beach Storm Drain Subwatershed (San Juan Creek Watershed)	LIP Section 5

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
Jurisdictional Structural WQIP Strategies	**BABY BEACH DIVERSION** Project Description: dry weather diversion Drainage Area: 32 acres Project Schedule: 2009 Project Costs: paid by developer/County	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants (Dry Weather Only) •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity Other Pollutants •Metals •Oil & Grease •Sediment	Baby Beach Storm Drain Subwatershed (San Juan Creek Watershed)	LIP Section 5

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
	URBAN RUNOFF DIVERSION, INCLUDING CAMINO DE ESTRELLA Project Description: eight plus one small coastal drainage dry weather diversions Drainage Area: small coastal drainages Project Schedule: June 2003 Project Costs: $800,000	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants (Dry Weather Only) •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity Other Pollutants •Metals •Oil & Grease •Sediment	Urban Runoff Storm Drain Coastal Subwatersheds (8) (San Juan Creek Watershed)	LIP Section 5

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
Jurisdictional Structural WQIP Strategies	**CAPO BEACH DIVERSION** Project Description: dry weather diversion Drainage Area: 261 acres Project Schedule: May 2007 Project Costs: $500,000	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants (Dry Weather Only) •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity Other Pollutants •Metals •Oil & Grease •Sediment	Capo Beach Storm Drain Subwatershed (San Juan Creek Watershed)	LIP Section 5

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
Jurisdictional Structural WQIP Strategies	**HEADLANDS DIVERSIONS (3)** Project Description: 3 dry weather diversions Drainage Area: 62 acres Project Schedule: 2009 Project Costs: paid by developer	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants (Dry Weather Only) •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients •Trash •Pesticides •Turbidity •Toxicity Other Pollutants •Metals •Oil & Grease •Sediment	Headlands Development Subwatershed (San Juan Creek Watershed)	LIP Section 5
	ALIPAZ TRASH SEPARATION UNIT Project Description: hydrodynamic separator, operates all year Drainage Area: 372 acres Project Schedule: April 2003 Project Costs: $650,000, including dry weather diversion	•Pathogen Health Risk	WQIP Priority Pollutants •Bacteria/Pathogens •Nutrients •Trash	Alipaz Storm Drain Subwatershed (San Juan Creek Watershed)	LIP Section 5

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
Jurisdictional Structural WQIP Strategies	**DEL OBISPO TRASH SEPARATION UNIT** Project Description: hydrodynamic separator, operates all year Drainage Area: 27 acres Project Schedule: December 2003 Project Costs: $650,000, including dry weather diversion	•Pathogen Health Risk	WQIP Priority Pollutants •Bacteria/Pathogens •Nutrients •Trash	Del Obispo Storm Drain Subwatershed (San Juan Creek Watershed)	LIP Section 5
	NORTH CREEK TRASH SEPARATION UNIT Project Description: hydrodynamic separator, operates all year Drainage Area: 150 acres Project Schedule: September 2003 Project Costs: $1,000,000, including dry weather diversion	•Pathogen Health Risk	WQIP Priority Pollutants •Bacteria/Pathogens •Nutrients •Trash	North Creek Subwatershed (San Juan Creek Watershed)	LIP Section 5
	CAPO BEACH TRASH SEPARATION UNIT Project Description: hydrodynamic separator, operates all year Drainage Area: 261 acres Project Schedule: May 2007 Project Costs: $500,000	•Pathogen Health Risk	WQIP Priority Pollutants •Bacteria/Pathogens •Nutrients •Trash	Capo Beach Subwatershed (San Juan Creek Watershed)	LIP Section 5

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
Jurisdictional Structural WQIP Strategies	**HEADLANDS TRASH UNIT AND MEDIA FILTER** Project Description: 3 trash separation units (pre-treatment) and media filters, operate all year Drainage Area: 62 acres Project Schedule: 2009 Project Costs: paid by developer	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants •Bacteria/Pathogens •Trash •Turbidity •Toxicity Other Pollutants •Metals •Oil & Grease •Sediment	Headlands Development Subwatershed (San Juan Creek Watershed)	LIP Section 5
	BABY BEACH TRASH UNIT AND MEDIA FILTER Project Description: trash separation unit (pre-treatment) and media filter, operate all year Drainage Area: 32 acres Project Schedule: 2009 Project Costs: paid by developer/County	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants •Bacteria/Pathogens •Trash •Turbidity •Toxicity Other Pollutants •Metals •Oil & Grease •Sediment	Headlands Development Subwatershed (San Juan Creek Watershed)	LIP Section 5

Strategy		High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
	DOHENY VILLAGE PARKING LOT INFILTRATION BMP Project Description: infiltration trench for parking lot Drainage Area: 0.25 acres Project Schedule: July 2015 Project Costs:	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants •Bacteria/Pathogens •Trash •Turbidity •Toxicity Other Pollutants •Metals •Oil & Grease •Sediment	Parking Lot Drainage	LIP Section 5
	Coordinate with and help advertise/promote Municipal Water District of Orange County and Water District "Smart Landscape" Rebate Programs	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants •Bacteria/Pathogens •Non-stormwater discharges, including irrigation Runoff •Nutrients Other Pollutants •Sediment	Citywide/as programs & funding exist	LIP Section 3

Strategy	High Priority Water Quality Conditions (HPWQC) Targeted	Target Pollutants	Geographic Extent of Implementation	Location in LIP or WQIP
CITY MEDIAN/PARKWAY RETROFITS DANA POINT GOLDEN LANTERN PARKWAY MITIGATION PROJECT (JEREMIAH/PRISCILLA) Project Description: infiltration trench for parking lot Drainage Area: 0.25 acres Project Schedule: June 2013 Project Costs: $100,000 Mitigated the parkway along the Golden Lantern corridor, between Jeremiah and Priscilla, with the following pollution prevention BMPs: • drip irrigation system; • weather based controller; • drought tolerant landscaping; and • a moisture sensor	•Pathogen Health Risk •Unnatural Water Balance/Flow Regime	WQIP Priority Pollutants •Bacteria/Pathogens •Non-stormwater discharges, including irrigation runoff •Nutrients Other Pollutants •Sediment	As needed when funding available & project prioritized	LIP Section 5
SALT CREEK OZONE TREATMENT FACILITY Project Description: Runoff Ozone Treatment Facility (operates May – Nov during dry weather) Drainage Area: 4500 acres, approximately half Laguna Niguel, half Dana Point Project Schedule: November 2005 Project Costs: $6,700,000	•Pathogen Health Risk	WQIP Priority Pollutants (Dry Weather Only May thorough early Nov) •Bacteria/Pathogens •Non-stormwater discharges, including irrigation runoff	Salt Creek Watershed (Dana Point Coastal Streams Watershed)	LIP Section 5

WQIP Table D.3-4: CITY OF DANA POINT - Optional Jurisdictional Strategies (Permit Section B.3.b.(1)(b))			
Strategy	**Implementation Timeframe**	**Triggers**	**Resources**
Implement Offsite Alternative Compliance Program	Continuous- Ongoing after trigger followed by program development	Implementation of this strategy may be triggered if: 1. an interim goal has not been met 2. it has been determined by the Agency through adaptive management that implementation is necessary 3. a watershed wide mechanism has been developed and accepted by majority of watershed agencies 4. BMP site/project is available 5. City Councils approve the program 6. pilot program success 7. all of the necessary resources have been secured.	Staff time, budget and schedule to develop the program, develop and enact administrative procedures, and conduct public outreach. The estimated cost of implementation of this strategy is unknown at this time, and it would be an ongoing strategy with approximately 6-12 months to develop the program.
Support projects that conduct and/or conduct invasive plant removal in key/strategic locations as identified, collaborate with and/or support volunteer groups as needed to encourage invasive plant removal and habitat restoration.	Continuous- Ongoing after trigger as opportunities exist	1. Grant funding is secure 2. applicable permits are secured 3. there exists a nexus to IBI Scores 4. property owner permission secured	Each structural BMP project will require the following resources: 1. Staff resources 2. Grant funding or alternative source 3. Contractor funding 4. Partnerships 5. methods/design 6. Permits 7. Environmental review 8. Right of way acquisition, if needed 9. Ongoing funding for operation/maintenance
Enhance and expand trash cleanups through community-based organizations involving target audiences.	Continuous- Ongoing after trigger	Implementation of this strategy may be triggered if: 1. Anthropogenic trash is abundant 2. Any applicable limits regarding land use authority, constitutional and statutory restraints have been addressed.	The following resources will be required: establishments/maintenance of partnerships, accessible sites, property owner permission, funding, staff and equipment resources.

WQIP Table D.3-4: CITY OF DANA POINT - Optional Jurisdictional Strategies (Permit Section B.3.b.(1)(b))			
Strategy	**Implementation Timeframe**	**Triggers**	**Resources**
Conduct special study(ies)	Discrete schedule depending on study scope, implemented after trigger	Implementation of this strategy may be triggered if (1) a related interim goal has not been met, (2) it has been determined by the Agency through adaptive management that implementation is necessary, and (2) the preliminary root cause of the exceedance or non-compliant priority water condition has not been identified.	Implementation of any Special Study will require the following resources: • Staff, technical advisor & contractor resources • Physical access to the identified waterways or lands causing or contributing to the problem • Property owner permission • Funding • Equipment
Enhance commercial, industrial, and/or municipal inspections in strategic locations	Continuous- Ongoing after trigger	Implementation of this strategy may be triggered if: 1. An interim goal has not been met 2. Source is determined to likely be from commercial, industrial or municipal source 3. Existing inspection frequency does not seem to be effective 4. Staffing resources are available.	Staff resources
Install treatment BMPs (diversion or treatment) to address HPCC's/Numeric Targets	Once triggered, 3-6 years per project	Implementation of this strategy may be triggered if (1) an interim goal has not been met; and (2) it has been determined by the watershed partners through adaptive management that implementation is necessary; and (3) permission is granted from sewer and wastewater treatment agencies (for diversion projects); and (4) ground water or permitted discharges have been ruled out; and (5) cooperative agreements have been secured for all contributing agencies, (6) all of the necessary funding, including grant funds, and other resources have been secured.	Each structural BMP project will require the following resources: • Staff resources • Grant funding or alternative source • Contractor funding • Partnerships • Engineering design • Permits/Agreements • Environmental review • Right of way acquisition, if needed • Ongoing funding/agreements for operation/maintenance
Develop site specific objective (SSO) for Bacteria TMDL compliance	Ongoing after trigger followed by program development and coordination with RWQCB staffing and schedules	Implementation of this strategy may be triggered if (1) an interim goal has not been met; or (2) it has been determined by the Agenc(ies) through adaptive management that implementation is necessary; (3) an SSO is determined appropriate; (5) regulatory agency acceptance and approvals are secured, and (6) all of the necessary resources, including agency cooperative agreements have been secured.	Refer to human pathogen source control strategy in WQIP, Section 2. Staff time and budget to develop the objective, develop and enact administrative procedures, conduct public outreach and education, as necessary, establish technical advisory and stakeholder work groups. The estimated cost of implementation of this strategy is unknown at this time, and it would be an ongoing strategy with approximately 12-36 months to develop the program.
Grease Interceptor Rebate Program	Ongoing (provided City council & South Coast Water District (SCWD) Board approve funds)	Implementation is evaluated each year and subject to 1) continued partnership with SCWD and 2) both City Council and SCWD Board approve funding and it is available at time of eligible applicant request.	City Staff time for administration and a designated amount of fund available to qualified applicants (funding is limited and subject to approval)

WQIP Table D.3-4: CITY OF DANA POINT - Optional Jurisdictional Strategies (Permit Section B.3.b.(1)(b))			
Strategy	**Implementation Timeframe**	**Triggers**	**Resources**
Investigate application of rainwater harvesting feasibility and applications in retrofit applications	Once triggered, investigating application and feasibility 1-2 years. If feasibility is determined, 1-3 years per project	Implementation of this strategy may be triggered if (1) an interim goal has not been met; and (2) it has been determined by the watershed partners through adaptive management that implementation is necessary; (3) available site and application is proposed to investigate. If feasibility is determined, Triggers include: (1) permission is granted and/or permits obtained from appropriate agencies, including, but not limited to City Building Dept., water agency and/or Orange county health Care Agency; as appropriate and (2) cooperative agreements have been secured for all contributing agencies, (3) all of the necessary funding, including grant funding and other resources have been secured.	Each rainwater harvesting BMP project will require the following resources: • Staff resources • Grant funding or alternative source • Contractor funding • Partnerships • methods/design/appropriate use/need of water has been determined • Permits • Environmental review • Right of way acquisition, if needed • Ongoing funding for operation/maintenance

RUTAN
RUTAN & TUCKER, LLP

Jeremy N. Jungreis
Direct Dial: (714) 662-4628
E-mail: jjungreis@@rutan.com

January 4, 2019

David Gibson
Executive Officer
Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, California 92123-4340

Re: City of Dana Point - Legal Authority Statement Regarding California Regional Water Quality Control Board, San Diego Region, Order No. R9-2013-0001 (as Amended By Order Nos. R9-2015-0001 and R9-2015-0100, NPDES No. CAS0109266

Dear Mr. Gibson:

The City of Dana Point ("City") submits this Statement of Legal Authority (the "Statement") in its capacity as a Co-Permittee under the California Regional Water Quality Control Board, San Diego Region ("SD Regional Board"), Order No. R9-2013-0001, as Amended By Order Nos. R9-2015-0001 and R9-2015-0100, NPDES No. CAS0109266 (hereinafter the "Regional Permit"). This Statement supports the City's first submission of its Water Quality Improvement Plan Annual Report, and is intended to assist the City in complying with the requirements of Regional Permit provisions II.E.1.b and II.F.3.b.(3). Provision II.E.1.b identifies areas where a permittee must demonstrate legal authority under the Regional Permit, and provision II.F.3.b.(3) directs that the City's Principal Executive Officer, Ranking Elected Official, or Duly Authorized Representative certify, as part of the submission of the City's first Water Quality Improvement Plan Annual Report (incorporated as Attachment D to the Regional Permit), that the City has taken the necessary steps to obtain and maintain full legal authority within its jurisdiction to implement and enforce the requirements of the Regional Permit.

This firm serves as City Attorney for the City of Dana Point. This Statement is therefore intended to support the City's certification that it has and maintains sufficient legal authority to implement and enforce the Regional Permit within the City's jurisdiction, subject to the caveats and limitations expressed below. As the Regional Board is likely aware, the County of Orange, as the principal Co-Permittee, and a number of other south Orange County Co-Permittees (including the City), petitioned the State Water Resources Control Board ("State Board") for review of certain material provisions of the Regional Permit, a petition which the State Board took up on

its own motion on or around December 6, 2016. The resolution/outcome of the City's Petition, and/or litigation currently pending in California state courts, may alter the terms and enforceable provisions of the Regional Permit. Thus, the City notes that by submission of this Statement the City does not concede the validity or enforceability of any provision of the Regional Permit that the City otherwise petitioned in regard to the Regional Permit[1] or of any provisions in permits that preceded the Regional Permit. This Statement is not intended to be, and should not be construed as, a waiver of any rights the City has, or may have, to bring or maintain any legal challenge to any part or portion of the Regional Permit; nor should it be considered a waiver of any right the City has or may have to seek to recover any costs and other expenditures incurred to comply with mandates imposed by the Regional Permit that are, or may be in the future, determined to be unfunded state mandates. The City hereby reserves any and all of its rights with regard to the Regional Permit and/or any other requirements imposed on the City by the SD Regional Board.

Subject to the caveats expressed above and elsewhere within this correspondence, I confirm that the City has obtained and maintains necessary legal authority to comply with the legal requirements imposed upon the City by the Regional Permit, consistent with the requirements set forth in the regulations to the Clean Water Act, 40 CFR [Code of Federal Regulations] 122.26(d)(2)(i)(A)-(F), to the extent exercise of such authority is permitted by state and federal law, and also subject to any limitations on municipal actions that may pertain under the California and the United States Constitutions. The City has, or will have, adequate legal authority as required by the regulations implementing the Clean Water Act and applicable regulations to implement such requirements, and to enforce such additional requirements after they have been implemented, all to the extent permitted by state and federal law and subject to the limitations on municipal action under the constitutions of California and the United States (and applicable state and federal statutes and regulations). The primary source of the City's regulatory authority is Article 11, § 7 of the California Constitution. The City also has authority under § 13002 (a) of the California Water Code to adopt and enforce regulations conditioning, restricting and limiting activities which might degrade water quality within the jurisdiction of the City.

Discussed below are the most relevant Dana Point Municipal Code ("DPMC") provisions that aid the City in enforcing storm water/surface runoff-related requirements applicable within the jurisdictional boundaries of the City. These ordinances have been approved by the Dana Point City Council, and are codified within the DPMC. They are therefore legally enforceable municipal requirements, subject to state and federal statutory/constitutional limitations that may apply, including, but not limited to, due process of law, right to privacy, restrictions on warrantless searches,[2] legal restrictions on fees and charges, prohibitions on impairment of contracts, and

[1] The City filed a petition to review Order No. R9-2013-0001 (A-2254k), a petition to review to review Order No. R9-2015-0001 (A-2367), and petition to review R9-2015-0100 (A-2456(e)), all of which are pending before the State Water Resources Control Board ("SWRCB") in an abeyance status or pending SWRCB review on the SWRCB's own motion.

[2] See Code of Civil Procedure § 1822.50-54.

pertinent rights of appeal of judicial and/or administrative determinations that may pertain in particular cases. Where legally authorized by federal and/or state laws, administrative orders may be issued by the City against persons who cause unlawful discharges into the City's MS4, including the enforcement mechanisms detailed in the DPMC and the City's Enforcement Response Plan, or "ERP", which was approved by the Dana Point City Council per the update and amendment of the City's Local Implementation Program,[3] or "Updated LIP," on or about March 21, 2017. The Updated LIP was submitted to the Regional Board on or about March 27, 2017. A comprehensive list of the DPMC provisions which the City can utilize to ensure compliance with the Regional Permit are included in Sections 4.2 and 4.3 of the City's Updated LIP, enclosed herewith, and incorporated by reference herein, as Exhibit 1.

City departments and personnel principally responsible for ensuring compliance with the referenced codes and the Regional Permit are listed in Section 2-3 of the City's Updated LIP; external agencies that also implement programs which protect water quality within the boundaries of the City, and with whom the City regularly coordinates, are identified in Section 2.4 of the City's Updated LIP. Sections 2.3 and 2.4 of the City's Updated LIP, are enclosed herewith, and incorporated by reference herein, as Exhibit 2.

The DPMC provisions listed in Sections 4.2 and 4.3 of the Updated LIP are all duly enacted and contain specific enforcement provisions, including authorizing the City to impose administrative penalties, to institute nuisance abatement proceedings, and/or to pursue criminal sanctions where appropriate. Chapter 15.10 of the DPMC, commonly referred to as the City's "Water Quality Ordinance" is the foundation of the City's water quality/pollution prevention program. The most current version of the Water Quality Ordinance, and the entire DPMC, are available online at www.danapoint.org/municipalcode. The Water Quality Ordinance contains broad discharge prohibitions, detects and prohibits illicit connections and discharges, requires the imposition of various best management practices under circumstances required by the Regional Permit, effectively prohibits non-stormwater discharges (including the ability to initiate enforcement against persons that engage in excessive irrigation), establishes requirements for development projects/construction sites, and contains other requirements as may be necessary to comply with the requirements of the Regional Permit.

The City has in place, and will continue to have in place, the following legal and administrative procedures to aid in enforcing the terms of the Order, as may be necessary to achieve compliance with the Regional Permit: administrative remedies, nuisance remedies, criminal remedies, equitable remedies (including injunctive relief and declaratory relief under

[3] The City's Updated LIP serves as the Jurisdictional Urban Runoff Management Program ("JURMP") document required to be developed by each Co-Permittee under the Regional Permit. The City updated the LIP to add the required ERP, and to make other conforming changes required by the Regional Permit, on or about March 21, 2017. The Regional Board approved the South Orange County WQIP, which included the City's Updated LIP, on or about June 20, 2018.

State law) that may be enforced as violations of the DPMC, as well as via other available civil remedies, as permitted under state and federal law, to include those remedies listed in the City's approved ERP and other applicable remedies that may be available to the City under the Federal Resource Conservation and Recovery Act (RCRA – 42 USC § 6901 *et seq*.) and the Federal Clean Water Act (33 U.S.C. § 1251 *et seq*.). Individually, and collectively, these enforcement tools available to the City under state and federal law, ensure that the City, to the extent it is otherwise legally required to do so, has, and will continue to have, sufficient legal authority to meet applicable legal requirements of the Regional Permit.

Please do not hesitate to contact the undersigned should you have any questions or need any additional information with respect to any of the above, and thank you for your consideration of these matters.

Sincerely,

RUTAN & TUCKER, LLP

Jeremy N. Jungreis
Special Counsel, City of Dana Point

cc: Mr. Mark Denny, City Manager
Mr. Matt Sinacori, Director of Public Works and Engineering
Ms. Lisa Zawaski, Senior Water Quality Engineer
Mr. Patrick Munoz, City Attorney

EXHIBIT 1

SECTION 4.2 & 4.3 FROM CITY OF DANA POINT LOCAL IMPLEMENTATION PLAN

4.2 AUTHORITY TO CONTROL POLLUTANT DISCHARGES

The City's Water Quality Ordinance is the principal legal foundation of the City's water quality/pollution prevention program. This legal authority enables the City to:

- Control the contribution of pollutants in discharges of runoff associated with industrial and construction sites;
- Prohibit all identified illicit discharges not otherwise allowed;
- Prohibit and eliminate illicit connections to the MS4;
- Control the discharge of spills and dumping or disposal of materials other than storm water into its MS4;
- Require compliance with conditions in the City's ordinance, permits, contracts, or orders;
- Utilize enforcement mechanisms to require compliance with storm water ordinances, permits, contracts, or orders;
- Control the contribution of pollutants from one portion of the MS4 to another portion of the MS4 through interagency agreements among other MS4 owners;
- Carry out all inspections, surveillance, and monitoring necessary to determine compliance and noncompliance with the local ordinance and permits with this Order, including the prohibition on illicit discharges to the MS4;
- Require the use of Best Management Practices (BMPs) to prevent or reduce the discharge of pollutants into the MS4s from storm water to the maximum extent practicable (MEP); and
- Require documentation on the effectiveness of BMPs implemented to reduce the discharge of storm water pollutants to the MS4 to the Maximum Extent Practicable (MEP).

4.3 OTHER CITY OF DANA POINT POLLUTION PREVENTION CODES/ORDINANCES

In addition to the City's Water Quality Ordinance, there are other City ordinances contained in the Dana Point Municipal Code (DPMC), that addresses water quality protection, pollution prevention, and contribute to the comprehensive water quality/pollution prevention program. Other complimentary codes are noted in **Table 4.1**.

Table 4.1: City of Dana Point Pollution Prevention Related Codes

Title	Chapter	Name	Section	Content
6: HEALTH & SANITATION	6.03.151	Industrial Waste Disposal	Dumping of Waste Unlawful	Prohibits dumping or discharging industrial waste
	6.10.030	Integrated Waste Management	Solid Waste Removal	Requires collection of solid waste, at a minimum of once per week
	6.10.230	Integrated Waste Management	Self-haulers and Gardeners - Disposal at Authorized sites, Reporting Requirements	Prohibits spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment, including discarding of barrels, containers and other closed receptacles.
	6.10.270	Integrated Waste Management	Clean-Up Responsibility	Requires that each person shall be responsible for the cleanup of any and all solid waste and/or recyclables which that person has generated, deposited, released, spilled, leaked, pumped, poured, emitted, emptied, discharged, injected, dumped or disposed into the environment.

Title	Chapter	Name	Section	Content
6: HEALTH & SANITATION	6.14.002	Nuisances, General	Public Nuisances Designated	• Prohibits accumulation of dirt, litter, feces or debris on sidewalks, parking lots, landscaped or other areas. • Prohibits any property with accumulation of grease, oil, or other hazardous material on paved or unpaved surfaces, driveways, buildings, wall or fences , or from which any such material flows or seeps on to any public street or property. • Prohibits any area with lack of turf, planted material, rock, or other ground covering, so as to cause excessive dust or allow the accumulation of debris. • Prohibits dumping of any waste matter on public or private property. • Prohibits the depositing or dumping of rocks, dirt, or debris on public or private property.
	6.15.001	Landscape & Maintenance of Vacant Property in Commercial Districts	Landscaping of Vacant Property	Vacant property in commercial districts must be adequately landscaped and irrigated.

Title	Chapter	Name	Section	Content
6: HEALTH & SANITATION	6.15.002	Landscape & Maintenance of Vacant Property in Commercial Districts	Landscape Standards	• Landscaping shall cover as much land as possible, reduce erosion, reduce glare, and reduce water run-off. • Encourages use of water-saving plants
	6.20.012	Regulations on Leaf Blowers	Regulations on Leaf Blower Operation	Prohibits dirt, dust, debris, leaves, grass clippings, cuttings, or trimmings to be blown or deposited on any land, lot, street, alley, or gutter.
	6.45	Anti-littering	N/A	It shall be unlawful for any person to throw, drop, cast, or deposit on any street, alley, sidewalk, or any other public premises, including, but not limited to, beaches, parks, fountains, ponds, bays, oceans, and other bodies of water or public areas, waste material of any kind including, without limitation, cigarette butts, cans, paper, paper containers, bottles, or any other form of waste matter, whether solid, hazardous, or special.
	6.46	Expanded Polystyrene Food Service Ware	N/A	Food vendors are prohibited from providing prepared food in disposable food service ware made of EPS.

Title	Chapter	Name	Section	Content
6: HEALTH & SANITATION	6.47	Plastic Carry-out Bags	N/A	No affected retail establishment shall provide plastic carry-out bags to customers at the point of sale. Reusable bags and recyclable paper bags are allowed alternatives.
	6.48	Vessel Ordinance	.010	Regulates the anchoring of vessels off the coast of Dana Point in order to prevent improper waste disposal, which was a concern for the water quality at Doheny State Beach and address safety concerns.
8: BUILDINGS & CONSTRUCTION	8.01.190	Grading & Excavation Control	Application	Requires compliance with State General Construction Permit.

Title	Chapter	Name	Section	Content
8: BUILDINGS & CONSTRUCTION	8.01.380	Grading & Excavation Control	Erosion Control and Water Quality Requirement Systems.	• Regulates excavation, grading, and construction • Slopes shall be prepared and maintained to control erosion • Requires temporary and permanent erosion control devices • Requires cleaning of paved streets during construction • Establishes design and construction requirements for desilting basins • Requires equipment and workers to be available for emergencies when rain is imminent
	8.01.400	Grading & Excavation Control	Erosion Control & Water Quality Control Maintenance	Requires BMP maintenance
	8.02	California Building Code		Prescribes regulations for the erection, construction, enlargement, alteration, repair, improving, removal, conversion, demolition, occupancy, equipment, use, height, area, and maintenance of all buildings and structures, including the new Green Building Codes, effective Jan 1, 2011
	8.16	Uniform Plumbing Code	Chapter 10	Requires Grease Trap/Interceptors for new/improved restaurants

Title	Chapter	Name	Section	Content
8: BUILDINGS & CONSTRUCTION	8.24	Uniform Fire Code		Prohibits the discharge of any waste liquid containing crude petroleum or its products into or upon any drainage canal or ditch, storm drain, sewer, or upon the ground
9: WATER EFFICIENT LANDSCAPE STANDARDS AND REQUIREMENTS	9.55	Water Efficient requirements per AB1881	N/A	• Establishes requirements for planning, design, installation, and maintenance of water efficient landscapes for new construction and redevelopment (runoff prevention is a focus) • Establishes a maximum applied water allowance with goal of reducing to lowest practical amount. • Establishes water management practices and water waste prevention for existing landscapes.
10: ANIMAL CONTROL, WELFARE & LICENSING REQUIREMENTS	10.06.050	Animals At Large	Excreta Nuisance Prohibited	Prohibits leaving excreta in any public park, beach, sidewalk, public property, and private property other than that of the animal owner
12: VEHICLES & TRAFFIC	12.08.022	Parking Restrictions for City Streets	Repair, Dismantling, Greasing, Etc. Prohibited Upon Streets	Prohibits repair or maintenance of vehicles on any public street, unless emergency

Title	Chapter	Name	Section	Content
12: VEHICLES & TRAFFIC	12.08.024	Parking Restrictions for City Streets	Washing or Polishing for Hire Prohibited on Streets	No person shall wash or polish any vehicle in any public street when a charge is made for service
13: PARKS & RECREATIONAL FACILITIES	13.04.100	Parks & Recreational Facilities Regulations	Refuse, Trash and Litter	Prohibits littering in parks
	13.04.105	Parks & Recreational Facilities Regulations	Prohibition of Smoking in Public Parks	Prohibits smoking in public parks
	13.04.110	Parks & Recreational Facilities Regulations	Advertising Matter	Prohibits distribution of advertising media in parks on trees, without approval of City Manager
14: STREETS & SIDEWALKS	14.01.150	Streets and Sidewalk Code	Sandbags Required on Worksite	Require catch basin protection
	14.01.270	Streets and Sidewalk Code	Soil or Debris Obstruction	Prohibits deposit of soil or debris and requires removal by the responsible party.
	14.01.280	Streets and Sidewalk Code	Oil Petroleum & Other Hazardous Materials	Prohibits deposit of any oil, other liquid petroleum content, or other hazardous materials on any public highway, street or alley.

Title	Chapter	Name	Section	Content
15: WATER & SEWERS	15	Storm Water & Urban Runoff Pollution Controls	N/A	• Prohibits non stormwater discharges, including irrigation runoff • Reduces pollutant loads from storm water to Maximum Extent Practicable • Establishes minimum requirements for storm water management, including source controls • Establishes requirements for development projects • Prohibits Illicit connections.

EXHIBIT 2

SECTION 2.3 & 2.4 FROM CITY OF DANA POINT LOCAL IMPLEMENTATION PLAN

2.3 CITY INTERNAL COORDINATION/IMPLEMENTATION

The City's Water Quality Engineer is the water quality program manager and is the main point of contact for correspondence and interaction with other agencies regarding the implementation of the program. Numerous staff in a variety of City departments have roles and responsibilities that help provide for a comprehensive water quality program. Please refer to **Exhibit 2.3** for the City's Simplified Schematic of Water Quality Program Implementation Roles & Responsibilities for a summary of City staff's roles and responsibilities to comply with the various components of the Permit.

Departments, divisions, and various water quality program related functions and activities are summarized below:

Mayor, City Council, and City Council Appointed Water Quality Subcommittee

- Adopt ordinance revisions, as necessary, to carry out MS4 Permit requirements
- Secure fiscal resources and approve budgets
- Provide public participation at City Council meetings
- Review and approve related policies and plans, as needed
- Enter into formal agreements with Co-permittees to define management structure, responsibilities, cost sharing, and decision-making procedures for implementation of the MS4 Permit

City Attorney

- Draft and approve ordinances and assist with enforcement as needed
- Ensure and certify adequate legal authority

City Manager/Assistant City Manager

- Chief Administrative Officer of the City
- Coordinates the implementation of the City Council policy decisions and the initiation of all intergovernmental operations of the City
- Directs the various departments and providing guidance in the implementation of the mandates of the City Council
- Delegate signatory authority to specific staff representatives: Senior Water Quality Engineer & Director of Public Works & Engineering (**Exhibit 2.6)**

- Participate in City Manager's Water Quality Committee

Public Works – Water Quality

- Has delegated signatory authority/Duly Authorized Representative to Senior Water Quality Engineer & Director of Public Works & Engineering (**Exhibit 2.6**)
- Manage the Water Quality Program
- Coordinate with Principal Permittee (County of Orange)
- Maintain inventory and conduct inspections and enforcement of existing industrial facilities
- Maintain inventory and conduct inspections and enforcement of existing high priority commercial facilities
- Maintain inventory and conduct inspections and enforcement of existing residential areas
- Responsible for enforcement of municipal areas and activities, when required
- Provide enforcement support for construction activities
- Respond to public inquiries regarding water quality issues
- Implement Illicit Discharge Detection and Elimination program, including dry-weather monitoring, investigation, enforcement, and assist in spill response
- Coordinate and ensure appropriate training of municipal personnel
- Conduct outreach and education for various audiences such as residents, general public, business owners, and school children
- Maintain the structural post-construction BMP inventory and oversee maintenance tracking activities
- Coordinate help to ensure implementation of MS4 Permit requirements and LIP Programs by City departments
- Prepare annual reports
- Assists with coordination of annual beach and creek clean up(s)
- Report non-compliant sites, including SWRCB Construction General Permit,

  Order 2012-0006-DWQ (CGP) non-filers
- Modify development requirements in Water Quality Management Plan (WQMP), as needed
- Review project for proper implement development requirements consistent with WQMP and the MS4 Permit
- Responsible for Hydromodification Plan implementation
- Assist with existing development enforcement for BMP compliance

- Review shared budgets and prepare internal water quality budget
- Oversee operation and maintenance of Salt Creek Ozone Treatment Facility
- Oversee agreements, permits, and monitoring of City diversions
- Assists in enforcement of Water Quality Ordinance
- Assists in inspection and enforcement of construction site BMPs
- Participates in watershed management activities including San Juan Creek Total Maximum Daily Loads (TMDL) and South Orange County Watershed Management Area (SOCWMA) Programming
- Coordinate actions/procedures with other key City staff members to keep trash and debris out of storm drains and waterways

Public Works – Capital Improvement Projects & Construction Division

- Ensure that public projects meet water quality development standards
- Oversee projects for compliance with erosion control requirements
- Manage City GIS system

Public Works – Streets Division

- Administer street sweeping program
- Operation and maintenance of MS4 and City-owned structural post construction controls
- Provide information for JRMP document updates and JRMP Annual Reports
- Manage pesticides, herbicides, and fertilizers, as applicable
- Assist in maintenance of City GIS system
- Ensure Public Works field staff implement minimum BMPs
- Manage City storm drain stenciling program
- Manage litter control program for City streets and facilities
- Manage City BMPs including inlet filters, diversions, media filters, and trash separation units
- Maintain the City MS4 system

Public Works Department - Administration Division

- Oversee contracts with contractors regarding solid waste disposal and Household Hazardous Waste activities
- Oversee budgets, purchase orders, and contracts
- Provide information for JRMP document updates and JRMP Annual Reports

- Assist in acquisition of education materials to support the goals of the LIP
- Update the City website as needed to support water quality division efforts

Community Services & Parks – Parks Division

- Manage pesticides, herbicides, and fertilizers
- Maintain inventory of municipal areas
- Oversee landscaping activities for City facilities (including irrigation)
- Provide information for JRMP document updates and JRMP Annual Reports
- Implement and maintain BMPs at City parks
- Contribute to education and outreach for municipal personnel
- Ensure Parks field staff implement minimum BMPs
- Implement Integrated Pest Control Policy (IPM)
- Manage litter control program at parks and City medians

Facilities Division

- Provide general, routine maintenance, as well as BMP implementation and maintenance to select City-owned buildings
- Ensure facility staff and contractors implement minimum BMPs

Public Works Department – Engineering Division

- Maintain grading permit construction site inventory
- Verify coverage under State General Construction Permit, when applicable
- Verify coverage under State Industrial General Permit during application process
- Oversees construction BMP inspections and regulates construction sites regarding erosion, structural BMPs, and other site management activities
- Assists in enforcement at construction sites
- Contribute to education and outreach for construction audience
- Provide information for JRMP document updates and JRMP Annual Reports
- Assist in the modification development requirements in WQMP, as needed
- Assist in the implementing development requirements consistent with WQMP
- Maintain inventory of grading permits
- Support structural post-construction BMP compliance and maintenance tracking
- Contribute to education for new development and construction activities

- Provide information for JRMP document updates and JRMP Annual Reports

Community Development Department – Planning Division

- Receive and review development and redevelopment applications
- Coordinate with Water Quality Program Manager to educate and assist applicants in implementing the development water quality requirements
- Responsible for updating the City's General Plan and Environmental Review process, including CEQA and Local Coastal Program
- Responsible for ensuring that land uses in the City comply with the City's Municipal Code, General Plan, Council and Planning Commission policies, and State requirements
- Contribute to education and outreach for new development
- Provide information for JRMP document updates and JRMP Annual Reports

Community Development Department – Building Division

- Process building permits
- Inspect and enforce construction BMPs at building permitted sites
- Maintains building site inventory

Community Development Department - Code Enforcement Department

- Enforce the Dana Point Municipal Code, including the Water Quality ordinance
- Respond to complaints

Fire Department

- Implement and maintain BMPs at fire-related facilities and during fire-related activities (though County of Orange)
- Contribute to education and outreach for municipal personnel

Sheriff's Department (Police Services)

- Assist the City's Water Quality Program Manager and other City staff in addressing vehicle discharges (oil and other fluids) onto City streets

2.4 EXTERNAL COORDINATION/IMPLEMENTATION

As the City of Dana Point is a relatively small City, it is not "full service" and therefore some services are provided by other agencies or Contractors. The City coordinates closely with the external agencies to ensure compliance with the Permit. **Table 2.1**, Surface Runoff & Water Quality Program Related Services & Roles by Other Agencies, highlights the major water quality program related agencies and their main roles or services.

Table 2.1: Surface Runoff and Water Quality Related Services & Roles by Other Agencies

Role/Services Provided	Agency(ies)
Water distribution/maintenance	South Coast Water District Moulton Niguel Water District San Juan Capistrano Utilities Department
Sanitary Sewer distribution/maintenance, including public and private sewer spill response	South Coast Water District Moulton Niguel Water District San Juan Capistrano Utilities Department
Law Enforcement	Orange County Sheriff
Fire protection and related activities services to the City, including Hazardous Material related matters. Own & operate Stations 29 & 30 in Dana Point.	Orange County Fire Authority
• Food facilities inspections, • Used Oil Program, • inspects all hazardous waste generators (as CUPA)	Orange County Health Care Agency
Maintenance of the Salt Creek & San Juan Creek flood control channels	Orange County Flood Control District
Owns & operates SOCWA treatment plant, JB Latham plant, located North of Pacific Coast Highway on Del Obispo, in the City of Dana Point.	South Orange County Wastewater Authority (SOCWA)
Own & Operate 1-5 freeway	Caltrans
Own & operate Dana Hills High, R H Dana Elementary, Palisades Elementary & Capo Bus Yard	Capistrano Unified School District
Own & operate Salt Creek County Beach, Capistrano County Beach, Dana Point Harbor Baby Beach, Dana Strand Beach & Poche County Beach	Orange County Beaches, Harbors & Parks Department
Monarch Beach	Monarch Bay Association
Doheny State Park Beach	California State Parks
Capistrano Bay District Beach	Capistrano Bay District
Dana Point Harbor	Orange County
County of Orange Corporation Yard	County of Orange Public Works
Dana Point Branch Library	Orange County Public Libraries

Exhibit 2.3 City's Simplified Schematic of Water Quality Program Implementation Roles & Responsibilities

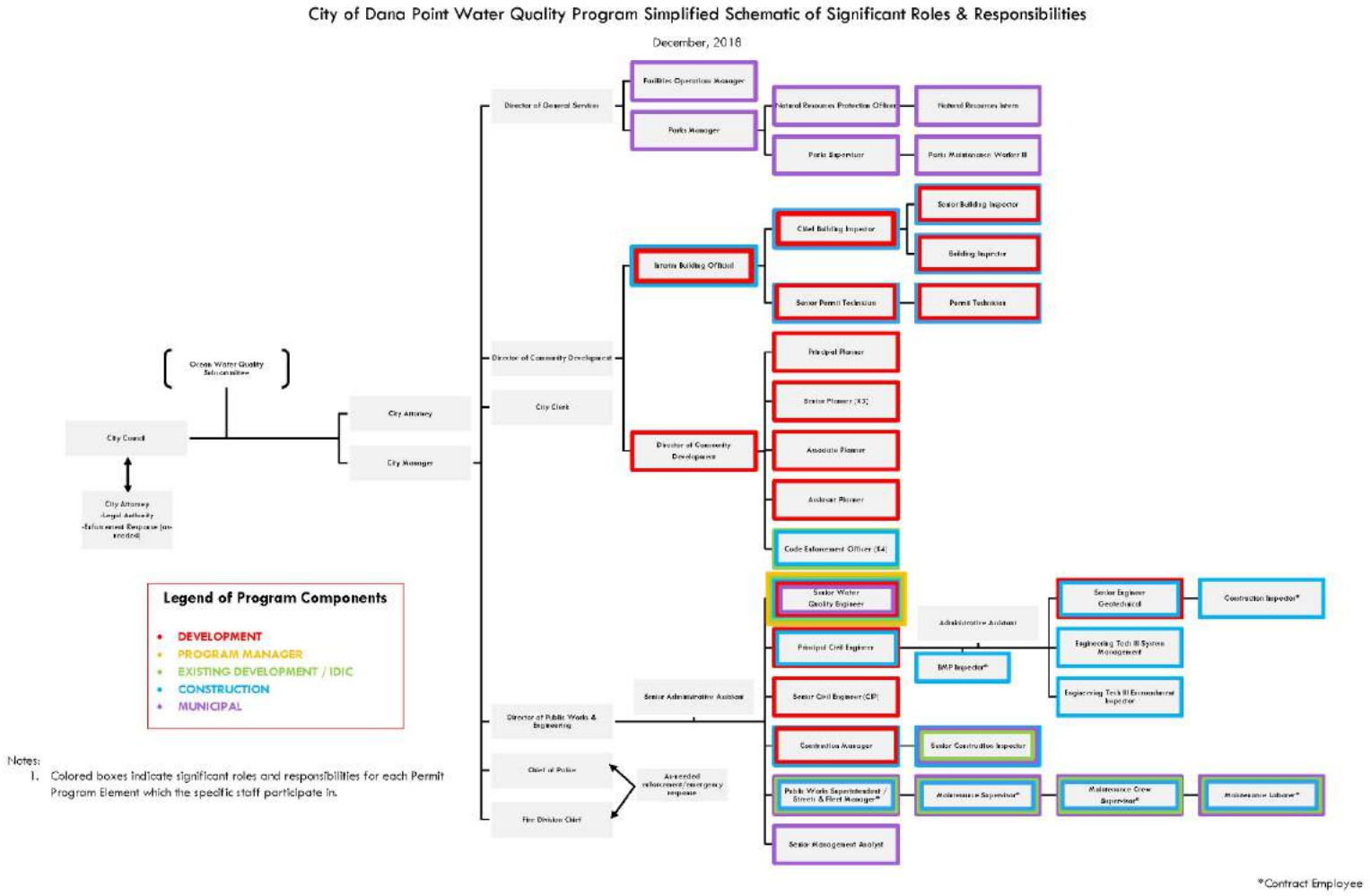


Exhibit 2.6 Delegation of signatory authority

CITY OF DANA POINT — **OFFICE OF THE CITY MANAGER**

July 3, 2018

Ms. Laurie Walsh
San Diego Regional Water Quality Control Board
2375 Northside Drive, Suite 100
San Diego, CA 92108-2700
Submitted via email:
Laurie.Walsh@waterboards.ca.gov

Bill Hereth / Gayleen Perreira
State Water Resources Control Board
Storm Water Section
P.O. Box 1977
Sacramento, CA 95812-1977
Gayleen.Perreira@waterboards.ca.gov &
bhereth@waterboards.ca.gov

Subject: City of Dana Point, PIN 219073
Duly Authorized Representative

Dear Ms. Walsh & Mr. Hereth & Ms. Perreira:

This is to notify you that the following positions have been designated as Duly Authorized Representatives for the City of Dana Point on all matters relating to the *National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the* San *Diego Region* (Order), NPDES Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100, NPDES No. CAS0109266, and for any subsequent MS4 Orders, Permits, or other water quality related orders, relating to the City of Dana Point.

- Senior Water Quality Engineer
- Director of Public Works & Engineering

The positions designated above possess authorized signature authority for all reports and/or submissions required by the City's NPDES permit(s), and for any other correspondence or information requested by the San Diego Regional Water Quality Control Board.

Respectfully,

Mike Killebrew
Assistant City Manager/Director of Administrative Services
City of Dana Point

CC: M. Denny, M. Sinacori, L.Zawaski, City of Dana Point

33282 Golden Lantern, Dana Point, CA 92629 • (949) 248-3500 • FAX (949) 248-9920
Internet: www.danapoint.org

Exhibit 4.I

Storm Water Management and Urban Runoff

Enforcement Response Plan

CITY OF DANA POINT

STORM WATER MANAGEMENT AND URBAN RUNOFF

ENFORCEMENT RESPONSE PLAN

I. INTRODUCTION

The City of Dana Point (City) controls pollutant discharges into and from its storm drain system within its jurisdiction through enforcement of its Water Quality Ordinance, Municipal Code, Chapter 15.10 Storm Water/Surface Runoff Water Quality; its Grading Ordinance, Municipal Code, Chapter 8.01 Grading and Excavation Control; and certain other complimentary Municipal Code provisions identified in Section 4 of the City's Local Implementation Plan (LIP) (referred to collectively herein as the City's Ordinances).

Unless otherwise defined in this Enforcement Response Plan (ERP), all capitalized terms used in this ERP are defined in the Water Quality Ordinance or the LIP.

This ERP works in conjunction with the City's Ordinances as part of the City's efforts to effectively administer the storm water quality control programs described in the Drainage Area Management Plan (DAMP), the LIP, and the South Orange County Water Quality Improvement Plan (WQIP), and is intended to be consistent with these programmatic documents.

This ERP describes the applicable approaches and options the City takes to investigate and enforce violations of the City's Ordinances in order to achieve compliance with the requirements of the National Pollutant Discharge Elimination System (NPDES) Permit (Permit) with respect to Illicit Discharge Detection and Elimination, Development Planning, Construction Management, and Existing Development. It is intended to provide guidance to Authorized Inspectors, Enforcing Attorneys, and other City personnel responsible for implementing the Water Quality Ordinance and the City's storm water quality control programs in order to assist them to take appropriate, adequate, consistent, and timely enforcement actions for the protection of the environment and public health, safety and welfare.

This ERP was developed in support of the City's Ordinances, and is not intended to support the enforcement of requirements under the State General Industrial and General Construction Permit Programs, which are subject to enforcement by other state and regional authorities.

II. OVERVIEW OF ENFORCEMENT OPTIONS AND APPROACHES TO RESPONDING TO NONCOMPLIANCE

The goals of the City's enforcement program include the following:

- To educate the regulated community.
- To achieve compliance with the laws and regulations within the regulated community.
- To return violators to compliance in a timely manner and eliminate any threats due to noncompliance.

- To initiate and conclude enforcement activities in a timely manner.
- To provide consistency in responding to violations.

In selecting enforcement options, the City strives to ensure that violations of a similar nature are subjected to similar-types of enforcement remedies. Nonetheless, a more severe enforcement option may be selected when a violator has either a history of noncompliance or has failed to take good faith actions to eliminate continuing violations or to meet a previously imposed compliance schedule. Authorized Inspectors should review enforcement options with the Enforcing Attorney to insure that evidence is collected and delivered in a timely fashion.

The City typically employs a tiered, escalating enforcement system. However, the City reserves the right to use whatever tools it deems most appropriate for a given situation, as dictated by the specifics of each case. The use of a progressively more severe enforcement option is referred to in this ERP as "Escalated Enforcement." Whether a particular method of enforcement constitutes "Escalated Enforcement" is specified below.

A. Criteria for Determining Appropriate Response to Noncompliance

The enforcement approach taken by the City in response to a specific incident of noncompliance is determined on a case-by-case basis and depends on a variety of factors, including the severity of the violation and the knowledge or intent, level of cooperation, and compliance history of the responsible party.

1. Severity of the Violation

Violations are evaluated against the severity of the noncompliance and the potential or actual threat to public health or the environment created by the noncompliance. The severity of a violation is generally the most important factor in determining the appropriate level of enforcement response. The severity of a violation will depend on a number of factors, including the duration and frequency of the event, the type and amount of the pollutants discharged, and the impact on public health and the environment. Violations that do not pose an immediate or significant threat to public health or the environment, are isolated or infrequent, and/or are short in duration will typically be addressed initially through lower level enforcement actions, such as Verbal Warnings, Notices of Violation (also referred as Notices of Noncompliance), or Administrative Compliance Orders. However, higher level Escalated Enforcement responses will be utilized for violations that pose an immediate and significant threat to human health or the environment or which are continuous, frequent, and/or of a long duration.

2. Knowledge or Intent of the Responsible Party

The responsible party's knowledge of a violation or regulations being violated are also taken into account when evaluating the appropriate enforcement approach to take. Where a violation is not severe and has occurred unknowingly, the initial enforcement response will typically consist of an Education Letter, Verbal Warning, or Notice of Noncompliance. However, negligent or willful noncompliance will warrant higher level administrative or civil Escalated Enforcement action or Criminal Enforcement.

3. Level of Cooperation

A responsible party's willingness to cooperate and to undertake good faith efforts to maintain compliance or eliminate noncompliance may also be considered when determining the appropriate enforcement response. "Good faith" means that the responsible party has an honest intention to remedy its noncompliance, coupled with actions that give support to this intention. While a responsible party's good faith and willingness to cooperate may be taken into account in determining the appropriate type of enforcement response, it does not eliminate the need for enforcement action, and should not be used to mitigate an enforcement response to such an extent as to permit actual or threatened harm to public health or the environment.

4. Compliance History

When evaluating the level of enforcement action to be taken for a violation, the City reviews and considers the compliance history of the responsible party. If a pattern of recurring violations is observed, or if a responsible party has failed to correct violations noted in a prior enforcement action, the City will use Escalated Enforcement.

B. Initial Methods of Achieving Voluntary Compliance

1. Education Letters

In certain limited circumstances, the City will issue an Educational Letter advising a property owner, business, or resident of their legal obligations prior to, or in lieu of, pursuing administrative, civil, or criminal enforcement. An Educational Letter provides information regarding the requirements of City's Ordinances and the steps that need to be taken to comply with them. An Educational Letter may be appropriate under the following circumstances:

- Where an Authorized Inspector receives a complaint or information concerning noncompliance that the Authorized inspector believes to be valid, but the Authorized Inspector does not have sufficient evidence to substantiate that a violation of the City's Ordinances has occurred.

- Where a violation has been caused by a contractor hired by a property owner, business, or resident without the knowledge or consent of the property owner, business, or resident, and the City may pursue enforcement against the contractor.

In these circumstances, the Authorized Inspector will document that the Educational Letter has been provided, and this documentation can be used as evidence to support enforcement action in the event of continued or future similar violations at the same site.

2. Verbal Warnings

A Verbal Warning is often the initial method used by the City to request corrective action and enforce compliance with the City's Ordinances. A Verbal Warning may be utilized where there is no history of noncompliance and the violation or noncompliance is relatively minor and can be quickly and easily corrected. In such cases, a Verbal Warning may be sufficient to achieve immediate correction of a violation. Where an Authorized Inspector issues a Verbal Warning, he/she will document the violation and the name and position of the person(s) notified in the inspection file. A specific time frame for correcting the problem and a follow-up inspection date will also be documented by the Authorized Inspector. In cases, where the issue is immediately abated while the Authorized Inspector is present on

site, a case may not be created as no follow-up will be necessary. In other instances, where the issue was observed as part of a designated inspection, and the issue was immediately addressed, the issue and abatement actions will be noted as part of the inspection, and a separate case will not be created.

C. Administrative Enforcement Responses

1. Notice of Noncompliance or Notice of Violation

After a verbal warning, the Notice of Noncompliance/Notice of Violation is the least severe administrative enforcement response utilized by the City for violations of the Water Quality Ordinance. A Notice of Noncompliance/Notice of Violation constitutes a basic written request that a contractor, facility operator, property owner, or resident rectify a condition causing or threatening to cause noncompliance with the City's Ordinances. A Notice of Noncompliance/Notice of Violation is the appropriate enforcement tool in the following circumstances:

- The violation or threat is insignificant and short in duration.
- The violation or threat is an isolated incident.
- The violation or threat does not affect and will not harm human health or the environment.
- The responsible party is cooperative and has indicated a willingness to readily correct the violation.
- The violation occurred unknowingly.
- A prior Verbal Warning was given, but the deficiency that was noted in a prior Verbal Warning has not been corrected within the specified timeframe or by the next inspection.

A Notice of Noncompliance/Notice of Violation (a) identifies the provision(s) of the City's Ordinances and/or relevant permit that has been violated, (b) describes the violation/deficiency to be corrected and corrective action(s) required, (c) includes a compliance date by which the violation must be corrected, (d) sets a date for a follow-up inspection (if applicable), and (e) states that continued noncompliance may result in additional enforcement actions.

A responsible party may appeal a Notice of Violation and request an administrative hearing before a hearing officer in accordance with the procedures set forth in the Water Quality Ordinance.

Generally, a Notice of Noncompliance/Notice of Violation will be given to a responsible party prior to the use of other progressively severe enforcement options. However, a Notice of Noncompliance/Notice of Violation will not be the first enforcement method used if egregious or unusual circumstances indicate that a stronger enforcement tool is needed.

2. Administrative Compliance Order

An Administrative Compliance Order is a progressively more severe enforcement response than a Notice of Noncompliance. The Administrative Compliance Order is an appropriate enforcement tool in the following circumstances:

- The violation or threat is not significant and short in duration.
- The violation or threat is infrequent.
- The violation does not pose an immediate threat to human health or the environment.
- An actual condition of noncompliance exists, but the condition cannot be remedied within a relatively short period of time.
- The responsible party has indicated willingness to come into compliance by meeting milestones established in a reasonable schedule.
- The violation is not willful.
- A prior Verbal Warning and/or Notice of Noncompliance/Notice of Violation has been insufficient to achieve compliance.

An Administrative Compliance Order may include the following terms and requirements:

- Specific steps and time schedules for compliance as reasonably necessary to eliminate an existing prohibited discharge or prevent the imminent threat of a prohibited discharge;
- Specific steps and time schedules for compliance as reasonably necessary to discontinue any illicit connection;
- Specific requirements for containment, cleanup, removal, storage, installation of overhead covering, or proper disposal of any pollutant having the potential to contact stormwater runoff; and
- Any other terms or requirements reasonable calculated to prevent imminent threat of or continuing violations, including, but not limited to, requirements for implementation of, and compliance with, appropriate BMPs.

An Administrative Compliance Order may constitute Escalated Enforcement in those instances where a previously issued Verbal Warning or Notice of Noncompliance/Notice of Violation has failed to achieve compliance.

3. Cease and Desist Order

A Cease and Desist Order may be issued to obtain immediate compliance with the Water Quality Ordinance and may order immediate cessation of any Illegal Discharge, Illicit Connection, or other violation; immediate containment or diversion of any impermissible flow of water off the property; and/or immediate cleanup of any area affected by a violation. The Cease and Desist order may also be appropriately issued as a first step in ordering the removal of nuisance conditions that threaten to cause an unauthorized discharge of Pollutants if exposed to rain or surface water runoff. The Cease and Desist Order is an appropriate enforcement tool in the following circumstances:

- The violation or threat is immediate in nature and may require an emergency spill response or immediate nuisance abatement if left unattended.
- The violation or threat exhibits a potential situation that may harm human health or the environment.
- The Authorized Inspector's contacts with the responsible party indicate that further authority of the City may need to be demonstrated before remedial action is forthcoming.
- The Authorized Inspector's prior enforcement actions have not obtained a favorable response.

A person issued a Cease and Desist Order is entitled to an administrative hearing before a hearing officer within 5 business days in accordance with the procedures set forth in the Water Quality Ordinance.

A Cease and Desist Order constitutes Escalated Enforcement in those instances where a previously issued Notice of Noncompliance and/or Administrative Compliance Order has failed to achieve compliance.

4. Administrative Nuisance Abatement

In instances where Escalated Enforcement actions fail to achieve compliance and there is a continuing threat to water quality, the City may itself enter the property, abate the condition(s) causing the violation, and restore the area. Before pursuing Administrative Nuisance Abatement, the City will notify the property owner and/or occupant and seek their consent. Where consent is not given or cannot be obtained, the City generally must obtain an inspection / abatement warrant from a court in accordance with State law before entering private property. However, where a nuisance condition on private property constitutes imminent danger to public safety or the environment and deemed a nuisance pursuant to Government Code Section 38771, the City is authorized to take any and all enforcement action as provided for in accordance with Chapter 6.14 of the City Municipal Code to abate said nuisance.

Administrative Nuisance Abatement constitutes Escalated Enforcement.

5. Invoice For Costs

The Water Quality Ordinance authorizes an Authorized Inspector to deliver an Invoice for Costs to any responsible party for the actual costs incurred by the City in issuing and enforcing any Notice of Noncompliance, Administrative Compliance Order, Cease and Desist Order, or Administrative

Abatement order. A responsible party may appeal an Invoice for Costs and request an administrative hearing before a hearing officer in accordance with the procedures set forth in the Water Quality Ordinance. If the responsible party fails to either pay or successfully appeal the Invoice for Costs, then the Enforcing Attorney may institute collection proceedings in accordance with State law.

Delivery of an Invoice for Costs does not constitute Escalated Enforcement.

6. Stop Work Orders

A Stop Work Order is an Escalated Enforcement tool for active land development projects. A Stop Work Order is a written order prohibiting further construction or site development activity until compliance has been achieved. The Stop Work Order is an appropriate enforcement tool in any of the following circumstances:

- If prior written notices or orders have failed to result in compliance or correction of identified violations.
- If the developer/contractor has not complied with the requirements of their building and/or grading permit.
- If an observed violation poses a significant threat to water quality (such as a failure of BMPs resulting in a significant release of sediment or other pollutants off site).

A Stop Work Order will be issued by the inspector or the appropriate official. Stop work orders prohibit further construction activity until the problem is resolved and provide a time frame for correcting the problem.

The Stop Work Order will describe the violation and specify what corrective action must be taken. A copy of the Stop Work Order will be given to the contractor's project supervisor and placed in the active inspection file. For a private construction project, a copy of the Stop Work Order will also be sent to the owner/developer. To restart work once a Stop Work Order has been issued, the contractor's project supervisor must request the City's inspector to re-inspect the project and verify that the deficiencies have been satisfactorily corrected. If the City inspector is satisfied with the corrections, the inspector may sign off on that phase of the project, and work may proceed.

A Stop Work Order constitutes Escalated Enforcement.

7. Permit Revocation or Denial

Violations of the City's Ordinances may be grounds for the suspension or revocation of City issued permits, licenses or other approvals after notice and an opportunity for hearing. For instance, in severe cases of noncompliance, or significant discharges relating to development and/or construction activities, the City revoke grading and/or building permits or other approvals for a development project that a contractor/developer is working under for the project or deny future permits on the project. The responsible party would then have to re-apply for permits and meet any requirements that the City may place on the project. Suspension or revocation of permits or other approvals must be conducted in accordance with the procedures described in the City's Municipal Code. City Staff should consult with the Enforcing Attorney before proceeding with the suspension, revocation or denial of a permit or development approval.

Suspension or revocation of a permit constitutes Escalated Enforcement.

8. Enforcement of Contracts

If a contractor is performing work for the City, then the City may use the provisions within the contract for enforcement of noncompliance. Such contract provisions may allow the City to withhold payment(s), require bonds, apply monetary penalties, order work stopped (without time penalties), or terminate the contract if the contractor performing the work does not comply with all appropriate permits, laws, regulations and ordinances.

Enforcement of Contracts constitutes Escalated Enforcement.

9. Administrative Citations

The City's authorized enforcement staff may issue administrative citations imposing administrative fines for specified violations of the City's Ordinances in accordance with Chapter 1.10 Administrative Citations of the City's Municipal Code. The fine amount for an initial violation may be relatively small for a first offense, but repeated violations of the same type will result in escalated fines, up to a maximum of $1,000 per violation per day. When an Administrative Citation is issued, the responsible party may request a hearing to contest the determination that a violation has occurred in accordance with Chapter 1.10 of the City's Municipal Code.

D. Criminal Enforcement

In addition to the administrative enforcement actions described above, the Enforcing Attorney is authorized to file criminal actions to enforce the City's Ordinances. Criminal prosecution is generally the last step taken to stop a condition of noncompliance; however, in some limited cases, criminal enforcement may be appropriate as a first step in enforcement if the facts indicate that the violation is severe, willful and egregious. Criminal prosecution will be appropriate if information or events indicate that noncompliance is (i) willful, (ii) fails to comply with the best management practices imposed on a New Development or Significant Redevelopment project, (iii) continues after notice of noncompliance is received, or (iv) is a direct attempt to conceal a violation of the City's Ordinances. Criminal prosecution may also be utilized for egregious violations which are the result of negligent rather than willful conduct.

Circumstances indicating that criminal, rather than administrative, enforcement measures should be considered include the following:

- There is strong evidence that the responsible party has willfully violated the City's Ordinances and/or has intentionally disregarded legal requirements.
- There is a significant threat of environmental harm as a result of the violation.
- There is actual sustained environmental harm as a result of the violation.
- The discharge or event of noncompliance is continuing or has been long in duration.
- No immediate remedy for the violation is available.
- There have been numerous previous violations by the same responsible party.

Where it is determined that the available facts warrant criminal enforcement in a particular case, additional evidence will often need to be collected to support a criminal prosecution, and the City may need to obtain a criminal inspection warrant from a court. City staff should consult with the Enforcing Attorney early in the process to ensure proper procedures are followed. Where criminal enforcement is indicated, authorized City personnel may cause issuance of a criminal citation to the offending party pursuant to Penal Code §853.5, §853.6, and §853.9. The citation shall include: (i) the name and address of the violator; (ii) the provisions of the City's Ordinances violated; and (iii) the time and place of required appearance before a magistrate. The responsible party must sign the citation thereby promising to appear. If the cited party refuses to sign the citation, the enforcement official may cause the arrest of the discharger with the assistance of law enforcement personnel, or may refer the matter to the Enforcing Attorney for issuance of a warrant for arrest.

At the discretion of the Enforcing Attorney, criminal violations of the City's Ordinances may be charged as either misdemeanors or infractions. Factors that the Enforcing Attorney may use in determining whether the misdemeanor is more appropriately treated as an infraction, rather than a misdemeanor, may include:

- The duration of the violation or threatened violation.
- The compliance history of the person, business or entity.
- The effort made to comply with an established compliance schedule.
- The existence of prior enforcement actions.
- The actual harm to human health or the environment from the violation.

Criminal Enforcement constitutes Escalated Enforcement.

E. Civil Judicial Enforcement

In addition to the administrative and criminal enforcement options discussed above, the City may also pursue civil judicial enforcement of violations where appropriate.

1. Civil Injunction/Nuisance Abatement Action

Violations of the City's Ordinances that constitute a threat to the public health, safety and welfare are deemed a public nuisance, and the Enforcing Attorney may file a civil judicial action seeking preliminary or permanent injunctive relief to enjoin and/or abate a nuisance or other threatened or continuing noncompliance. Such an action may be appropriate where a continuing or emergency nuisance exists, and administrative and/or criminal enforcement options are insufficient to remedy the nuisance condition. In any such action, the City may seek recovery of its actual enforcement and abatement costs.

A Civil Injunction / Nuisance Abatement Action constitutes Escalated Enforcement.

2. Civil Damages Action

Pursuant to the Water Quality Ordinance, the City may bring an action for civil damages against a responsible party to recover (i) enforcement costs incurred by the City; (ii) costs incurred by the City in mitigating harm to the environment or reducing the threat to human health; (iii) damages for irreparable harm to the environment; and/or (iv) damages resulting from any trespass or nuisance occurring on public land or to the Stormwater Drainage System as a result of a violation of the Water Quality Ordinance.

III. Illicit Discharge Detection and Elimination Enforcement Component

This Section of the ERP describes the City's approaches to investigating, responding to, and enforcing noncompliance with the City's Ordinances related to Illegal Discharges and Illicit Connections.

A. Overview

The City's Water Quality Ordinance expressly prohibits Illegal Discharges and Illicit Connections (ID/ICs), and the City implements a comprehensive program for actively detecting, responding to, investigating and eliminating ID/ICs in an efficient and timely manner (ID/IC Program). The City's ID/IC Program is described in more detail in LIP Section 10.

An Illicit Connection is an undocumented and/or unpermitted physical connection from a facility to the Stormwater Drainage System. Illicit Connections are often associated with Illegal Discharges. Constructed (i.e., man-made) Illicit Connections include pipelines, conduits, inlets or outlets, connected impervious areas, channels or swales. Practical examples of constructed Illicit Connections include: (i) pipes that discharge onto adjacent property or into a water runoff area; (ii) facilities constructed adjacent to construction areas that allow dewatering runoff to flow to the storm water drainage system; or (iii) storm drain inlets that drain from outside wash areas directly into the Stormwater Drainage System.

An Illegal Discharge (or "Prohibited Discharge") is any discharge to the Stormwater Drainage System that is not composed entirely of stormwater and that is not covered by an NPDES permit. An Illegal Discharge refers to the disposal of non-stormwater materials such as paint or waste oil into the storm drain or the discharge of waste streams containing pollutants to the storm drain. Illegal Discharges typically are generated from poorly managed on-site operations, illegal dumping, contaminated stormwater discharges, and/or sewage or other materials spills.

Various site operations may produce Illegal Discharges, including releases of (i) process waters such as boiler blow down, rinse water, or chlorinated pool discharges; (ii) waste materials such as manufactured floatable materials, animal wastes from kennels or riding stables, or vehicle fluids (oils, coolants, etc.); and (iii) sand/gravel, cement, fertilizers, or pesticides from raw materials unloading and storage areas. Practical examples of problematic site operations include: (i) pressurized washing and steam cleaning areas; (ii) auto repair shops where operations occur out of doors in unprotected areas and no provision is made for preventing contamination from leaving the site; (iii) non-retail fueling areas where vehicle washing also occurs and runoff flows to storm drain areas; (iv) manufacturing storage yards for concrete materials where materials are uncovered and wash off flows directly to the storm drain; (v) construction locations where debris, materials, and silt flows off the construction site; and (vi) trauma scene clean-up.

Illegal dumping activities include intentional dumping of: (i) household wastes such as home, garden or yard debris, trash or rubbish, or household hazardous wastes; (ii) commercial wastes such as landscape

debris or soil, trash or rubbish, or hazardous wastes in drums or canisters; and (iii) animal or agricultural wastes such as manure, stock wastes, fruit and vegetable materials and animal carcasses. Practical Examples of illegal dumping activities could include: (i) home/yard debris dumped near a curb inlet to the stormwater drainage system; (ii) trash, drums or discarded materials left on creek or wash area banks; (iii) used oil dumped on the ground or into storm drains; and (iv) paint waste dumped on the ground or into storm drains.

Stormwater pollution can also occur as rain water is contaminated running off of impervious surfaces. Though the runoff is due to storm events, Illegal Discharges can occur from the following:

- Construction work on an exposed site where soils are being tracked onto the street and washed down the gutter.
- Construction or work on an exposed site where materials, such as sand, are migrating into the street gutter area either through non-concentrated exposure to water, such as sprinkler systems, or by actual contact with other runoff water.
- Petroleum contained soils in equipment servicing areas, which are exposed to gutter areas through tracking.
- Uncovered areas of stockpiled construction demolition materials.
- Outside storage of unsealed paint and solvent containers.
- Exposed truck loading docks with uncovered materials.
- Equipment storage yards without runoff controls.

Sewage spills may be the result of an accidental or irregular discharges of sewage from a sanitary sewer system or from private property tributary to a public sewerage system. Pursuant to the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (State Water Resources Control Board, Order No. 2006-0003) and San Diego Regional Board Order No. R9-2007-0005, South Coast Water District, Moulton Niguel Water District, and San Juan Capistrano Utilities Department are responsible for responding to, containing, and cleaning up sewage spills/incidents originating from their wastewater and sanitary systems, including systems that collect and convey wastewater to publicly owned treatment facilities. It is those agencies' standard operating policy to respond to all sewage spills/incidents from private systems as well. Each agency has implemented an overflow emergency response plan that is used during sewage spills/incidents.

In addition, the City's Plumbing and Building Codes and Ordinances require that private sewer laterals and septic systems be designed and operated in accordance with industry standards and require the proper maintenance of these facilities in order to minimize possible spills, breakages, and failures. The City enforces these requirements if a sewage spill from private property or another private source is, or cannot be, effectively remedied by the owner or other responsible party. The City may also issue enforcement actions pursuant to this ERP to any party responsible for a prohibited discharge into the City's MS4.

B. Investigating and Responding to Noncompliance

The City may become aware of potential Illegal Discharges or Illicit Connections through field observations, facility or construction site inspections, Water Quality Monitoring Program results, or complaints. The protocols the City follows for investigating, documenting, and responding to Illegal Discharges and Illicit Connections are described in more detail in Section 10 of the LIP.

If a complaint or information is received that indicates a potential ID/IC, an Authorized Inspector will conduct a field investigation. If evidence of an actual or threatened ID/IC is found as a result of an inspection, every effort is made to identify the responsible party and resolve the situation quickly.

Any Illicit Connection identified by the City during routine inspections is investigated. Appropriate actions are then taken to either approve undocumented connections by permit procedure or to pursue removal of those connections that are determined to be Illicit Connections and not permissible. If evidence of an Illegal Discharge is detected and the source does not appear to be evident, a source investigation may be conducted to determine if the discharge is being conveyed through an Illicit Connection.

Parties found to be responsible for an Illegal Discharge are required to clean up and remove Pollutants to the maximum extent practicable. Where a responsible party is cooperative and responds in a timely manner, lower level enforcement actions may be sufficient to ensure compliance. The failure of a responsible party to cooperate and/or perform required clean-up will result in immediate Escalated Enforcement action.

Sewage spills and spills of other types of harmful Pollutants may require immediate remedial action. In cases where a spill presents an immediate threat to the Stormwater Drainage System or to human health or the environment, and the City knows who the responsible party is, the City will direct the responsible party to immediately contain and commence clean-up of the spill. For all sewer spills, the City will contact the appropriate sewering agency to respond. For spills other than sewer spills, where the City is unable to identify the responsible party, or the responsible party is able to effectively respond to contain and clean-up the spill immediately, the City will respond through Control One and the Water Implementation Agreement to secure resources to ensure the spill is contained and mitigated, and will conduct a source investigation to identify the responsible party.

C. Enforcement Response Approaches

The nature of the City's enforcement response approach for ID/ICs is determined on a case-by-case basis and is based on factors such as severity of the violation or threat to human health or the environment, site-specific circumstances, and past compliance history. If the situation is determined to pose an immediate risk to public health or the environment, higher level Escalated Enforcement responses may be used immediately and, if needed, the City will respond itself to ensure the threat is eliminated in a timely and efficient manner.

If a non-sewage spill, illegal dumping, or other Illegal Discharge is determined to pose a threat to human or environmental health, the City will report this information to the Regional Board by phone or e-mail within 24 hours of the discovery followed by a written report within 5 days, as required by the NPDES Permit. The sewering agency will do all reporting relating to sewage spills, including to the Orange County Health Care Agency in accordance with California Health and Safety Code Section 5411.5, and

reports all sewage spills of 1,000 gallons or more from a public sewer system to the State Office of Emergency Services pursuant to California Water Code Section 13271 and the 23 CCR § 2250.

The City seeks to abate actual Illegal Discharges and hazardous materials spills as soon as reasonably possible. As required by the NPDES Permit, the City seeks to resolve all incidents of observed noncompliance within at least 30 calendar days, or prior to the next rain event, whichever is sooner. In cases where more than 30 days are required to resolve a violation and achieve compliance, the reasons why additional time is needed is documented and kept on file. If Escalated Enforcement is not used when compliance is not achieved within the required compliance period, the rationale for why Escalated Enforcement actions were not used will also be documented.

The following table provides a general overview of the City's enforcement response approach for ID/ICs. The descriptions in the Table as to when specific enforcement responses are used and appropriate timeframes for compliance are intended to be illustrative in nature and to provide general guidance to City enforcement staff, and are not intended to be exclusive or exhaustive. The City reserves the right to use whatever tools deemed most appropriate for a given situation, as dictated by the specifics of each case, and taking into account the factors described in Section II.A of this ERP.

Illicit Discharge Detection and Elimination Enforcement Approach

Enforcement Action	Use	Time Schedule to Achieve Compliance
Education Letter	• If suspect noncompliance, but lack sufficient evidence to substantiate it. • Use for business/resident where violation is by contractor and there is no history of noncompliance by business/resident.	Goal is to correct the situation and behavior.
Verbal Warning	• Use for threatened Illegal Discharges from poorly managed on-site operations, illegal dumping, contaminated water runoff, or spilled materials where there is no history of noncompliance and the violation is relatively minor and can be quickly and easily corrected.	Goal is to correct the violation immediately, if possible. If not, the compliance timeframe should be short and will depend on the nature of the potential threat to water quality. At a minimum, violation should be corrected within 30 calendar days or before the follow-up inspection or next predicted rain event, whichever is sooner.

Enforcement Action	Use	Time Schedule to Achieve Compliance
Notice of Noncompliance	• Use where a prior Verbal Warning was given, but the deficiency that was noted in a prior Verbal Warning has not been corrected within the specified timeframe or by the next inspection. • Use for threatened Illegal Discharges from Illicit Connections, poorly managed on-site operations, illegal dumping, contaminated water runoff, or spilled materials where the threat level is insignificant, there is no environmental harm, and the responsible party is cooperative and has already corrected, or is willing to readily correct, the condition causing the violation. • Use to order correction of conditions causing or contributing to an actual Illegal Discharge that has already ceased where the discharge occurred unknowingly, was an isolated incident, and was short in duration; the threat level is insignificant; there was no environmental harm; and the responsible party is cooperative and has shown a good faith effort to correct the condition causing the violation and to come into compliance.	Require immediate containment of spilled materials or Illegal Discharges, with a goal of completion of correction/cleanup within 24 hours. Conditions causing or contributing to an actual or threatened Illegal Discharge should be corrected within 30 calendar days or before the follow-up inspection or next predicted rain event, whichever is sooner. If more than 30 days is required to achieve compliance, then a written rationale must be documented and kept on file.

Enforcement Action	Use	Time Schedule to Achieve Compliance
Administrative Compliance Order	• Use where a prior Verbal Warning and/or Notice of Noncompliance has been insufficient to achieve compliance. • Use for threatened Illegal Discharges from Illicit Connections, poorly managed on-site operations, illegal dumping, contaminated water runoff, or spilled materials where the violations are not willful, the threat level is not significant, there is no immediate threat of environmental harm, and the responsible party has shown a good faith willingness to correct the condition causing the violation. • Use to order correction of conditions causing or contributing to an actual Illegal Discharge that has already ceased where there is no immediate threat to human health or the environment; the discharge was not willful, was not significant, and was infrequent or short in duration; the conditions causing or contributing to the Illegal Discharge cannot be remedied within a relatively short period of time; and the responsible party has indicated willingness to come into compliance by meeting milestones established in a reasonable schedule.	Require immediate containment of spilled materials or Illegal Discharges, with a goal of completion of correction/cleanup within 24 hours. Conditions causing or contributing to an actual or threatened Illegal Discharge should be corrected within 30 calendar days or before the follow-up inspection or next predicted rain event, whichever is sooner. If more than 30 days is required to achieve compliance, then a written rationale must be documented and kept on file.

Enforcement Action	Use	Time Schedule to Achieve Compliance
Cease and Desist Order	• Use to order immediate cessation of an Illegal Discharge or Illicit Connection. • Use to order immediate containment or diversion of any impermissible flow of water off of a site that poses a significant and/or immediate threat to water quality. • Use to order immediate cleanup of an area affected by an Illegal Discharge, sewage or materials spill, illegal dumping, or other violation. • Use to order immediate removal of nuisance conditions on property that threaten to cause an Illegal Discharge of Pollutants if exposed to rain or surface water runoff. • Use where lower level enforcement actions have not resulted in compliance and/or available information indicates that further authority of the City may need to be demonstrated before remedial action is forthcoming. • Use for recurring violations.	Generally, immediate. Where used other than to order immediate cessation of an actual or threatened ID/IC, the time schedule for compliance will vary based on the severity of the violation and will be determined on a case-by-case basis. In these circumstances, noncompliance should be corrected within 30 calendar days or before follow-up inspection or next predicted rain event, whichever is sooner. If more than 30 days is required to achieve compliance, then a written rationale must be documented and kept on file.
Nuisance Abatement / Spill Response	• Use for sewage or hazardous materials spills where there is a significant and immediate threat to human health or the environment. • Use where the responsible party has continually failed to comply with a previously issued compliance schedule.	Goal is immediate containment of spilled materials or Illegal Discharges, with a goal of completion of correction/cleanup within 24 hours.

Enforcement Action	Use	Time Schedule to Achieve Compliance
Administrative Citation	• May be used in addition to an Administrative Compliance Order or Cease and Desist Order where monetary sanctions will deter future violations. • May be used in lieu of an Administrative Compliance Order or Cease and Desist Order where a compliance schedule is unnecessary and will help deter future violations. • Use where an actual Illegal Discharge occurred, but ceased prior to other enforcement action. • Use where a prior Verbal Warning, Notice of Noncompliance, and/or Administrative Compliance Order has been insufficient to achieve compliance. • Use for recurring violations.	Time schedule for compliance will vary based on the severity of the violation and will be determined on a case-by-case basis. Conditions causing or contributing to an actual or threatened Illegal Discharge should be corrected within 30 calendar days or before the follow-up inspection or next predicted rain event, whichever is sooner. If more than 30 days is required to achieve compliance, then a written rationale must be documented and kept on file.
Enforcement of Contracts	• Use to address actual or threatened Illegal Discharges or Illicit Connections caused by City contractors.	Time schedule for compliance will be determined on a case-by-case basis.
Stop Work Order	• Use to order immediate cessation of construction or development activities where prior written notices or orders have failed to result in compliance or correction of identified violations. • Use to order immediate cessation of construction or development activities where a developer/contractor has not complied with the requirements of its building and/or grading permit. • Use to order immediate cessation of construction or development activities where if an observed violation at the site poses a significant threat to water quality (such as a failure of BMPs resulting in a significant release of sediment or other pollutants off site).	Effective immediately, all work, except work to remedy non-compliant situation, must cease.

Enforcement Action	Use	Time Schedule to Achieve Compliance
Permit Revocation / Denial	• Use in severe cases of noncompliance or significant Illegal Discharges relating to development and/or construction activities.	NA
Civil Action	• Use for violations that cause significant harm. • Use when response to administrative enforcement actions is inadequate or the responsible party fails to respond.	Time schedule for compliance will vary based on the severity of the violation and will be determined on a case-by-case basis.
Criminal Action	• Use in cases where the actual or threatened environmental harm from the violation is significant and there is strong evidence of willfulness or intentional disregard for legal requirements. • Use in cases where an Illegal Discharge, Illicit Connection, or related violation is frequent, ongoing, or long in duration and the responsible party has failed to respond to administrative enforcement actions. • Use where there is a history of repeated prior violations by the same responsible party. • Use where there has been a direct attempt to conceal an Illegal Discharge, Illicit Connection, or related violation.	Consult with Enforcing Attorney
Referrals	• Sites that fail to obtain state industrial or construction permits. • Sites that fail to comply with City enforcement actions. • Sites that discharge waste or hazardous wastes to receiving waters.	NA

IV. Development Planning Enforcement Component

This Section of the ERP describes the City's approaches to investigating, responding to, and enforcing noncompliance with permanent BMP implementation, operation and maintenance obligations associated with New Development and Significant Redevelopment.

A. Overview

The Water Quality Ordinance requires all New Development and Significant Redevelopment to be undertaken in accordance with the DAMP, the LIP, the City's New Development / Significant Redevelopment Program. In conjunction with the New Development / Significant Redevelopment Program, the City has established design standards for new development and significant redevelopment projects that require installation and implementation of permanent (post-construction) BMPs, including Low Impact Development (LID) techniques, hydromodification controls, source controls and treatment controls, to address the quality and quantity of stormwater runoff. These required BMPs are described in project-specific Water Quality Management Plans (Project WQMPs) and Non-Priority Project Water Quality Checklists (WQCs), which may be recorded, and which describe long-term BMP operation and maintenance requirements and identify the persons or entities responsible for funding and implementing ongoing BMP operation and maintenance. The New Development / Significant Redevelopment Program is more fully described in Section 7 of the LIP.

This Development Planning Enforcement Component describes the enforcement response approaches the City takes to ensure that required permanent BMPs are properly installed and implemented during construction and thereafter appropriately operated and maintained.

B. Investigating and Responding to Noncompliance

The City verifies required permanent BMPs are included in project designs through its development review and plan check process. All permanent structural BMPs must be shown on the grading and/or building plans, and building and/or grading permits will not be issued to allow construction to begin before all plans have been approved. In addition, Project WQMPs and WQCs must be approved by City before grading or building permits will be issued.

During a project's construction phase, City inspectors confirm that required structural BMPs are being constructed per plan during their routine inspections. If structural BMP construction or installation varies from approved plans, the City requires in-field corrections be made, or for the project engineer to confirm that revisions continue to comply with project requirements. Any proposed revisions must be approved by applicable City planning or engineering staff. Prior to grading or building permit close-out and/or the issuance of a certificate of use or a certificate of occupancy, the City will verify that all required permanent structural BMPs have been constructed and installed in conformance with approved plans and specifications and that, if applicable, and Operations and Maintenance (O&M) Plan for all structural BMPs has been prepared and approved by the City.

Once a development project has been completed, ongoing operation and maintenance of post-construction BMPs is verified through inspections or through review of submitted maintenance verification certifications. Where operation or maintenance deficiencies are discovered, they are documented and the responsible party is directed to take necessary corrective actions. Minor deficiencies and corrective actions may warrant resolution through Education Letters or documented Verbal Warnings, and if the responsible party performs all necessary corrective actions promptly, the case is closed and the resolution is documented. Where determined appropriate, the City will issue a Notice of Violation or Administrative Compliance Order setting forth required corrective actions as its initial enforcement response. Responsible parties are required to perform corrective actions and demonstrate that all necessary operations and maintenance activities have been completed through re-

inspection and/or submittal of appropriate documentation. Where initial enforcement actions fail to result in corrective action, the City will pursue Escalated Enforcement until compliance is achieved. The City's enforcement response approach for the Development Planning and Enforcement Component is described more fully below.

C. Enforcement Response Approaches

The nature of the City's enforcement response approach to operating and maintenance deficiencies for permanent BMPs is determined on a case-by-case basis and is based on factors such as severity of the violation, site-specific circumstances, and past compliance history. If the situation is determined to pose an immediate risk to public health or the environment, higher level Escalated Enforcement responses may be used initially, and the City will report this information to the Regional Board by phone or e-mail within 24 hours of the discovery followed by a written report within 5 days, as required by the NPDES Permit.

As required by the NPDES Permit, the City seeks to resolve incidents of observed noncompliance within 30 calendar days, or prior to the next rain event, whichever is sooner. In cases where more than 30 days are required to resolve a violation and achieve compliance, the reasons why additional time is needed is documented and kept on file. If Escalated Enforcement is not used when compliance is not achieved within the required compliance period, the rationale for why Escalated Enforcement actions were not used will also be documented.

The following table provides a general overview of the City's enforcement response approach when it discovers that permanent BMPs are not being operated and maintained as required. The enforcement response approaches described in Section III (Illicit Discharge Detection and Elimination Enforcement Component) and Section VI (Existing Development Enforcement Component) of this ERP may also apply. The descriptions in the Table as to when specific enforcement responses are used and appropriate timeframes for compliance are intended to be illustrative in nature and to provide general guidance to City enforcement staff, and are not intended to be exclusive or exhaustive. The City reserves the right to use whatever tools deemed most appropriate for a given situation, as dictated by the specifics of each case, and taking into account the factors described in Section II.A of this ERP.

Development Planning Enforcement Approach

Enforcement Action	Use	Time Schedule to Achieve Compliance
Education Letter	• If suspect noncompliance, but lack sufficient evidence to substantiate it. • May use to advise responsible party of legal obligations where O&M deficiencies are minor and easily correctable and there have been no previous violations. • May be used for first-time administrative violations, such as failure to submit a timely compliance certification.	Goal is to educate responsible party and remedy O&M deficiency. Noncompliance should be corrected within 30 calendar days or before next inspection or predicted rain event, whichever is sooner.

Enforcement Action	Use	Time Schedule to Achieve Compliance
Verbal Warning	• Use to advise responsible party of legal obligations where O&M deficiencies are minor and easily correctable, there is no threat to water quality, there is no history of prior noncompliance, and the responsible party is cooperative and has indicated a willingness to immediately correct the problem.	Noncompliance should be corrected immediately, if possible, but at least within 30 calendar days or before follow-up inspection or next predicted rain event, whichever is sooner.
Notice of Noncompliance	• Use where a prior Verbal Warning was given, but the deficiency that was noted in a prior Verbal Warning has not been corrected within the specified timeframe or by the next inspection. • Use for recurring administrative violation. • Use where the severity of the BMP O&M deficiency calls for an enforcement action stronger than a Verbal Warning, but the violation was unknowing and the responsible party is cooperative and has shown a good faith effort to immediately correct the observed O&M deficiency.	Noncompliance should be corrected within 30 calendar days or before follow-up inspection or next predicted rain event, whichever is sooner. If more than 30 days is required to achieve compliance, then a written rationale must be documented and kept on file.
Administrative Compliance Order	• Use where a prior Verbal Warning and/or Notice of Noncompliance has been insufficient to achieve compliance. • Use for recurring, but not significant, violations involving BMP O&M deficiencies. • Use for BMP O&M deficiencies that are not willful and pose no immediate threat to human health or the environment, but which cannot be remedied within a relatively short period of time. • Use to order implementation of a required BMP. • Use to order repair or replacement of a structural BMP or control device that is defective or has been removed.	Noncompliance should be corrected within 30 calendar days or before follow-up inspection or next predicted rain event, whichever is sooner. If more than 30 days is required to achieve compliance, then a written rationale must be documented and kept on file.

Enforcement Action	Use	Time Schedule to Achieve Compliance
Cease and Desist Order	• Use where BMP O&M deficiencies pose an immediate threat of a significant Illegal Discharge. • Use where lower level enforcement actions have not resulted in compliance and/or available information indicates that further authority of the City may need to be demonstrated before remedial action is forthcoming. • Use for significant recurring violations of BMP O&M requirements.	Immediate compliance should be required where there is an imminent threat of a significant Illegal Discharge. Otherwise, the time schedule for compliance will vary based on the severity of the violation and will be determined on a case-by-case basis. Where possible, noncompliance should be corrected within 30 calendar days or before follow-up inspection or next predicted rain event, whichever is sooner. If more than 30 days is required to achieve compliance, then a written rationale must be documented and kept on file.
Nuisance Abatement	• Use where the responsible party has continually failed to comply with a previously issued compliance schedule.	Time schedule for compliance will vary based on the severity of the violation and will be determined on a case-by-case basis.
Administrative Citation	• May be used in addition to an Administrative Compliance Order or Cease and Desist Order where monetary sanctions will deter future violations. • May be used in lieu of an Administrative Compliance Order or Cease and Desist Order where a compliance schedule is unnecessary and will help deter future violations. • Use where a prior Verbal Warning, Notice of Noncompliance, and/or Administrative Compliance Order has been insufficient to achieve compliance. • Use for recurring violations.	Time schedule for compliance will vary based on the severity of the violation and will be determined on a case-by-case basis. Generally, noncompliance should be corrected within 30 calendar days or before the follow-up inspection or next predicted rain event, whichever is sooner. If more than 30 days is required to achieve compliance, then a written rationale must be documented and kept on file.

Enforcement Action	Use	Time Schedule to Achieve Compliance
Civil Action	• Use when response to administrative enforcement actions is inadequate or the responsible party fails to respond. • Use to obtain a civil injunction requiring restoration or replacement of a required structural BMP that has been improperly removed or is no longer operational.	Time schedule for compliance will vary based on the severity of the violation and will be determined on a case-by-case basis.
Criminal Action	• Use in cases where there is strong evidence of willfulness or intentional disregard for legal requirements, the responsible party has failed to respond to administrative enforcement actions, there is a history of repeated prior violations by the same responsible party, and/or there has been a direct attempt to conceal a violation.	Consult with Enforcing Attorney
Referrals	• Sites that fail to obtain state industrial or construction permits. • Sites that fail to comply with City enforcement actions. • Sites that discharge waste or hazardous wastes to receiving waters.	NA

V. Construction Management Enforcement Component

This Section of the ERP describes the City's approaches to investigating, responding to, and enforcing noncompliance with the City's Ordinances at public and private construction sites within the City.

A. Overview

All construction projects in the City, regardless of size, are required to implement BMPs to prevent Illegal Discharges of Pollutants into the Stormwater Drainage System or watercourses. The City has established a minimum set of BMPs and other measures to be implemented at all construction sites year round. All private and public works construction projects are required, at a minimum, to implement and be protected by an effective combination of erosion and sediment controls and waste and materials management BMPs. In addition, the City requires enhanced or additional BMPs should the project site pose an exceptional threat to water quality. The City's Construction Program and the City departments and staff responsible for overseeing, implementing, and enforcing it, are described in Section 8 of the LIP.

Construction sites that are subject to the Construction General Permit are required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). Before issuing a grading or building permit, the City will require proof of Construction General Permit coverage. Private construction projects not covered by the General Permit, but covered under a grading permit, are required to develop Erosion and Sediment Control Plans (ESCPs) that show proposed locations of the erosion and sediment control BMPs that will be implemented during the construction project.

B. Investigating and Responding to Noncompliance

The City performs inspections of construction sites to verify that appropriate BMPs and other requirements for water quality protection are being implemented and maintained, that they appropriately comply with the City's Ordinances and the Construction General Permit, and that they continue to protect water quality. Construction sites are inspected, according to the established priority, until construction activity is complete. Threats to water quality are assessed by the City's Authorized Inspectors for construction site runoff that will not be reasonably controlled by the BMPs in place or if a failure of BMPs is resulting in the release of sediments or other Pollutants. Violations observed are documented by the inspectors, and appropriate enforcement actions are taken.

If a significant and/or immediate threat to water quality is observed by an Authorized Inspector, action is taken to require the developer/contractor to immediately cease the discharge and appropriate enforcement action is taken. The City's enforcement response approaches to violations at constructions sites are also described further in the following Section.

Although the City does not enforce the Construction General Permit, violations of the City's Ordinances or project permit conditions and plans may also be considered a violation of the General Construction Permit for sites subject to those requirements. When a construction site is subject to the General Construction Permit, City staff may also collaborate with Regional Board staff on enforcement actions.

C. Enforcement Response Approaches

The City's enforcement response approach to construction sites differs based on whether it is a private construction project or a City public works construction project. In either case, however, violations determined to pose an immediate risk to public health or the environment will warrant the use of Escalated Enforcement responses. The following Table outlines the range and progression of enforcement actions that may be taken by the City with respect to both private construction projects and public works construction projects.

Enforcement Actions for Violations at Construction Sites

PRIVATE CONSTRUCTION PROJECTS	← ENFORCEMENT PROGRESSION	PUBLIC WORKS CONSTRUCTION PROJECTS
Verbal Warning		Verbal Warning
Written Warning ▪ Notice of Noncompliance ▪ Administrative Compliance Order ▪ Administrative Citations or Fines ▪ Cease and Desist Order		Written Warning ▪ Notice of Noncompliance
Stop Work Order		Enforcement of Contract ▪ Stop Work Order ▪ Withholding of Payment ▪ Bond ▪ Fines ▪ Revocation of Contract
Revocation of Permit(s) and/or Denial of Future Permits		
Civil and Criminal Court Actions		Civil and Criminal Court Actions

As required by the NPDES Permit, the City's NPDES Coordinator will notify the Regional Water Board in writing within five (5) calendar days of issuing Escalated Enforcement to a construction site that poses a significant threat to water quality as a result of violations or other noncompliance. Written notification may be provided to the appropriate Regional Water Board staff member by email. The City's NPDES Coordinator will also notify the Regional Board of any persons required to obtain coverage under the Construction General Permit and failing to do so, within five (5) calendar days from the time the City becomes aware of the circumstances. Written notification may be provided electronically by email to RB9_Nonfilers@waterboards.ca.gov.

The City seeks to resolve violations at both private and public works construction sites as quickly as possible, including prior to rain events where feasible. As required by the NPDES Permit, the City seeks to resolve incidents of observed noncompliance within 30 calendar days, or prior to the next rain event, whichever is sooner. In cases where more than 30 days are required to resolve a violation and achieve compliance, the reasons why additional time is needed is documented and kept on file. If Escalated Enforcement is not used when compliance is not achieved within the required compliance period, the rationale for why Escalated Enforcement actions were not used will also be documented.

A general overview of the City's enforcement response approach to violations at private construction sites and public works construction sites is set forth below. For violations at construction sites resulting in actual or threatened Illegal Discharges, refer to the enforcement response approaches described in Section III (Illicit Discharge Detection and Elimination Enforcement Component of this ERP. The

overview below is intended to be illustrative in nature and to provide general guidance to City enforcement staff, and is not intended to be exclusive or exhaustive. The City reserves the right to use whatever tools deemed most appropriate for a given situation, as dictated by the specifics of each case, and taking into account the factors described in Section II.A of this ERP.

The nature of the City's enforcement response approach to violations at construction sites is determined on a case-by-case basis and is based on factors such as severity of the violation, site-specific circumstances, and the contractor's past compliance history. If the situation is determined to pose an immediate risk to water quality, higher level Escalated Enforcement responses may be used initially. The following charts depict the range of enforcement options available for violations at private and public works construction sites, respectively, and are intended to provide guidance to Authorized Inspectors in determining what enforcement response is appropriate for a given violation.

Enforcement of Noncompliance for Private Construction Projects

ENFORCEMENT OPTIONS	ACTIONS			CRIMINAL ACTIONS
	NOTICE OF NON-COMPLIANCE	ADMINISTRATIVE COMPLIANCE ORDER / ADMINISTRATIVE CITATION	CEASE & DESIST STOP WORK ORDER REVOCATION OF PERMIT(S)	INFRACTIONS AND MISDEMEANORS
COMPLIANCE STRATEGY				
Threat Level	Insignificant	No: Significant	May be Significant	Significant
Environmental Harm	None	No: Immediate	Potential/Immediate	Actual Immediate
Event Duration	Short	Short	Long/Continuous	Long/Continuous
Event Frequency	Isolated	Infrequent	Frequent/Ongoing	Frequent/Ongoing
Cooperation	Readily Complies	Working to Comply	Uncooperative/ Slow to Comply	Non-Responsive
Intent	Unknowingly	No: Willful	Possibly Willful	Willful

Enforcement of Noncompliance for Public Works Construction Projects

ENFORCEMENT OPTIONS	ACTIONS		CRIMINAL ACTIONS
	NOTICE OF NON-COMPLIANCE	CONTRACT REMEDIES	INFRACTIONS AND MISDEMEANORS
COMPLIANCE STRATEGY			
Threat Level	Insignificant	No: Significant	May be Significant	Significant
Environmental Harm	None	No: Immediate	Potential/Immediate	Actual Immediate
Event Duration	Short	Short	Long/Continuous	Long/Continuous
Event Frequency	Isolated	Infrequent	Frequent/Ongoing	Frequent/Ongoing
Cooperation	Readily Complies	Working to Comply	Uncooperative/ Slow to Comply	Non-Responsive
Intent	Unknowingly	No: Willful	Possibly Willful	Willful

- Verbal Warnings (both private and public works construction projects)

For insignificant violations that do not pose an immediate threat to water quality, the initial method of requesting corrective action and enforcing compliance will typically be a Verbal Warning from the Authorized Inspector to the contractor. Verbal warnings are often sufficient to achieve correction of the

violation, often while the Authorized Inspector is present at the construction site. The Authorized Inspector will notify the developer/contractor's project supervisor of the violation, and document the violation and the notification to the contractor's project supervisor in the inspection file. A specific time frame for correcting the problem and a follow-up inspection date will be documented by the inspector.

- Written Warnings (both private and public works construction projects)

If a deficiency that was noted in a prior Verbal Warning is not corrected by the next inspection, or the severity of the violation is such that a Verbal Warning is not strong enough, a written warning will be issued. A written warning will describe the deficiency that is to be corrected, suggested corrective action(s), and the specific time frame for correction and a date for a follow-up inspection. A copy of the written warning will be provided to the contractor's project supervisor and another copy will be provided to the owner/developer. A copy will be placed in the active inspection file. Once the violation has been corrected to the satisfaction of the inspector, the inspector will document compliance in the inspection file.

For private construction projects, written warnings may range from a Notice of Violation, Administrative Compliance Order, Administrative Citation, or Cease and Desist Order – depending on the severity of the of the violation or threat to water quality and the responsiveness and compliance history of the contractor. For public works construction projects, a Notice of Violation serves as the only form of written warning given.

- Contract Enforcement Mechanisms (public works construction projects only)

If a contractor is performing construction of a public works project on behalf of the City, then the City will use the provisions within the contract for enforcement of noncompliance where verbal or written warnings prove insufficient. Such contract provisions may allow the City to withhold payment(s), require bonds, apply monetary penalties, order work stopped (without time penalties), or terminate the contract if the contractor performing the work does not comply with all appropriate permits, laws, regulations and ordinances.

- Stop Work Orders (private construction projects only)

If a written warning has not been addressed by the next inspection, or if the developer/contractor has not complied with their permit requirements, or if a significant threat to water quality is observed (such as a failure of BMPs resulting in a significant release of sediment or other pollutants off site), a Stop Work Order will be issued by the inspector or the appropriate official. Stop Work Orders prohibit further construction activity until the problem is resolved and provide a time frame for correcting the problem. The Stop Work Order will describe the infraction and specify what corrective action must be taken. A copy of the Stop Work Order will be given to the contractor's project supervisor and placed in the active inspection file. For a private construction project, a copy of the Stop Work Order will also be sent to the owner/developer. To restart work once a Stop Work Order has been issued, the contractor's project supervisor must request the inspector to re-inspect the project and verify that the deficiencies have been satisfactorily corrected. If the inspector is satisfied with the corrections, the inspector may sign off on that phase of the project, and work may proceed.

- Revocation of Permit(s) and/or Denial of Future Permits (private construction projects only)

In severe cases of noncompliance or significant discharges at private construction sites, it may be necessary to revoke the grading and/or building permit that a developer/contractor is working under. The developer/contractor would then have to re-apply for permits and meet any requirements that the City may place on the project. Revocation of building or grading permits must be conducted in accordance with the process described in the City's Municipal Code. City Staff should consult with the Enforcing Attorney before proceeding with revocation of permits.

- Civil and Criminal Court Actions

In cases of severe and repeated noncompliance, Civil and/or Criminal court actions may be appropriate. Whether to pursue Civil or Criminal enforcement remedies will be determined in consultation with the Enforcing Attorney.

VI. Existing Development Enforcement Component

This Section of the ERP describes the City's approaches to investigating, responding to, and enforcing noncompliance with the City's Ordinances with respect to existing municipal, commercial and industrial, and residential development.

A. Overview

As required by the NPDES Permit, the City has implemented an Existing Development Management Program pursuant to which it inventories and tracks existing municipal, industrial, commercial, and residential development in the City; requires the implementation, operation, and maintenance of pollution prevention BMPs for activities associated with municipal, industrial, commercial, and residential activities; and periodically inspects inventoried existing development to ensure and enforce proper BMP implementation and compliance with the City's Ordinances. The City's Existing Development Management Program, is divided into separate Municipal, Industrial/Commercial, and Residential Programs. The Existing Development Management Program overlaps with the City's ID/IC and New Development/Significant Redevelopment Programs, and the problematic activities, types of violations, and enforcement response approaches described in Section III (Illicit Discharge Detection and Elimination Enforcement Component) and Section IV (Development Planning Enforcement Component) of this ERP also generally apply to existing development. In addition, summaries of applicable pollution prevention BMPs municipal facilities, industrial and commercial facilities, residential activities, and homeowners' associations / common interest developments can be found in in Sections 5 and 9 of the LIP.

B. Investigating and Responding to Noncompliance

1. Municipal Facilities and Areas

The City inspects and implements appropriate BMPs for Municipal facilities and areas in accordance with the requirements of the NPDES Permit. During routine municipal facility inspections, City or contract staff will assess facility areas and activities to ensure all are maintained in accordance with City regulations, ordinances and BMP requirements. If BMPs are found to be deficient or otherwise ineffective, the responsible party or department will be provided corrective actions. If the responsible City staff member or department does not perform the necessary corrective actions in response to the direction of their immediate supervisor, escalated enforcement will be taken by involving higher ranking

representatives within the responsible department, who may enact internal disciplinary procedures, until the deficiencies are resolved.

If the City determines that specific areas of a leased City facility require additional BMPs, the City often can require the implementation of BMPs in addition to the required minimum BMPs for the specific area/activity. If a leased City facility continues to be out of compliance, the City may choose to discontinue the lease and remove the tenant from the site.

2. Industrial and Commercial Development

a. Fixed Facilities

The City inspects commercial and industrial facilities to determine if they are in compliance with City's Ordinances, to review BMP implementation, to assess BMP effectiveness and to verify inventory information used for facility prioritization. Such inspections include review of: (i) material and waste handling and storage practices; (ii) pollution control BMP implementation and maintenance; and (iii) evidence of past or present unauthorized, non-stormwater discharges. The City will generally conduct on of two types of inspections, compliance inspections and follow-up inspections.

Initial compliance inspections are announced and focus on current facility operations and activities, BMPs currently in use, the effectiveness of those BMPs, and verifying inventory spreadsheet information. All re-occurring compliance inspections cover the same information as an initial compliance inspection, but will typically be unannounced in order to verify compliance and that BMPs are being effectively implemented.

For those facilities deemed to be non-compliant, the City will perform compliance inspections once a month until said facilities are shown to be complaint, and then once every four months for a full calendar year after the facility achieves compliance. Generally, these inspections will focus primarily on areas where a facility was deemed to be non-compliant and may be either announced or unannounced, depending on which course of action the Authorized Inspector deems will be most conducive to continued facility compliance.

Appropriate enforcement actions are taken against industrial and commercial facility owners and operators determined to be out of compliance. The Authorized Inspector will document each observed violation. Depending on the severity of the violation, enforcement actions can range from a verbal warning to civil or criminal court actions with monetary fines. Illegal Discharges and Illicit Connections from industrial and commercial facilities are investigated and responded to as described in Section III of this ERP. If an Authorized Inspector observes a significant and/or immediate threat to water quality, enforcement action will be taken to require the facility owner/operator to immediately cease and correct the discharge or activity and the City will coordinate notification of the appropriate agencies. Conditions that would warrant such action may include observations of runoff from an industrial site that are not reasonably controlled by protective measures or observation of a failure in BMPs resulting in an actual or threatened discharge of Pollutants to the Stormwater Drainage System or a water body. Escalated Enforcement measures will be implemented as needed to achieve compliance. The City may also require industrial/commercial facilities to implement monitoring programs where warranted.

b. Mobile Businesses

Stormwater violations associated with mobile car wash and surface cleaner businesses include Illegal Discharges and failure to properly implement specific activity-based BMPs required of such businesses. The City may become aware of violations associated with mobile cleaning businesses from complaints, field observations, or inspections. Where violations are observed, they are documented and appropriate enforcement actions are taken against mobile business owners and operators. Depending on the severity of the violation, enforcement actions can range from a verbal warning to civil or criminal court actions with monetary fines. If an Authorized Inspector observes a significant and/or immediate threat to water quality, enforcement action will be taken to require the mobile business owner and/or operator to immediately cease the discharge and/or implement the required BMPs. Illegal Discharges associated with mobile businesses are investigated and responded to as described in Section III of this ERP

3. Residential Development

Enforcement actions may be initiated by the City as a response to hotline reports and complaints, or by observations by City representatives. All enforcement actions will be documented

Enforcement of BMPs in common interest developments will be conducted using the following mechanisms: public reporting hotline, analysis of dry weather/illicit discharge monitoring results, and municipal employee observations.

The City may become aware of potential violations associated with activities on residential property through public reporting or complaints or through field observations of City personnel or contractors during residential area inspections, during scheduled dry weather water quality monitoring, and or during routine City activities such as Stormwater Drainage System inspections and maintenance. Additional, focused investigations of areas upstream of outfalls where Pollutants are identified during monitoring activities and complaint response investigations provide additional information sources. The combination of public reporting, direct observations, targeted investigations, and in-field monitoring provide effective oversight of residential areas and activities.

During investigations of incidents discovered through these mechanisms, the City will continue to use the opportunity to address any other issues of concern and provide education and outreach to residential property owners, occupants, and managers as appropriate to notify and urge them to observe designated BMPs for the high threat activities. When residential BMP deficiencies are observed, follow-up inspections will be performed and violations investigated within a reasonable timeframe.

Illegal Discharges and Illicit Connections from residential properties are investigated and responded to as described in Section III of this ERP. Other violations of the City's Ordinances will also be investigated and documented, and, depending on the nature and severity of the violation, the enforcement may consist of any of the enforcement measures described in this ERP.

C. Enforcement Response Approaches

The nature of the City's enforcement response approach to violations associated with Existing Development is determined on a case-by-case basis and is based the nature of the violation and on factors such as severity of the violation or threat to human health or the environment, site-specific circumstances, and past compliance history. Except as otherwise described in Subsection B, above, the

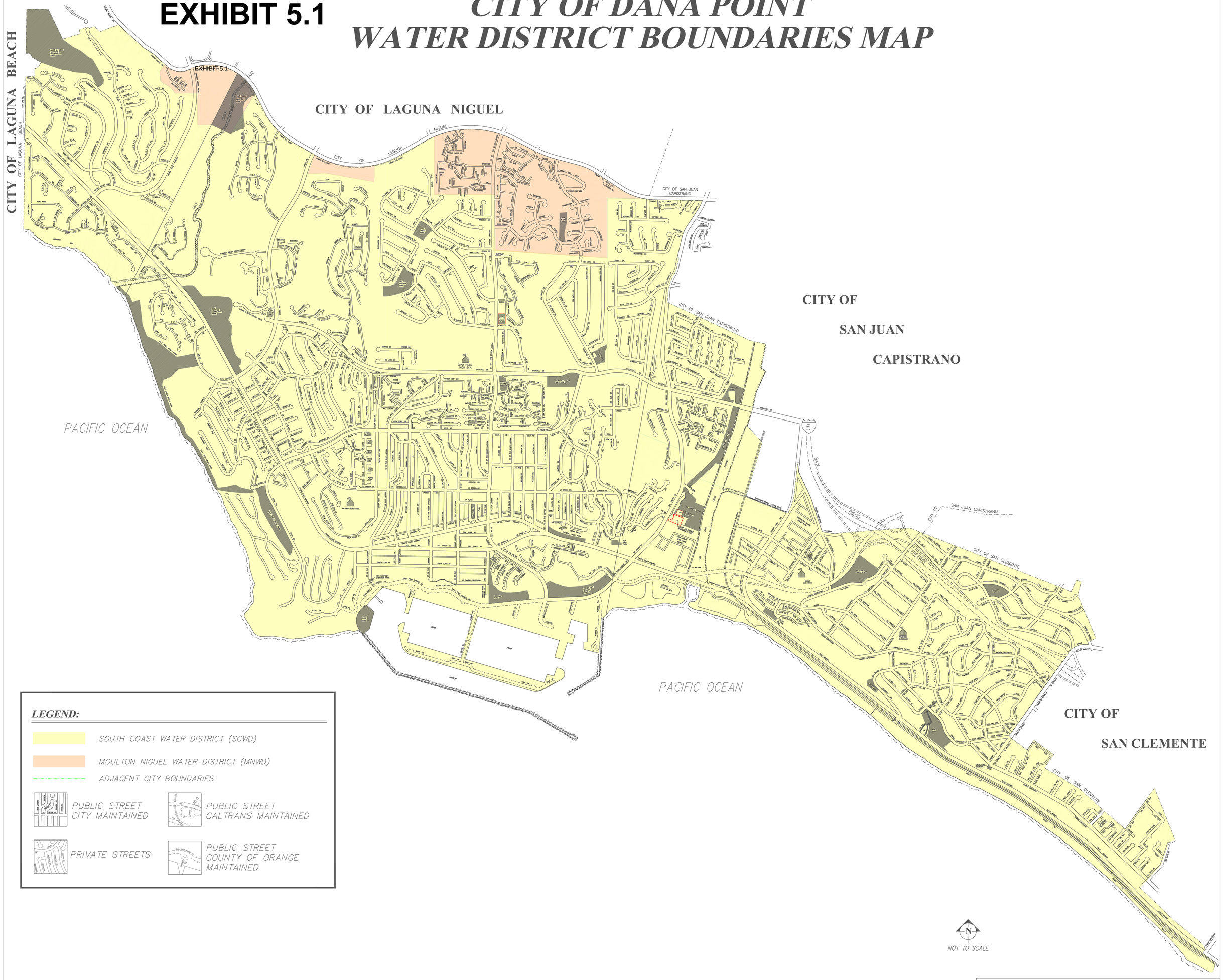
City's enforcement response approaches to violations associated with Existing Development will be the same as the City's enforcement response approaches described Section III (Illicit Discharge Detection and Elimination Enforcement Component) and Section IV (Development Planning Enforcement Component) of this ERP. As described in other components of this ERP, if a particular violation is determined to pose an immediate risk to public health or the environment, higher level Escalated Enforcement responses may be used immediately and, if needed, the City will respond itself to ensure the threat is eliminated in a timely and efficient manner.

As required by the NPDES Permit, the City seeks to resolve incidents of observed noncompliance within 30 calendar days, or prior to the next rain event, whichever is sooner. In cases where more than 30 days are required to resolve a violation and achieve compliance, the reasons why additional time is needed is documented and kept on file. If Escalated Enforcement is not used when compliance is not achieved within the required compliance period, the rationale for why Escalated Enforcement actions were not used will also be documented.

When a site is subject to the Industrial General Permit, the City may collaborate with Regional Board staff on enforcement actions. In addition, as required by the NPDES Permit, the City's NPDES Coordinator will notify the Regional Board of any persons required to obtain coverage under the Industrial General Permit and failing to do so, within five (5) calendar days from the time the City becomes aware of the circumstances. Written notification may be provided electronically by email to RB9_Nonfilers@waterboards.ca.gov.

EXHIBIT 5.1

CITY OF DANA POINT
WATER DISTRICT BOUNDARIES MAP



CITY OF DANA POINT
WATER DISTRICT BOUNDARIES MAP

DWG Name: I:\010-Utilities-Interagency (Non-Project Related)\SCWD\Exhibits\Water District Boundaries Map.dwg Plotted by: pwintern on Sep 13, 2021 - 15:33:58

Exhibit 5.2

Exhibit 5.2: City of Dana Point Municipal Inventory

Name	Long / Lat	Address	Major Cross Roads	Watershed	Type	T = Toilets P= Parking (# Stalls)	Priority per WQIP Goals	# Mutt Mitt Dispensers	Total Acreage	Irrigated Acreage	Recycled Water or Potable Water (and priority for conversion)	Potential Pollutants	Adjacent to ESA?	Tributary to 303(d) Listed water body segment & generates pollutant of concern?	Frequency of Inspection(s)	Facility Drains to BMP? *(to be confirmed)*
City Roads, Streets & Coastal Highways	NA	Throughout City	NA	all	Roads		Med	NA	NA	NA	Medians - varies, see map	Sediment, nutrients, trash, metals, oil & grease, organics, oxygen demanding substances		No	Routinely throughout the year	varies
Grafitti Removal	NA	NA	NA	all	NA		Low	NA	NA	NA	NA	Sediment, washwater, inorganics	varies	No	Activity occurs as needed	varies
Powerwashing	NA	NA	NA	All	NA		High	NA	NA	NA	NA	Sediment, nutrients, trash, metals, oil & grease, organics, oxygen demanding substances		Yes- bacteria	As needed with containment and BMPs	varies
Special Event Venues following events	NA	Varies	NA	All	Parks		High	NA	NA	NA	NA	Trash, bacteria, organics	varies	Yes- bacteria	After each event	varies
Orange County Maintenance Yard	117°41'0.78"W 33°28'3.90"N	34102 Del. Obispo	Del Obispo & Village Road	San Juan Creek, Del Obispo Diversion	Corp Yard		High				No Irrigation	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances, metals, oil & grease, organics	Yes- San Juan Creek	Yes- bacteria	Quarterly by County of Orange	Del Obispo Trash Sepration Unit & Dry Weather Diversion
Sea Terrace Park	117°43'6.70"W 33°28'44.13"N	Pacific Coast Highway at Niguel Road	Niguel Rd. & PCH	Dana Point Coastal Streams	Park		High	8	20	20	Reclaimed	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	Yes - Salt Creek Corridor	Yes- bacteria	Weekly	Salt Creek Ozone Treatment Facility (Dry Weather)
Lantern Bay Park	117°41'22.05"W 33°27'48.63"N	25111 Park Lantern	Park Lantern & Dana Point Harbor Dr.	Dana Point Coastal Streams, Harbor	Park	T	High	6	16.6	16	Reclaimed	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria, Harbor, Zn, Cu (metals)	Weekly, trash cleaned on weekends, toilets daily in AM	North Creek Trash Separation Unit & Dry Weather Diversion
Hilltop Park	117°42'30.87"W 33°27'49.14"N		Green Lantern & Santa Clara Ave	Dana Point Coastal Streams, Baby Beach	Park		Low	no dogs	11.79	11.79	No Irrigation	Sediment, trash, non anthropogenic bacteria	Yes- Strand beach (Pacific	No- only non-anthropogenic bacteria	Weekly	Baby Beach trash separation unit, media filter & dry
Harborpoint Park (inlcude small portion of beach near Ocean Institute)	117°42'31.57"W 33°27'41.85"N		Cove Road/ Green Lantern	Dana Point Coastal Streams	Park		Low	0	9.337	9.337	No irrigation	Sediment, trash, non anthropogenic bacteria	Yes- Strand beach (Pacific Ocean)	No- only non-anthropogenic bacteria	Weekly	Baby Beach trash separation unit, media filter & dry weather diversion
Del Obispo Park	117°41'0.78"W 33°28'3.90"N	34052 Del Obispo Street	Del Obispo/ Alipaz St	San Juan Creek	Park	T	High	3	7.3	7.3	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	Yes- San Juan Creek	Yes- bacteria	Weekly, trash cleaned on weekends, toilets daily in AM	Del Obispo Trash Sepration Unit & Dry Weather Diversion
Sea Canyon Park	117°42'17.38"W 33°28'49.73"N	33093 Santiago Drive	Taxco Dr. & Santiago Dr.	Dana Point Coastal Streams	Park	T	High	5	7	7	Reclaimed	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly, trash cleaned on weekends, toilets daily in AM	Salt Creek Ozone Treatment Facility (Dry Weather)
Heritage Park	117°41'29.37"W 33°27'49.21"N	34400 Old Golden Lantern	Park Lantern & Dana Point Harbor Dr.	San Juan Creek	Park	P-10	High	7	6.9	6.9	Reclaimed	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances, metals,	No	Yes- bacteria, Harbor, Zn, Cu (metals)	Weekly, trash cleaned on weekends	
Creekside Park	117°40'48.51"W 33°28'31.06"N	25743 Stonehill Drive	Stonehill Dr. past SJC overpass	San Juan Creek	Park	T	High	7	6.5	6.33	Potable, piped for recycled	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	Yes - San Juan Creek	Yes- bacteria	Weekly, trash cleaned on weekends, toilets daily in AM	
Sycamore Park/Trail	117°41'2.10"W 33°28'11.20"N		Del Obispo @ Quail run	San Juan Creek	Park		High	13	5.2	4.5	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	Yes - San Juan Creek	Yes- bacteria	Weekly	
Thunderbird Park	117°41'24.26"W 33°28'38.22"N	33422 Ocean Hill Drive	Stonehill	San Juan Creek	Park	P=8	High	2	4.5	2.41	Reclaimed	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances, metals, oil & grease, organics	No	Yes- bacteria	Weekly, trash cleaned on weekends	Alipaz trash sepration unit & dry weather diversion
Pines Park	117°39'56.74"W 33°27'17.67"N	34941 Camino Capistrano	Camino Capistrano & Calle Loma	San Juan Creek	Park		High	3	4	4	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly, trash cleaned on weekends	Capo Beach trash separation unit & dry weather diversion
Dana Woods Park	117°41'35.94"W 33°29'9.86"N	24900 Dana Woods	Dana Woods Rd	San Juan Creek Alipaz Diverison (portion)	Park		Med	2	3.5	2.98	Reclaimed	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly	Alipaz trash sepration unit & dry weather diversion
Dana Crest Park	117°42'10.20"W 33°29'6.41"N	24461 Josiah Drive	Jeremiah/Golden Lanter	Dana Point Coastal Streams	Park		Med	3	3.1	3.1	Reclaimed	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	weekly, trash cleaned on weekends	Salt Creek Ozone Treatment Facility (Dry Weather)

Exhibit 5.2: City of Dana Point Municipal Inventory

Name	Long / Lat	Address	Major Cross Roads	Watershed	Type	T = Toilets P= Parking (# Stalls)	Priority per WQIP Goals	# Mutt Mitt Dispensers	Total Acreage	Irrigated Acreage	Recycled Water or Potable Water (and priority for conversion)	Potential Pollutants	Adjacent to ESA?	Tributary to 303(d) Listed water body segment & generates pollutant of concern?	Frequency of Inspection(s)	Facility Drains to BMP? *(to be confirmed)*
Sunset Park	117°39'39.34"W 33°27'48.47"N	33345 Calle Naranja	Left on Camino Capistrano, left on Califronia, right on Velez	San Juan Creek	Park	T	Med	4	3	3	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly, trash cleaned on weekends, toilets daily in AM	Capo Beach trash separation unit & dry weather diversion
Golden lantern Medians	varies	Golden Lantern		Dana Point Coastal Streams, Harbor	Median		Low		2.48	2.48	All Reclaimed	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly	
Crystal Cove Park	117°41'33.59"W 33°28'2.50"N	25044 Via Elevado	La Cresta	San Juan Creek, North Creek	Park		Low	3	2.08	1.5	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly	North Creek Trash Separation Unit & Dry Weather Diversion
Harry Otsubo Community Garden	117°41'49.45"W 33°28'32.77"N	SE corner of Stonehill at Golden Lantern	Stonehill & Golden Lantern	San Juan Creek	Park	P-20	Low	1	2	2	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances, metals, oil & grease, organics	No	Yes- bacteria, Harbor, Zn, Cu (metals)	Weekly	
Revetment Walkway			Strand Beach	a Point Coastal Stre	Trail		Low	0	1.73	1.73	NA	Sediment, trash, non anthropogenic bacteria	Yes- Strand beach (Pacific Ocean)	Yes- bacteria	Weekly	
Dana Point City Hall	117°41'50.35"W 33°28'45.50"N	33282 Golden Lantern	Golden Lantern & Acapulco	San Juan Creek	Office	p	Low	N/A	1.55	0.23	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances, metals, oil & grease, organics	No	Yes- bacteria	As needed	
Strand Vista			Selva Rd./Dana Strand	a Point Coastal Stre	Park	T	Low	8	1.27	1.27	Reclaimed	Sediment, trash, non anthropogenic bacteria	Yes- Strand beach (Pacific Ocean)	No- only non-anthropogenic bacteria	Weekly, trash cleaned on weekends, toilets daily in AM	Headlands trash separation unit, media filter & dry weather diversion
La Plaza Park	117°41'57.40"W 33°28'1.95"N	Pacific Coast Highway at La Plaza	Pacific Coast Highway north of Golden Lantern	San Juan Creek	Park	P-72	Low	2	1.2	1.2	Reclaimed	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria, Harbor, Zn, Cu (metals)	Weekly, trash cleaned on weekends	
Louise Leyden Park	117°40'37.97"W 33°27'43.57"N	25922 W. Dana Bluff	Dana Bluff @ Via Verde	San Juan Creek	Park		Low	2	1.2	1.2	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly	Urban Runoff dry weather diversion
Palisades Gazebo Park	117°40'9.26"W 33°27'25.26"N	26401 Palisades Drive	Palisades Dr. & PCH	San Juan Creek	Park		Low	1	0.71	0.71	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly	Capo Beach trash separation unit & dry weather diversion
Calle Paloma			Calle Paloma & Los Robles	San Juan Creek	Park		Low	2	0.5	0.5	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly	
Nature Interpretive Center / Funicular	117°42'41.82"W 33°27'39.12"N	34558 Street of the Green Lantern	End of Green Lantern	Dana Point Coastal Streams	Office	T P	Low	0	0.426	0.426	Potable	Sediment, trash, non anthropogenic bacteria	Yes- Strand beach (Pacific Ocean)	No- only non-anthropogenic bacteria	Weekly	Headlands trash separation unit, media filter & dry weather diversion
South Strand Open Space (switchback trail) & Restrooms	117°42'47.61"W 33°27'49.91"N		Dana Strand/Scenic Drive	Dana Point Coastal Streams	Trail		Low	no dogs	0.3	0.3	No irrigation	Sediment, trash, non anthropogenic bacteria	Yes- Strand beach (Pacific Ocean)	No- only non-anthropogenic bacteria	Weekly	Headlands trash separation unit, media filter & dry weather diversion
Lantern Village Community Park	117°42'1.12"W 33°28'8.99"N		La Cresta/Violet Lantern	San Juan Creek	Park		Low	2	0.3	0.16	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly, trash cleaned on weekends	
Chloe Luke Overlook Park	117°39'39.69"W 33°27'10.04"N		Camino Capistrano at Camino de Estrella	San Juan Creek	Park		Low	1	0.23	0.02	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly	
Sea View Park	117°41'20.02"W 33°27'57.85"N	25262 Manzanita	Crystal Lantern/Manzanita	San Juan Creek, North Creek	Park		Low	1	0.22	0.22	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly, trash cleaned on weekends	North Creek Trash Separation Unit & Dry Weather Diversion
Blufftop Trail			Amber Lantern to Violet Lantern	San Juan Creek	Trail		Low	3	0.16	0.16	No irrigation/water shut off	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria	Weekly, trash cleaned on weekends	

Exhibit 5.2: City of Dana Point Municipal Inventory

Name	Long / Lat	Address	Major Cross Roads	Watershed	Type	T = Toilets P= Parking (# Stalls)	Priority per WQIP Goals	# Mutt Mitt Dispensers	Total Acreage	Irrigated Acreage	Recycled Water or Potable Water (and priority for conversion)	Potential Pollutants	Adjacent to ESA?	Tributary to 303(d) Listed water body segment & generates pollutant of concern?	Frequency of Inspection(s)	Facility Drains to BMP? *(to be confirmed)*
Shipwreck Park	117°41'51.15"W 33°28'9.39"N	33972 Golden Lantern	La Cresta & Golden Lantern	San Juan Creek	Park		Low	0	0.16	0.16	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria, Harbor, Zn, Cu (metals)	Weekly, trash cleaned on weekends	
Sampson Overview Gazebo	117°42'23.80"W 33°27'50.33"N		End of Blue Lantern	Dana Point Coastal Streams, Baby Beach	Park		Low	1	0.15	0.15	Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria, Baby Beach	Weekly, trash cleaned on weekends	Baby Beach trash separation unit, media filter & dry weather diversion
Dana Hills High School Sports Field	117°41'54.21"W 33°28'39.96"N	33333 Golden Lantern Drive	Golden Lantern & Acapulco	San Juan Creek	Park	T	Low	0			Recycled	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances	No	Yes- bacteria, Harbor, Zn, Cu (metals)	weekly, toilets daily in AM	
Camino Capistrano Median							Low				Potable				Weekly	
Camino de Estrella Median							Low				Potable				Weekly	Camino de Estrella diversion (partial)
Crown Valley Median							Low				Potable				Weekly	Salt Creek Ozone Treatment Facility (Dry Weather)
Dana Point Community Center/Sports Park	117°41'0.78"W 33°28'3.90"N	34052 Del Obispo Street	Del Obispo & Village Road	San Juan Creek, Del Obispo Diversion	Office/Park		Low				Potable	Sediment, nutrients, trash, bacteria, pesticdes, oxygen demanding substances, metals, oil & grease, organics	Yes- San Juan Creek	Yes- bacteria	Weekly	Del Obispo Trash Sepration Unit & Dry Weather Diversion
Pacific Coast Highway Pedestrian Bridge & Elevators							Low				Potable				Weekly	
Special Events - Fireworks, Indiviudal Permit				San Juan Creek			Low				NA	Debris, metals	Yes	No	Annually July 4-5	NA

EXHIBIT 5.3: STREET & STORM DRAIN MAINTENANCE DIVISION PROCEDURES

A. CITY OWNED CATCH BASIN ACTIVITIES

1. Annual inspection of the catch basins performed by City's contractor, Ocean Blue.

    a. Clean each catch basin.

    b. Inspection for damage.

    c. Report any defects and/or illicit discharges/connections found to the City's Water Quality Engineer

2. Quarterly inspection/cleaning of catch basin filters performed by Ocean Blue

    a. Clean filter systems that are identified in need of cleaning. If filter is clean at quarterly inspection, no cleaning is done.

    b. Inspect for damage. This is for all filters in the system.

    c. Report any defects and/or illicit discharges/connections found to the City's Water Quality Engineer

3. The City Contracts with CR&R to sweep 100% of the City's curb lines on all public streets, including medians on a weekly basis.

    a. The sweeper operator is instructed to report all illicit discharges/connections found during the sweeping operation immediately.

    b. A significant amount of the streets in Dana Point are posted for "No Parking" on street sweeping days. Along with the sweeper operator, a Parking Enforcement Official precedes the street sweeper to get people to move cars and enforce the no parking restrictions.

    On a daily basis the City, County and Contractor (**Staff**) report and address all illicit discharges including those related to traffic accidents as discovered. Spill kits are maintained on service vehicles as well as stored at City Hall and the County Yard for easy access.

The City Public Works Staff drives the City on a daily/weekly basis and, therefore, is constantly completing visual inspections throughout our travels. Further, Staff is constantly talking to our residents and Contractors to educate them on water quality regulations to prevent illicit discharges.

B. CITY OWNED TRASH SEPARATION UNITS/STORM FILTER SYSTEMS

1. The four Trash Separation Units are cleaned 6-8 times per year by Ocean Blue.

    a. Clean filter systems and trash separation units.

    b. Inspect for damage.

    c. Report any defects and/or illicit discharges/connections found to the City's Water Quality Engineer.

2. The Three Headlands and One Selva Road Contech Storm Filter Systems are cleaned and inspected at least once per year.

    a. Filter media is replaced as required based on inspection data.

    b. Vaults are vacuumed out.

    c. Report any defects and/or illicit discharges/connections found to the City's Water Quality Engineer.

3. One Baby Beach Contech Storm Filter System is cleaned and inspected at least once per year
    a. Filter media is replaced as required based on inspection data.
    b. Vaults are vacuumed out.
    c. Report any defects and/or illicit discharge/connections found to the City's Water Quality Engineer.

Due to confined space limitations all this work is preformed be Contracted Staff.

C. CITY OWNED TRASH SEPARATION UNITS/STORM FILTER SYSTEMS

1. The Four Trash Separation Units, Three Headlands Units and the Baby Beach Unit are calibrated annually by JR Environmental Services.

    a. Inspect, report, repair and calibrate all of the diversion monitoring equipment.

    b. Report any defect and/or illicit discharges/connections found.

2. Monitor and control the diversions based on weather conditions.

    a. 18 diversions within the City.

D. STORM DRAIN VIDEO AND INSPECTIONS

a. The City's storm drain system is CCTV'd in a phased approach so the whole system is inspection once every five years, at a minimum.

b. An assessment report is prepared to note locations of concern, areas in need of cleaning and areas in need of repair.

c. Repairs and cleaning are prioritized and completed.

E. GENERAL CONSIDERATIONS

1. Appropriate City and County staff goes through annual BMP training through the County of Orange.

2. The City of Dana Point is a *Hands-On* City and very aware of water quality; we expect all staff to immediately report any and all encounters where materials other than storm water have the potential to enter the storm drain system.

3. The City of Dana Point provides weekly trash removal on the most heavily traveled streets within the City.

4. The City has an on call agreement with SCWD to provide emergency response when response time is sensitive and/or large vacuum equipment is needed.

5. The City has procured a powerwasher to provide additional clean up services such as the removal or oils, fuel, paint and other materials from the street/sidewalk to prevent materials from entering the storm drain system. All staff that use this system are trained from proper containment and proper disposal of washwater.

6. The City has implemented a *work order* logging and tracking system.

    a. The system allows the City to track costs, repeat offenders and problem areas.

EXHIBIT 5.3: STREET & STORM DRAIN MAINTENANCE DIVISION PROCEDURES

A. CITY OWNED CATCH BASIN ACTIVITIES

1. Annual inspection of the catch basins performed by City's contractor, United Storm Water.

    a. Clean each catch basin.

    b. Inspection for damage.

    c. Report any defects and/or illicit discharges/connections found to the City's Public Works Superintendent/Street Maintenance Manager

2. Annual re-stenciling of the "drains to ocean" performed by the County of Orange (via Contract with the City of Dana Point).

3. Quarterly inspection/cleaning of catch basin filters performed by United Storm Water.

    a. Clean filter systems that are identified in need of cleaning. If filter is clean at quarterly inspection, no cleaning is done.

    b. Inspect for damage. This is for all filters in the system.

    c. Report any defects and/or illicit discharges/connections found to the City's Street Maintenance Manager.

4. The City Contracts with CleanStreet to sweep 100% of the City's curb lines on all public streets, including medians on a weekly basis.

    a. The sweeper operator is instructed to report all illicit discharges/connections found during the sweeping operation immediately.

    b. A significant amount of the streets in Dana Point are posted for "No Parking" on street sweeping days. Along with the sweeper operator, the Sheriff Department has Community Service Officer (CSO) staff following along. This is an additional set of eyes watching the streets for potential illicit discharges including leaking vehicles or excessive runoff.

    The City reviews catch basins on a regular basis, When deemed necessary, the City has installed catch basin screens on the street level in areas where excess material was found building up in the catch basin. In addition, the City has installed inlet filter screens within the catch basin where street level screening would not work.

On a daily basis the City, County and Contractor (**Staff**) report and address all illicit discharges including those related to traffic accidents as discovered. Spill kits are maintained on service vehicles as well as stored at City Hall and the County Yard for easy access.

The City Public Works Staff drives the City on a daily/weekly basis and, therefore, is constantly completing visual inspections throughout our travels. As documented, during 2016 Staff has responded to well over 25 major accidents. Further, Staff is constantly talking to our residents and Contractors to educate them on water quality regulations to prevent illicit discharges.

B. CITY OWNED TRASH SEPARATION UNITS/STORM FILTER SYSTEMS

1. The four Trash Separation Units are cleaned 8 times per year by United Storm Water.

    a. Clean filter systems and trash separation units.

    b. Inspect for damage.

    c. Report any defects and/or illicit discharges/connections found to the City's Public Works Superintendent/Street Maintenance Manager.

2. The Three Headlands and One Selva Road Contech Storm Filter Systems are cleaned and inspected two times per year.

    a. 1/3 of filter media is replaced annually.

    b. Vaults are vacuumed out.

    c. Report any defects and/or illicit discharges/connections found to the City's Public Works Superintendent/Street Maintenance Manager.

3. One Baby Beach Contech Storm Filter System is cleaned and inspected two times per year
    a. 1/3 of filter media is replaced annually.
    b. Vaults are vacuumed out.
    c. Report any defects and/or illicit discharge/connections found to the City's Public Works Superintendent/Street Maintenance Manager.

Due to confined space limitations all this work is preformed be Contracted Staff.

C. CITY OWNED TRASH SEPARATION UNITS/STORM FILTER SYSTEMS

1. The Four Trash Separation Units, Three Headlands Units and the Baby Beach Unit are calibrated annually by JR Environmental Services.

a. Inspect, report, repair and calibrate all of the diversion monitoring equipment.

b. Report any defect and/or illicit discharges/connections found.

2. Monitor and control the diversions based on weather conditions.

    a. 18 diversions within the City.

D. STORM DRAIN VIDEO AND INSPECTIONS

1. Various types of storm drain video/visual inspection have been completed over recent years.

    a. 2013 - all 36” and larger storm drains were inspected.
    b. 2014 - all 36” and below storm drains were inspected.

    c. 2015 & 2016 the City began a storm drain inspection method that identified higher risk areas, such as Coast Hwy, that are inspected on an annual basis. In addition, the City has moved away from inspecting by size of pipe to an inspection by area/zone. The City’s goal is to inspect 50% of all storm drains annually.

    d. City has utilized storm drain inspection services from 4 agencies/Contractors (County of Orange, SCWD, DownStream, Empire.) in order to document existing conditions, status of repairs and investigation.

    e. The City has been working diligently to repair all defects found within the system. This include pipe linings, cleaning, patching and replacement as required. Video inspections are also being done.

    Reports and videos are accumulated and filed for review and processing, and to allow for repairs and other actions.

E. GENERAL CONSIDERATIONS

1. All City and County staff goes through annual BMP training through the County of Orange.

2. The City of Dana Point is a *Hands-On* City and very aware of water quality; we expect all staff to immediately report any and all encounters where materials other than storm water have the potential to enter the storm drain system.

3. The City of Dana Point contracts with Bemus Landscape to provide weekly trash removal on the most heavily traveled streets within the City.

    a. As well as removing trash that could eventually make its way into the storm drain system, the crew also reports any illegal dumping/discharge that they encounter.

4. The City contracts with the County of Orange to provide as needed vacuum services.

    a. Cleaning of low flow drains where debris can build up.

    b. Cleaning of areas where standing water can accumulate.

5. United Storm Water has been under Contract with City for many years providing excellent service. In addition to routine cleaning and inspections, the City budgets for continual upgrades to the storm drain filter system, additional cleanings due to erosion/rockslides and on-call services for emergencies. If any illicit connections or discharges are noted during the catch basin filter inspection or cleaning process, the City is notified.

6. The City has an on call agreement with SCWD to provide emergency response when response time is sensitive and/or large vacuum equipment is needed.

7. The City has an on call agreement with Bonanza Steam cleaning to provide additional clean up services such as the removal or oils, fuel, paint and other materials from the street/sidewalk to prevent materials from entering the storm drain system.

8. The City has implemented a *work order* logging and tracking system.

    a. The system allows the City to track costs, repeat offenders and problem areas.

SUMMARY

Because the City of Dana Point is relatively small in area, staff is able to visually inspect the vast majority of City areas on a weekly basis. The City staff is fully aware that the over-all appearance of the City and the quality of the water in the ocean is a major factor in what makes Dana Point a desirable beach and ocean recreation community. With that in mind the staff is keenly focused as they make their way through the City, this includes City Council, the City Manager, as well as all the staff that is routinely in the field.

Exhibit 5.4

Avoiding Invasive Plants in the City of Dana Point

The temperate climate, broad range in elevation and latitude, and rich soils found in California sustain a rich diversity of native plants throughout the state. This same rich environment can support many species of plants from around the world. Some are beautiful and useful, while others become invasive pests. Invasive plants are fierce competitors that threaten California's native biodiversity and ecosystems. Unfortunately, about 450 plants originally imported for use in ornamental horticulture in California have migrated from their original locations and have created serious environmental problems.

Without the natural controls found in their place of origin, invasive plants move quickly into watersheds, invading our natural open spaces and agricultural land. In the home garden they can become a significant weeding chore, but even more importantly, their infiltration into natural open spaces and agricultural areas are a disaster for land stewards and a financial drain for both farmers and consumers. Natural landscapes, waterways and recreation areas are impacted by decreased quality of animal habitat and increased risk of wildfires as invasive plants take over and crowd out native vegetation. The costs to manage the problem are overwhelming. Invasive plants are the second greatest threat to biodiversity and ecosystems after human caused habitat destruction.

This guide has been prepared to help identify invasive plants that are of highest concern in the City of Dana Point, in order to discontinue their use and encourage eradication.

What is an "invasive" plant?

Invasive plants are species that are non-native (i.e. "exotic" or have been introduced from other regions) and cause or are likely to cause harm to the environment, economics and/or human health.

What is the concern with invasive plants?

Invasive plants displace native plants and wildlife, causing disruption of natural ecosystem processes which can result in increased wildfire, flood danger and erosion. Invasive plants can also c*log valuable waterways, degrade recreational opportunities, and destroy productive range and timber lands.*

What invasive plants should I be concerned about?

The City prohibits the planting of the following invasive plants. This information has been compiled for simplicity from the best resources available and is subject to change with priorities and time.

List of Top 25 Invasive Plants Observed in the City of Dana Point – Text Only

(a table with photos and notes follows)

The City prohibits the planting of the following invasive plants.

Botanical Name	Common Name
Acacia longifolia	Sydney golden wattle, golden wattle
Anagallis arvensis	Scarlet Pimpernel
Arundo donax	Arundo, Giant Reed, Giant Cane,
Asparagus asparagoides	Bridal Creeper / Wild Asparagus / Asparagus Fern
Brassicaceae spp. *(Cruciferae)*	Mediterranean Hoary Mustard, Summer Mustard, Wild mustard, short podded mustard
Carpobrotus edilus	Iceplant, Highway iceplant, Hottentot fig, sea fig
Centaurea solstitialis	Yellow Star-thistle
Cortaderia selloana	Pampas Grass
Cynara cardunculus	Artichoke Thistle
Eucalyptus spp.	Eucalyptus
Ficus carica	Edible Fig
Foeniculum Vulgare	Fennel, Sweet Fennel, Wild Fennel, Biscuit Root
Genista monspessula-na	French Broom, Broom, Genista
Hypericum canariense	St. John's Wort, Canary Island hypericum
*Limonium perezii**	Perez's Sea Lavender *Note: At this time, this is prohibition is limited to parcels adjacent to the Headlands Biological Open Space.
Malephora crocea	Croceum Iceplant
Mesembryanthemum crystallinum	Crystalline Ice Plant
Myoporum laetum	Myoporum, Mousehole Tree, Ngaio Tree
Nicotiana glauca	Tree Tobacco
Oxalis pescaprae	Bermuda Buttercup
Raphanus sativus	Wild Radish
Ricinus communis	Castor Bean
Salsola tragus	Russian Thistle
Spartium junceum	Spanish Broom
Tamarix spp.	Salt Cedar, Tamarisk

List of Top 25 Invasive Plants Observed in the City of Dana Point with Photos & Notes

The City prohibits the planting of the following invasive plants.

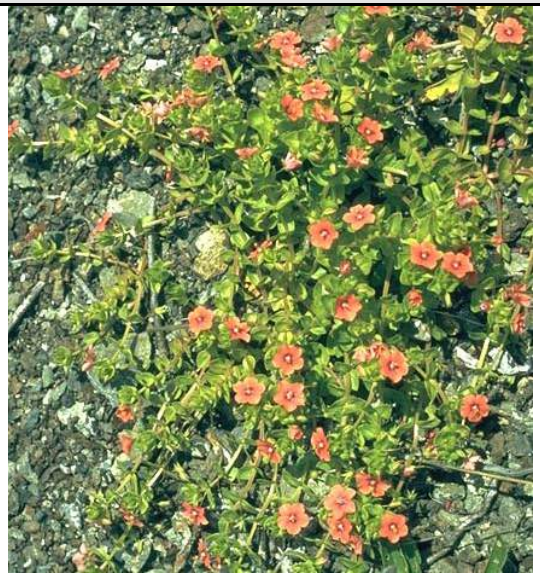
Common Name	Botanical Name	Photo(s)	Notes
Bridal Creeper / Wild Asparagus / Asparagus Fern	*Asparagus asparagoides*	 © 2011 P.Roullard.	Plant shoots can form dense mats that limit light levels and then die back in the summer, creating a fire hazard. Plant colonies may also form a dense tuberous mat underground, preventing other plants from accessing soil moisture and nutrients.
Castor Bean	*Ricinus communis*	 © Br. Alfred Brousseau	*Ricinus communis* grows easily and quickly in our mild climate. One plant can produce at least 10,000 seeds. Once established in riparian areas, it can be difficult to control. It seeds within 3-6 months and quickly produces multiple generations within one year. Seeds can also be poisonous to wildlife. It is difficult to confine to landscaped areas, and is not recommended for landscaping. Castorbean contains ricin, an extremely toxic chemical that can kill an adult who consumes only four to eight seeds. Handling foliage and seeds can cause severe dermatitis.

Common Name	Botanical Name	Photo(s)	Notes
Mediterranean Hoary Mustard, Summer Mustard, Wild mustard, short podded mustard	*Brassicaceae* spp. *(Cruciferae)*		This plant grows profusely and may produce allelopathic chemicals that inhibit germination of native plants.
Yellow Star-thistle	*Centaurea solstitialis*	 © 2008 Luigi Rignanese	Yellow starthistle inhabits open hills, grasslands, open woodlands, fields, roadsides, and rangelands, and it is considered one of the most serious rangeland weeds in the state. It propagates rapidly by seed, and a large plant can produce nearly 75,000 seeds.

Common Name	Botanical Name	Photo(s)	Notes
Giant Reed, Giant Cane, Arundo	*Arundo donax*	 J. Giessow, www.cal-ipc.org  © 2002 David Graber	*Arundo donax* is a tall perennial grass that has severe ecological impacts on ecosystems, plant and animal communities. Its reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. It sometimes occupies entire river channels from bank to bank. It displaces native plants and associated wildlife species because of the massive stands it forms. It is also believed to alter hydrological regimes and reduce groundwater availability and presents fire hazards due to the massive quantity of fuel available, often near urban areas.

Common Name	Botanical Name	Photo(s)	Notes
Artichoke Thistle	*Cynara cardunculus*	 © Br. Alfred Brousseau, Saint Mary's College	Artichoke thistle prefers disturbed open sites, including grassland, chaparral, coastal scrub, and riparian areas. This thistle is closely related to cultivated artichokes (Cynara scolymus), and the two species hybridize frequently. Artichoke thistle is also sometimes grown as an ornamental plant, and is available commercially. It reproduces by seed and sometimes by resprouting from root fragments. When attempting control by mechanical removal, most of the plant's large taproot must be removed to avoid resprouting.
Crystalline Ice Plant	*Mesembryant -hemum crystallinum*	 © Joseph Dougherty, M.D./ecology.org	Crystalline iceplant inhibits the growth of native plants by accumulating salt in the soil and by leaving behind mats of dry plant matter that may take several years to decompose.

Common Name	Botanical Name	Photo(s)	Notes
Russian Thistle	*Salsola tragus*	 © 2010 Jean Pawek	Russian-thistle can impede traffic, create fire hazards, and is a host of the beet leaf-hopper, an agricultural insect pest.
St. John's Wort, Canary Island hypericum	*Hypericum canariense*	 © Br. Alfred Brousseau, Saint Mary's College	Canary Island hypericum infests disturbed areas, especially in coastal sage scrub and grassland habitats. This ornamental shrub forms dense stands that exclude native species.

Common Name	Botanical Name	Photo(s)	Notes
Scarlet Pimpernel	*Anagallis arvensis*	 © Br. Alfred Brousseau, Saint Mary's College	The low growth and small root system of A. arvensis suggest that it is not a very competitive weed. However, it may germinate early in spring before other plants become established, develop into dense masses, and thereby suppress the early growth of other native plants.
Bermuda Buttercup	*Oxalis pescaprae*	 © Br. Alfred Brousseau, Saint Mary's College	Due to its extensive occurrence in yards and gardens, Bermuda Buttercup has the potential to rapidly spread via the production of bulbs and the movement of contaminated soils into adjacent natural areas and it is practically impossible to eradicate infested soils of this weed.

Common Name	Botanical Name	Photo(s)	Notes
Pampas Grass	*Cortaderia selloana*		Pampas grass competes with native vegetation, reduces the aesthetic and recreational value of these areas, and also increases the fire potential with excessive build-up of dry leaves, leaf bases, and flowering stalks. Each plume produces up to 100,000 seeds that are widely dispersed by wind and develop without fertilization. Vast root systems dominate soil.
Tree Tobacco	*Nicotiana glauca*	 Dr. Samuel J. Pusateri © California Academy of Sciences	*Nicotiana glauca* poses a threat to biodiversity by competing with native species for resources and displacing native plants. All parts of the plant are poisonous.

Common Name	Botanical Name	Photo(s)	Notes
Myoporum, Mousehole Tree, Ngaio Tree	*Myoporum laetum*	 Dr. G Dallas & Margaret Hanna ©California Academy of Sciences. 	This is fast growing, adaptable, 15 to 30 foot tall evergreen shrub shading, that shades, outcompetes and displaces native species. Its heavy seed production results in dense monocultures. Birds disperse seeds over long distances resulting in rapid expansion of infested areas. Leaves and fruits are potentially toxic to wildlife. It can survive periods of drought.

Common Name	Botanical Name	Photo(s)	Notes
Iceplant, Highway iceplant, Hottentot fig, sea fig	*Carpobrotus edilus*	 Carsten Niehaus	Iceplant tolerates a range of soil moisture and nutrient conditions and competes directly with several threatened or endangered plant species for nutrients, water, light, and space In addition, it can lower soil pH in loamy sand. It can reproduce both vegetatively and by seed. Seed production is high, with hundreds of seeds produced in each fruit. Fruits mature on the plant and are eaten by mammals such as deer, rabbits, and rodents. Because of the ability to produce roots and shoots at every node, any shoot segment can become a propagule.
Salt Cedar, Tamarisk	*Tamarix* spp.	 © 2006 J. G. Riend	Tamarisk species spread easily to natural areas and once established in natural lands or open spaces it directly competes with native plants. It alters stream hydrology and soil salinity, and it uses more water then native plants, lowering the water table. It can reproduce by seed and vegetative growth, roots also sprout adventitiously; individual plants can produce 500,000 tiny seeds per year, which are easily dispersed by wind and water.

Common Name	Botanical Name	Photo(s)	Notes
Wild Radish	*Raphanus sativus*	 ©Rebecca Snyder http://www.fallbrooksource.com	*Raphanus sativus* is an annual or occasionally a perennial that frequently invades grasslands and open/disturbed areas, including roadsides in California. Wild radish may also be found in wetland areas. Wild radishes are capable of excluding native plant species and are, on rare occasion, toxic to livestock.
Croceum Iceplant	*Malephora crocea*	 © Br. Alfred Brousseau, Saint Mary's College	A long-blooming, sturdy, succulent groundcover, resistant to fire, heat and drought, *Malephora crocea* is well adapted to the coastal and foothill climates and is tolerant of a wide variety of soil conditions. It is frequently used as ground cover for erosion control. Naturalizes and invades vegetatively by creeping into adjacent areas, or breaks off and can be transferred through storm drains to establish a foothold in wetland areas downstream.

Common Name	Botanical Name	Photo(s)	Notes
Fennel, Sweet Fennel, Wild Fennel, Biscuit Root	*Foeniculum Vulgare*	 © 2011 Barry Breckling	Fennel can drastically alter the composition and structure of many plant communities, including grasslands, coastal scrub, riparian, and wetland communities. It grows quickly, out-competing native plants for sunlight and water. It is still unclear whether culinary varieties of fennel are invasive. The ability of this species to tolerate heat, aridity, wind, salt spray and drought has facilitated its spread throughout the watershed.
Sydney golden wattle, golden wattle	*Acacia longifolia*	 © 2002 Dean Wm. Taylor	This species is able to tolerate heat, aridity, wind, salt spray and drought. It has been used extensively for landscaping along freeways and has spread into watersheds.

Common Name	Botanical Name	Photo(s)	Notes
Spanish Broom	*Spartium junceum*	 © 2006 Luigi Rignanese	Spanish Broom rapidly colonizes disturbed habitats and develops thick shrub communities that prevent colonization by native soft or hard chaparral species. Stands contain a large amount of dead wood and can become a fire hazard in dry months. It is also poor forage for wildlife species.
French Broom, Broom, Genista	*Genista monspessula-na*	 © Br. Alfred Brousseau, Saint Mary's College	French broom is an aggressive invader, forming dense stands that exclude native plants and wildlife. This species produces dense, long-lived seed banks making eradication difficult.

Common Name	Botanical Name	Photo(s)	Notes
Eucalyptus	*Eucalyptus* spp.	 Shelagh Fritz, www.nps.gov/goga/photosmultimedia/index.htm	Native plants are unable to grow underneath groves of eucalyptus. This has been attributed to either the thick litter layer that can develop, or perhaps an allelopathic effect. *Eucalyptus globulus* also contributes to the spread of fire because of its characteristic long, stringy bark.
Edible Fig	*Ficus carica*	 @ 2005 Luigi Rignanese (CalPhotos)	*Ficus carica* (edible fig) is a shrub to tree (family Moraceae). Research is underway to determine which cultivars of fig become invasive.

Common Name	Botanical Name	Photo(s)	Notes
Perez's Sea Lavender* *Note: At this time, this is prohibition is limited to parcels adjacent to the Headlands Biological Open Space.	*Limonium perezii*	 © Br. Alfred Brousseau, Saint Mary's College	Sea Lavender is fully adapted to mild and dry coastal climates and grows easily in seaside gardens. It is these characteristics that have enabled this plant to escape cultivation and grow on dunes and bluffs in coastal areas.1 Because of its ability to grow and spread in coastal and riparian areas, it is not recommended for landscaping adjacent to these areas.

NOTE:

This list is not exhaustive and has been condensed from the best available local resources used in the industry. The intent of the list is to provide a short and simple list of invasive plants that pose the biggest threat to our City. The Guide is provided solely for informational purposes and is not intended to be a standard. The city of Dana Point shall not be liable for errors of fact or omission with regards to the data contained herein or for damages resulting from the use of information contained in the Guide.

For a more comprehensive list of invasive plants, along with other information, please refer to the following resources: www.cal-ipc.org, www.plantright.org, www.calflora.org, *Nonnative Invasive Plants of the Pacific Coast Forests, A Field Guide for Identification*, USDA, May 2011, http://weedwatch.lasgrwc.org, OC Natural History at http://nathistoc.bio.uci.edu/, and the *San Diego County Invasive Ornamental Plant Guide*.

This Guide is intended to be a living document to ensure the most up-to-date information on current conditions. If you have any questions, please visit the Dana Point Nature Interpretive Center at 34558 Scenic Drive, Dana Point or contact the City's Natural Resource Protection Officer at 949-542-4755. Thank you for your interest.

Last Update: May 2012

Exhibit 5.5

CITY OF DANA POINT

PUBLIC WORKS & ENGINEERING SERVICES
33282 Golden Lantern
Dana Point, CA 92629
949.248.3554 • www.danapoint.org

SLOPE STABILIZATION PLANTING RECOMMENDATIONS

NOTE: COASTAL BLUFFS MUST MEET BOTH REQUIREMENTS

Scientific Name	Common Name	Meets Orange County Fire Protection Zone Requirements	Additional Coastal Bluff Requirement Meets Coastal Commission Requirements
Aptenia cordifolia	Heartleaf Iceplant	X	
Arctostaphylos edmundsii	Little Sur Manzantia	X	X
Arctostaphylos glandulosa ssp.	Eastwood Manzantia	X	X
Arctostaphylos hookeri 'Monterey Carpet'	Monterey Carpet Manzantia	X	X
Arctostaphylos 'Pacific Mist'	Pacific Mist Manzantia	X	X
Arctostaphylos uva-uris	Bearberry	X	X
Atriplex lentiformis breweri	Quailbush or Saltbush	X	
Baccharis pilularis Twin Peaks	Dwarf Coyote Bush 'Twin Peaks'	X	
Ceanothus	Wild Lilac	X	X
Cotoneaster	Several varieties	X	
Encelia californica	Brittlebush	X	X
Heteromeles arbutifolia	Toyon	X	X
Iva Hayesiana	Poverty weed	X	X
Lanatana	All Varieties	X	
Opuntia littoralis	Prickly Pear	X	
Plumbago auriculata	Cape Plumbago	X	

The above plants are provided as recommendations only. Professional consultation with an erosion control specialist or landscape architect is encouraged to identify your specific slope landscape needs and design a plant palette suitable for your property.

CITY OF DANA POINT

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WATER QUALITY REQUIREMENTS FOR LANDSCAPE IRRIGATION

To comply with required State storm water regulations (Order No. R9-2013-0001) which prohibit water runoff from your property due to irrigation activities, the following Best Management Practices (BMPs) are required for all irrigation systems. Please be aware, however, that implementation of these strategies by themselves does not necessarily guarantee compliance. Additional actions may be needed to fully control surface water runoff. The BMPs, along with the "Implementation Strategies" and "Other Tips & Techniques" are designed to prevent water runoff from your property from entering the public storm drain system. Please remember that these requirements are in place to protect and improve our beaches, creeks, and the ocean. Please contact Lisa Zawaski at 949-248-3584 for more info.

Required Best Management Practices (BMPs) for Landscape Irrigation

1. Implement all feasible measures to eliminate surface runoff of landscape irrigation water.
2. Comply with water conservation, drought response and waste prohibition regulations of your Water District.

IMPLEMENTATION STRATEGIES

1. Implement all feasible measures to eliminate surface runoff of landscape irrigation water.

A. Ensure that persons responsible for landscape maintenance are aware of irrigation management techniques for pollution and runoff prevention.

B. Replace irrigation controller batteries in the spring and fall, or as needed.

C. Inspect the irrigation system monthly, while it is operating, to identify leaks and to determine if runoff is occurring.

D. Promptly repair any leaks or breaks. Faulty systems must be turned off until adequate repair is made. If bailing of muddy water is required (e.g. when repairing a water line leak), do not put it in the gutters as it enters the storm drain. Pour over landscaped areas instead.

E. Adjust sprinkler heads and nozzles to avoid over-spray into gutters or onto pavement (driveways, sidewalks or streets) and/or other impervious areas.

F. Reduce irrigation run-time, as necessary, to prevent runoff. This may require running more cycles for shorter times and allowing adequate time in between cycles to give the soil time to absorb the water. Cycles may be less than 3 minutes depending on landscaping sprinkler precipitation rates, soil type and topography/slope.

G. Adjust the watering schedule seasonally to reflect reduced winter water demand. Visit www.bewaterwise.com/calculator.html to find customized watering schedules for your landscape.

H. Do not water when rain is predicted, or when the ground is adequately moist from rainfall.

2. **Comply with water conservation, drought response and waste prohibition regulations of your Water District.**

   A. Adhere to the watering schedule restrictions designated by your Water District, as appropriate to drought conditions. For more information on Water District requirements contact the Water District for your area:

   - South Coast Water District at 949-499-4555 or see www.scwd.org.
   - Moulton Niguel Water District at 949-831-2500 or see www.mnwd.com.
   - San Juan Capistrano Utilities Department at 949-487-4304 or see www.sanjuancapistrano.org.

OTHER BENEFICIAL TIPS & TECHNIQUES

1. **Consider upgrading your irrigation system and components to increase irrigation efficiency and reduce runoff.**

   A. Replace old timer-based irrigation controllers with weather-based self-adjusting controllers. Rebates may be available. For more information go to: http://www.bewaterwise.com/.

   B. Install sprinkler heads with a low precipitation flow rate and/or a more adjustable spray pattern or radius as needed. Rebates may be available. For more information go to: http://www.bewaterwise.com/.

   C. Install popup sprinkler heads in areas with a lot of activity and/or where risers may be easily broken.

   D. Install water-efficient drip irrigation systems for trees, shrubs and flowers.

   E. Install a flow sensor that will shut-off water in case of breakages in the system.

   F. Install an automatic rain shut-off sensor.

   G. Install check valves for sprinkler heads at the bottom of slopes to eliminate low-head drainage.

   H. Relocate spray heads to provide a six (6) inch buffer zone between pavement and landscape areas.

2. **Consider reducing the need for irrigation.**

   A. Add a thick layer of mulch (at least 2-3 inches), two to three times per year, around trees and plants to minimize runoff, reduce evaporation, and minimize weed growth.

   B. Add compost as a soil amendment to increase water retention.

   C. Replace turf areas with drought tolerant shrubs and groundcover, synthetic turf, gravel, or other permeable surfaces, etc.

   D. Aerate soil in spring and fall to help retain rainfall.

City of Dana Point

Fireworks Best Management Practices Plan

(FBMPP)

January 2023

Pursuant to Order No. R9-2022-0002, NPDES No. CAG999002, General National Pollutant Discharge Elimination System (NPDES) Permit for Residual Firework Pollutant Discharges to Waters of the United States in the San Diego Region from the Public Display of Fireworks

San Diego Water Board's Notice of Applicability (NOA): **9 000002287**

Fireworks Best Management Practices Plan (FBMPP)

Purpose and Scope of this Document

The purpose of this document is to outline the **Best Management Practices** (**BMPs**) that are required to be implemented for public "over water" displays of fireworks as hosted by the City of Dana Point. Each of the BMPs in this document, when used appropriately, will help to minimize water quality impacts from public firework events.

The City has evaluated potential options for firing ranges. The City hosts only one show per year from a barge and has selected an over water display to avoid potential fire hazards on land and provide greater public access. The location is located a sufficient distance from known areas designated as Areas of Special Biological Significance (ASBS). The location is not in the vicinity of waters with Total Maximum Daily Load(s) (TMDL) for firework constituents as identified in Order. No. R9-2022-0002.

Best management Practices (BMPs)

BMPs are practices and procedures intended to provide an effective and practical means of preventing or reducing the amount of debris and pollutants added to the environment. The following items are BMPs that shall be implemented for City-hosted fireworks displays over water:

1. The **Vendor** shall coordinate with, and secure any required permits, from with the Orange County Fire Authority, U.S. Coast Guard, County of Orange Harbor Patrol, Dana Point Harbor Patrol and comply with all local and state regulations, including Homeland Security. The Vendor shall be licensed by the State and set up, discharge and take down the fireworks and fireworks in accordance with the laws and regulations.

   Note: The City has coverage under R9-2022-0002, NPDES No. CAG999002, General National Pollutant Discharge Elimination System (NPDES) Permit for Residual Firework Pollutant Discharges to Waters of the United States in the San Diego Region from the Public Display of Fireworks, Notice of Applicability (NOA): **TBD**

   The **Vendor** must comply with the City's Fireworks Best Management Practices Plan (FBMPP) herein for all BMPs noted **Vendor**.

2. All required permits, licenses and approvals shall be obtained from the authorities having jurisdiction over the fireworks display, and the parties responsible under applicable law and regulation shall comply with the requirements and conditions of those permits and licenses. All equipment used to hold and launch the fireworks shall be secured properly in accordance with applicable laws and regulations and in such a way as to minimize the risk that the equipment and fireworks would fall into the water. Barges and floating platforms shall be inspected for leaks and other potential safety issues. Other than system firing cables and common or grounding wires intended to be recovered after the display,

electric igniter wires used to trigger the fireworks shall be secured to minimize the risk that the wires would fall into the water during or after the discharge. As soon as practicable, and no later than 24 hours following a display of fireworks, the decks of each barge or floating platform that contained fireworks shall be raked or swept to collect fireworks debris and prevent it from being deposited into the water. (**Vendor**)

3. Whenever practicable and feasible, the use of alternative fireworks produced with new pyrotechnic formulas that replace perchlorate with other oxidizers and propellants that burn cleaner, produce less smoke, and reduce pollutant loading to surface waters shall be considered. The City can inquire regarding the availability and potential use of alternative fireworks when discussing product selection with the Vendor(s).

4. If present, and whenever practicable, feasible, and safe, the **Vendor** shall remove all plastic and aluminum labels and wrappings from aerial shells and special effect pyrotechnic devices prior to use and before they are launched or detonated and properly dispose or recycled them.

5. Whenever practicable and feasible, the **Vendor** shall select fireworks that do not contain plastic outer casings or have non-biodegradable inner components that make up more than five percent of the mass of the shell/device.

6. As soon as practicable and feasible, and no later than 24 hours following a display of fireworks, particulate matter and debris from ignited and un-ignited pyrotechnic material including aerial shells, stars (small pellets of composition that produce color pyrotechnic effects), paper, cardboard, wires, and fuses found during inspection of the entire firing range and adjacent affected surface shall be collected, removed, and managed, to the extent practical by the **Vendor**. **Vendor** shall comply with California State Fireworks Regulations, Title 19.

7. Immediately following a display of fireworks, all hazardous fireworks waste (including duds) and pyrotechnics waste resulting from the set-up, firing, and strike of the display, shall be handled and managed by **Vendor** in accordance with applicable fireworks and hazardous waste laws and regulations.

8. All non-hazardous solid waste resulting from the set-up, firing and strike of the display, including wires, boxes and packaging, shall be collected to the extent practicable so the wind does not carry it into adjacent surface waters and properly disposed of by **Vendor**.

9. Fireworks shall be packaged, transported, stored, set-up, and handled in accordance with 19 CCR Division 1, Chapter 6, Fireworks and 22 CCR Chapter 33, Best Management Practices for Perchlorate Materials to prevent or minimize firework pollutants from entering surface waters (**Vendor**).

10. The **Vendor** shall ensure that all personnel implementing the applicable BMPs shall be familiar with the BMPs in this FBMPP, and properly trained regarding BMP implementation. The **Vendor** shall ensure that adequate BMP equipment and supplies will be available for the fireworks event. These items include brooms, rakes and/or net or other collection device and trash bags for the collection of debris and adequate lighting to locate and retrieve debris at night.

11. The **Vendor** shall complete the **Visual Monitoring Report Form (Attachment 1)** within an hour after event, and provide the information to complete or complete the attached forms, **Post-Fireworks Display Log (Attachment 2)** and the **Display of Fireworks Post-Event Report Form (Attachment 3)**. The forms or information shall be provided to the City within 7 days of the event. The **Fire Authority Report** shall also be completed and submitted to the Orange County Fire Authority by the **Vendor**.

12. As soon as practicable, the City shall collect visual observations to assess the effectiveness of the BMPs and update the FBMPP accordingly. All FBMPP changes must be submitted to the San Diego Water Board.

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ATTACHMENT C-1 – VISUAL MONITORING REPORT

Visual monitoring shall occur within and adjacent to the firing range, and at the shoreline most likely to accumulate fireworks debris based on the prevailing wind, current, and tides. When practical and feasible, the Discharger shall conduct visual monitoring within one hour following the end of the fireworks event. The Discharger must conduct visual monitoring in the morning of the day immediately following the fireworks event.

The Discharger shall complete and electronically submit this form no later than 30 days following the end of the month in which the display of fireworks event occurred and with the Annual Report (due August 30 each year) using the State Water Board's California Integrated Water Quality System (CIWQS) Program website (https://www.waterboards.ca.gov/water_issues/programs/ciwqs).

Date of the Visual Monitoring:	**Time:** AM/PM
Surface Water Conditions	
Describe floatable fireworks debris (if any):	
Weather: ☐ Cloudy ☐Sunny ☐Rainy	
Wind direction:	**Wind Speed:**
Tide Direction:	**Tidal Conditions:** High ☐ Low
Presence of: ☐ Discoloration ☐ Oil and Grease ☐ Turbidity ☐ Odor ☐ Other (if any of the above is marked, please describe):	

ATTACHMENT C-2 – POST-FIREWORKS DISPLAY LOG

The Post-Fireworks Display Log shall be completed within ten (10) calendar days following each public fireworks event and shall be made available to the San Diego Water Board upon request. The Discharger shall electronically submit this form 30 days following the end of the month in which the display of fireworks event occurred and with the Annual Report (due August 30 each year) using the State Water Board's California Integrated Water Quality System (CIWQS) Program website (https://www.waterboards.ca.gov/water_issues/programs/ciwqs).

Date of Display:	**Start Time:**	AM/PM
	End Time:	AM/PM
Name of Organization Hosting the Event		
Location of the Public Fireworks Event – GPS Coordinates		
Latitude:	Longitude:	
Affected Receiving Water(s):		
Pyrotechnic Operators[1]		
Name	License Number	
1.		
2.		
3.		
Amount of debris collected from the firing range: _____ lb dry weight		
Amount of floating debris collected from adjacent surface water(s): _____lbs wet weight _____lbs dry weight (if known)		
I certify under penalty of law that the Fireworks Best Management Practice Plan (FBMPP) prepared for this event was fully implemented.		
Printed Name and Title:		
Signature:	**Date:**	

[1] Attach additional sheets if necessary

ATTACHMENT C-3 – DISPLAY OF FIREWORKS POST-EVENT REPORT FORM

This form shall be completed and submitted no later than thirty (30) days following the end of the month in which a public display of fireworks event occurred. This form shall also be submitted in the Annual Report (due August 30 each year) to the San Diego Water Board in accordance with the schedule outlined in section 10.2.3 of the Monitoring and Reporting Program (Attachment E) or when requested by the San Diego Water Board.

The Discharger shall electronically submit this form using the State Water Board's California Integrated Water Quality System (CIWQS) Program website (https://www.waterboards.ca.gov/water_issues/programs/ciwqs).

<table>
<tr><td colspan="2">Name of Organization Hosting the Event</td><td>WDID No.</td></tr>
<tr><td colspan="3">Contact Person for Organization Hosting the Event:
Name:
Phone Number:
Email:</td></tr>
<tr><td colspan="2">Location of Event – Address and GPS Coordinates:</td><td rowspan="2">Name of Receiving Water(s):</td></tr>
<tr><td>Latitude</td><td>Longitude</td></tr>
<tr><td>Date of Display:</td><td colspan="2">Time of Display:
From: (AM / PM) To: (AM / PM)</td></tr>
<tr><td colspan="3">Map. Attach a map or diagram identifying the firing range, adjacent shorelines, quays, and docks, any other appropriate features of the firing range and adjacent affected surface water(s). The firing range is that area over which fireworks may travel by design or accident and upon which firework pollutants may fall. It includes the fireworks launching area and adjacent shorelines, quays, docks and the fireworks fallout area.</td></tr>
<tr><td colspan="3">Name and License No. of Pyrotechnic Operators:</td></tr>
<tr><td colspan="3">1.</td></tr>
<tr><td colspan="3">2.</td></tr>
<tr><td colspan="3">3.</td></tr>
</table>

Particulars of Display						**Low Level Items**		**Ground Displays**	
Shell Size	No. Single Breaks	No. Multi Breaks	Shell Size	No. Single Breaks	No. Multi Breaks	Type	Qty	Type	Qty
25 mm			7”			Mines		Sets	
80 mm			8”			Romans		Devices	
2”			9”			Comets			
3”			10”			Cakes			
4”			11”						
5”			12”						
6”									

Net Explosive Weight:

Were alternative fireworks used? If so, indicate which fireworks were environmentally friendly.

Defective Shells - List Manufacturer's Name, Size of Shell, and Malfunction.[1]

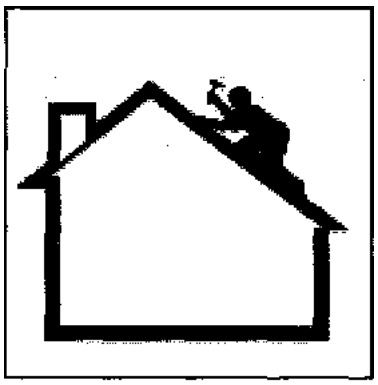
Were the entire firing range (including the fireworks launching area, adjacent shorelines, quays, docks and the fireworks fallout area), barge(s) (if used) and adjacent surface water(s) inspected and cleaned of particulate matter and debris from ignited and un-ignited pyrotechnic material within 24 hours following the display?

Yes Date _____ Time _____
No

If no, explain:

[1] The Discharger may attach a copy of the Pyrotechnic Operator Post Display Report submitted to the Office of the State Fire Marshall to satisfy this requirement.

Amount of debris collected from the firing range:_____lbs dry weight	
Amount of floating debris collected from adjacent surface water(s): _____lbs wet weight _____lbs dry weight (if known)	
I certify under penalty of law that the information provided in this application and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those directly responsible for gathering the information, the information submitted is true, accurate, and complete to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the provisions of the permit, including the criteria for eligibility will be complied with.	
Printed Name and Title:	
Signature:	**Date:**



FF-2

BUILDING MAINTENANCE AND REPAIR

Stormwater runoff from building repair, remodeling, and other maintenance activities can be contaminated with toxic hydrocarbons in solvents, other toxic organic compounds, suspended solids, heavy metals, abnormal pH, and oils and greases. Specific activities may involve one or more of the following:

1. **Building Maintenance**
2. **Material Storage**
3. **Building Cleaning**
4. **Graffiti Cleaning**
5. **Painting**

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for building maintenance and repair include:

- Use dry cleaning methods whenever feasible.
- Use a waterless and non-toxic chemical cleaning method for graffiti removal.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

1. Building Maintenance

General Guidelines

See Minor Construction procedure sheet

✓ Review maintenance activities to verify that they minimize the amount of pollutants discharged. Keep accurate maintenance logs to evaluate materials removed and improvements made.

✓ If when repairing roofs, small particles have accumulated in the gutter, either sweep out the gutter or wash the gutter and trap the particles at the outlet of the downspout. A sock or geofabric placed over the outlet may effectively trap the materials. If the downspout is tight lined, place a

temporary plug at the first convenient point in the storm drain and pump out the water with a vactor truck and clean the storm drain inlet where you placed the plug if necessary.

- ✓ If water is used for cleaning out gutters, seal storm drain inlets to prevent water from entering. Either direct the water to a landscaped area or dispose of properly.
- ✓ When the work involves exposing large areas of soil, employ the appropriate soil erosion and control techniques.
- ✓ Clean storm drain inlets in the immediate vicinity of the construction activity after it is completed if necessary.

OPTIONAL:

- Recycle residual paints, solvents, lumber, and other materials

Good Housekeeping

- ✓ Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep the area.
- ✓ Cover materials of particular concern that must be left out, particularly during the rainy season.
- ✓ Do not dump waste liquids down the storm drain.
- ✓ Properly dispose of wash water, sweepings, and sediments; do not allow these materials to enter the storm drain.

Spill Response

Also see Spill Prevention and Control procedure sheet

- ✓ Clean up spills immediately.
- ✓ If a spill occurs on dirt, excavate and remove the contaminated (stained) soil.

2. Material Storage

Also see Material Storage/ Handling/ Disposal procedure sheet

- ✓ Properly store and cover materials that are normally used in repair and remodeling such as paints and solvents, to protect them from rain.
- ✓ Properly store and dispose waste generated from the activity.

3 Building Cleaning

General Guidelines

- ✓ When cleaning building exteriors and walls composed of glass, steel, or painted surfaces with no lead or mercury:
  - Do not allow wash water to enter the storm drain.
  - When washing without soap, discharges can be directed to landscaped or dirt areas.

→ *Note: Permission must be obtained for any discharge of wash water to the sanitary sewer from the local sewering agency.*

  - When washing with soap, direct discharges to the sanitary sewer if permitted to do so or vacuum/pump water to a tank and dispose of properly

✓ When washing building exteriors painted with lead-based or mercury additive paint:

  - Do not allow discharges to enter storm drain
  - Vacuum/pump discharges to a tank
  - Dispose of as a hazardous waste as needed

✓ When acid washing mineral deposits:

  - Do not allow discharges to enter storm drain.
  - Rinse treated area with alkaline soap and direct washwater to a landscaped or dirt area
  - Alternatively, washwater may be collected and neutralized to a pH between 6 and 8, and disposed of properly.

OPTIONAL:

- If cleaning agents are used, select biodegradable products whenever feasible.

4. Graffiti Cleaning

Graffiti Removal

Also see Roads, Streets, and Highways Operation and Maintenance procedure sheet.

✓ Avoid graffiti abatement activities during rain events.

✓ When graffiti is removed by painting over, implement the procedures under Painting and Paint Removal in the *Roads, Streets*, and *Highway Operation and Maintenance* procedure sheet.

✓ Protect nearby storm drain inlets prior to removing graffiti from walls, signs, sidewalks, or other structures needing graffiti abatement. Clean up afterwards by sweeping or vacuuming thoroughly, and/or by using absorbent and properly disposing of the absorbent.

✓ Note that care should be taken when disposing of waste since it may need to be disposed of as hazardous waste.

✓ OPTIONAL:

✓ Consider using a waterless and non-toxic chemical cleaning method for graffiti removal (e.g. gels or spray compounds).

5. Painting

General Guidelines

✓ Develop paint handling procedures for proper use, storage, and disposal of paints.

✓ Painting operations should be properly enclosed or covered to avoid drift.

- ✓ If transporting paint and materials to and from job sites, use containers with secure lids and tie down to the transport vehicle.
- ✓ Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint container.
- ✓ Mix paint indoors before using so that any spill will not be exposed to rain. Do so even during dry weather because cleanup of a spill will never be 100% effective.
- ✓ Transfer and load paint and hot thermoplastic away from storm drain inlets.
- ✓ Replace paints containing lead or tributyltin with less toxic alternatives.
- ✓ Where there is significant risk of a spill reaching storm drains, plug nearby storm drain inlets prior to starting painting and remove plugs when job is complete.
- ✓ If sand blasting is used to remove paint, cover nearby storm drain inlets prior to starting work and collect wash water and dispose of properly.
- ✓ If painting requires scraping or sand blasting of the existing surface, use a ground cloth to collect the chips. Dispose of the residue properly.
- ✓ If using water based paints, clean the application equipment in a sink that is connected to the sanitary sewer.
- ✓ Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal. Waste solvents or oil based paints must be disposed of as hazardous waste.

Paint Disposal

- ✓ Paints containing lead or tributyl tin are considered a hazardous waste and must be disposed of at an appropriate hazardous waste facility.
- ✓ Properly store leftover paints if they are to be kept for the next job.

OPTIONAL:

- Recycle paint whenever possible.

LIMITATIONS:

Safer alternative products may not be available, suitable, or effective in every case.

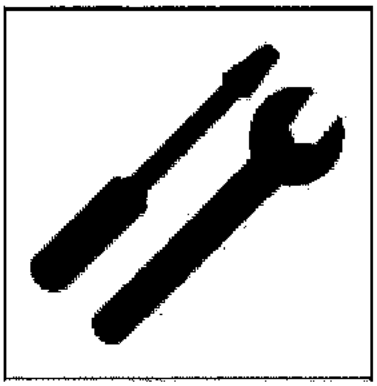
REFERENCES:

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.



FF-3

EQUIPMENT MAINTENANCE AND REPAIR

Vehicle or equipment maintenance has the potential to be a significant source of stormwater pollution. Engine repair and service (parts cleaning, spilled fuel, oil, etc.), replacement of fluids, and outdoor equipment storage and parking (dripping engines) can all contaminate stormwater. Conducting the following activities in a controlled manner will reduce the potential for stormwater contamination:

1. **General Maintenance and Repair**
2. **Vehicle and Machine Repair**
3. **Waste Handling/Disposal**

Related vehicle maintenance activities are covered under the following program headings in this manual: "Vehicle and Equipment Cleaning", "Vehicle and Equipment Storage", and "Vehicle Fueling".

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for equipment maintenance and repair include:

- Review maintenance activities to verify that they minimize the amount of pollutants discharged to receiving waters. Keep accurate maintenance logs to evaluate materials removed and improvements made.
- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Minimize use of solvents. Clean parts without using solvents whenever possible. Recycle used motor oil, diesel oil, and other vehicle fluids and parts whenever possible.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

1. General Maintenance and Repair

General Guidelines

→ *Note: Permission must be obtained for any discharge of wash water to the sanitary sewer from the local sewering agency.*

- ✓ Review maintenance activities to verify that they minimize the amount of pollutants discharged to receiving waters. Keep accurate maintenance logs to evaluate materials removed and improvements made.
- ✓ Regularly inspect vehicles and equipment for leaks.
- ✓ Move activity indoors or cover repair area with a permanent roof if feasible.
- ✓ Minimize contact of stormwater with outside operations through berming and drainage routing.
- ✓ Place curbs around the immediate boundaries of the process equipment.
- ✓ Clean yard storm drain inlets regularly and stencil them.

Good Housekeeping

→ *Note: Permission must be obtained for any discharge of wash water to the sanitary sewer from the local sewering agency.*

- ✓ Avoid hosing down work areas. If work areas are washed and if discharge to the sanitary sewer is allowed, treat water with an appropriate treatment device (e.g. clarifier) before discharging. If discharge to the sanitary sewer is not permitted, pump water to a tank and dispose of properly.
- ✓ Collect leaking or dripping fluids in drip pans or containers. Fluids are easier to recycle or dispose of properly if kept separate.
- ✓ Keep a drip pan under the vehicle while you unclip hoses, unscrew filters, or remove other parts. Place a drip pan under any vehicle that might leak while you work on it to keep splatters or drips off the shop floor.
- ✓ Educate employees on proper handling and disposal of engine fluids.
- ✓ Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- ✓ Do not pour liquid waste to floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections.
- ✓ Post signs at sinks and stencil outdoor storm drain inlets.

2. Vehicle Repair

General Guidelines

Also see Waste Handling procedure sheet

- ✓ Perform vehicle fluid removal or changing inside or under cover where feasible to prevent the run-on of stormwater and the runoff of spills.
- ✓ Regularly inspect vehicles and equipment for leaks, and repair as needed.
- ✓ Use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- ✓ Immediately drain all fluids from wrecked vehicles. Ensure that the drain pan or drip pan is large enough to contain drained fluids (e.g. larger pans are needed to contain antifreeze, which may gush from some vehicles).

- ✓ Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- ✓ Recycle used motor oil, diesel oil, and other vehicle fluids and parts whenever possible.
- ✓ Oil filters disposed of in trash cans or dumpsters can leak oil. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.
- ✓ Store cracked batteries in a non-leaking secondary container and dispose of properly at recycling or household hazardous waste facilities.

Vehicle Leak and Spill Control

- ✓ Use absorbent materials on small spills. Remove the absorbent materials promptly and dispose of properly.
- ✓ Place a stockpile of spill cleanup materials where it will be readily accessible.
- ✓ Sweep floor using dry absorbent material.

3. Machine Repair

Also see the Spill Prevention and Control procedure sheet

- ✓ Keep equipment clean; don't allow excessive build-up of oil or grease.
- ✓ Minimize use of solvents.
- ✓ Use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- ✓ Perform major equipment repairs at the corporation yard, when practical.
- ✓ Following good housekeeping measures in *Vehicle Repair* section.

4. Waste Handling/Disposal

Waste Reduction

- ✓ Prevent spills and drips of solvents and cleansers to the shop floor.
- ✓ Do liquid cleaning at a centralized station so the solvents and residues stay in one area. Recycle liquid cleaners when feasible.
- ✓ Locate drip pans, drain boards, and drying racks to direct drips back into a solvent sink or fluid holding tank for reuse.

Safer Alternatives

OPTIONAL:

- If possible, eliminate or reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous material:
  - Use non-caustic detergents instead of caustic cleaning for parts cleaning.

- Use a water-based cleaning service and have tank cleaned. Use detergent-based or water-based cleaning systems in place of organic solvent degreasers.
- Replace chlorinated organic solvents with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check list of active ingredients to see whether it contains chlorinated solvents.
- Choose cleaning agents that can be recycled.

Recycling

Also see Waste Handling procedure sheet

OPTIONAL:

- Separate wastes for easier recycling. Keep hazardous and non-hazardous wastes separate, do not mix used oil and solvents, and keep chlorinated solvents separate from non-chlorinated solvents.
- Label and track the recycling of waste material (e.g. used oil, spent solvents, batteries).
- Purchase recycled products to support the market for recycled materials.

LIMITATIONS:

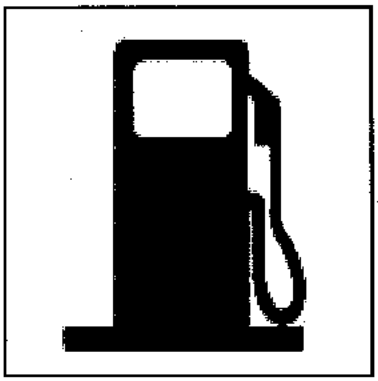
Space and time limitations may preclude all work being conducted indoors. It may not be possible to contain and clean up spills from vehicles/equipment brought on-site after working hours. Dry floor cleaning methods may not be sufficient for some spills – see spill prevention and control procedures sheet. Identification of engine leaks may require some use of solvents.

REFERENCES:

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. 1995. King County Surface Water Management. July. On-line: http://dnr.metrokc.gov/wlr/dss/spcm.htm

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.



FF-4

FUELING

Spills and leaks that may occur during equipment and vehicle fueling can contribute hydrocarbons, oils and greases, and heavy metals to stormwater runoff. Implementation of the following procedures can help prevent fuel spills and leaks and thereby reduce their impacts to stormwater.

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POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for fueling include:

- Fuel vehicles and equipment at off-site commercial fueling stations when feasible.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

General Guidelines

- ✓ If refueling must be done on site, use a location away from storm drains and creeks.
- ✓ If re-developing the fueling are, design the area to prevent the run-on of stormwater and the runoff of spills:
  - Pave fueling area with Portland cement concrete (or equivalent smooth impervious surface), with a 2% to 4% slope to prevent ponding.
  - Separate the dispensing area from the rest of the site by a grade break that prevents run-on of storm water to the extent practicable. The fuel dispensing area is defined as extending 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly area may be operated plus 1 foot, whichever is less. The paving around the fuel dispensing area

may exceed the minimum dimensions of the "fuel dispensing area" stated above.

- Cover the fuel dispensing area. The cover's minimum dimensions must be equal to or greater than the area within the grade break or the fuel dispensing area.
- Design the cover so that is does not drain onto the fuel dispensing area.

✓ Install vapor recovery nozzles to help control drips as well as air pollution.

✓ Discourage "topping off" of fuel tanks.

✓ Use secondary containment such as curbs, berms, etc. when transferring fuel from the tank truck to the fuel tank.

✓ If the facility has large numbers of mobile equipment working throughout the site and they are fueled with a mobile fuel truck, establish a designated area for fueling. With the exception of racked equipment such as bulldozers and perhaps small forklifts, most vehicles should be able to travel to a designated area with little lost time. Place temporary "caps" over nearby storm drain inlets so that if a spill occurs it is prevented from entering the storm drain.

✓ Ensure compliance with all Federal and State requirements regarding underground storage tanks, or install above ground tanks.

✓ Use dry methods to clean the fueling area whenever possible. If you periodically clean by pressure washing, place a temporary plug in the downstream drain and pump out the accumulated water. Properly dispose of the water.

✓ Train employees on proper fueling and cleanup procedures

✓ Ensure the following safeguards are in place:

- Overflow protection devices on tank systems to warn the operator to automatically shutdown transfer pumps when the tank reaches full capacity
- Protective guards around tanks and piping to prevent vehicle or forklift damage
- Clearly tagging or labeling all valves to reduce human error
- Placement of spill kits at fueling areas and/or on vehicles.

→ *Note: Permission must be obtained for any discharge of wash water to the sanitary sewer from the local sewering agency.*

✓ Stencil storm drain inlets within the facility boundary, by paint/stencil (or equivalent), to indicate whether they flow to an oil/water separator, directly to the sewer, or to a storm drain. Labels are not necessary for plumbing fixtures directly connected to the sanitary sewer.

Spill Response

See Spill Prevention and Control procedures sheet

✓ Use absorbent materials on small spills and general cleaning rather than hosing down the area. Remove the absorbent materials promptly.

✓ Place a stockpile of spill cleanup materials where it will be readily accessible.

✓ Aboveground tank leak and spill control (not applicable to propane):

- Check for external corrosion and structural failure
- Check for spills and overfills due to operator error
- Check for failure of piping system
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa
- Visually inspect new tank or container installation for loose fittings, poor welding, and improper or poorly fitted gaskets
- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.

OPTIONAL:

- Periodically, integrity testing should be conducted by a qualified professional.

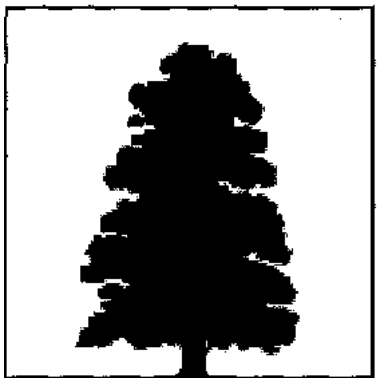
LIMITATIONS:

REFERENCES:

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. 1995. King County Surface Water Management. July. On-line: http://dnr.metrokc.gov/wlr/dss/spcm.htm

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.



FF-5

LANDSCAPE MAINTENANCE

The model procedures described below focus on minimizing the discharge of pesticides and fertilizers, landscape waste, trash, debris, and other pollutants to the storm drain system and receiving waters. Landscape maintenance practices may involve one or more of the following activities:

1. **Mowing, Trimming/Weeding, and Planting**
2. **Irrigation**
3. **Fertilizer and Pesticide Management**
4. **Managing Landscape Waste**
5. **Erosion Control**

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for landscape maintenance include:

- Irrigation runoff is prohibited. Adjust sprinkler heads and timing to prevent runoff.
- Implement an integrated pest management (IPM) program. IPM is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools. Refer to Appendix D, Fertilizer and Pesticide Guidance for further details.
- Choose low water using flowers, trees, shrubs, and groundcover.
- Consider the selection of broadleaf evergreen trees to reduce leaf litter.
- Appropriate maintenance (i.e. properly timed fertilizing, weeding, pest control, and pruning) to preserve the landscapes water efficiency.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

1. Mowing, Trimming/Weeding, and Planting

Mowing, ✓ If feasible and practical, use mechanical methods of vegetation removal

Trimming/Weeding

rather than applying herbicides. Use hand weeding where practical.

- ✓ When conducting mechanical or manual weed control, avoid loosening the soil, which could erode into streams or storm drains.
- ✓ If feasible and practical, use coarse textured mulches or geotextiles to suppress weed growth and reduce the use of herbicides.
- ✓ Do not blow or rake leaves, etc. into the street or place yard waste in gutters or on dirt shoulders. Sweep up any leaves, litter or residue in gutters or on street.
- ✓ Collect lawn and garden clippings, pruning waste, tree trimmings, and weeds. Chip if necessary, and compost or dispose of at a landfill (see waste management section of this procedure sheet).
- ✓ Place temporarily stockpiled material away from watercourses, and berm or cover stockpiles to prevent material releases to storm drains.

Planting

- ✓ Where feasible, retain and/or plant selected native vegetation whose features are determined to be beneficial. Native vegetation usually requires less maintenance (e.g., irrigation, fertilizer) than planting ornamental vegetation.
- ✓ When planting or replanting consider using low water use groundcovers.

OPTIONAL:

- Careful soil mixing and layering techniques using a topsoil mix or composted organic material can be used as an effective measure to reduce herbicide use and watering.

2. Irrigation

- ✓ Utilize water delivery rates that do not exceed the infiltration rate of the soil.
- ✓ Use timers appropriately or a drip system to prevent runoff and then only irrigate as much as is needed.
- ✓ Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering, and repair leaks in the irrigation system as needed.
- ✓ Where practical, use automatic timers to minimize runoff.
- ✓ Use popup sprinkler heads in areas with a lot of activity or where there is a chance the pipes may be broken. Consider the use of mechanisms that reduce water flow to sprinkler heads if broken.
- ✓ If re-claimed water is used for irrigation, ensure that there is no runoff from the landscaped area(s).
- ✓ If bailing of muddy water is required (e.g. when repairing a water line leak), do not put it in the storm drain; pour over landscaped areas.

OPTIONAL:

- Consider converting to an evapo-transpiration driven irrigation control system.

3. Fertilizer and Pesticide Management

Usage

- ✓ Utilize a comprehensive management system that incorporates integrated pest management techniques.
- ✓ Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- ✓ Educate and train employees on use of pesticides and in pesticide application techniques to prevent pollution.
- ✓ Pesticide application must be under the supervision of a California qualified pesticide applicator.
- ✓ When applicable use the least toxic pesticides that will do the job. Avoid use of copper-based pesticides if possible.
- ✓ Do not mix or prepare pesticides for application near storm drains.
- ✓ Prepare the minimum amount of pesticide needed for the job and use the lowest rate that will effectively control the pest.
- ✓ Employ techniques to minimize off-target application (e.g. spray drift) of pesticides, including consideration of alternative application techniques.
- ✓ Calibrate fertilizer and pesticide application equipment to avoid excessive application.
- ✓ Periodically test soils for determining proper fertilizer use.
- ✓ Sweep pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- ✓ Inspect pesticide/fertilizer equipment and transportation vehicles frequently
- ✓ Refer to Appendix D, Fertilizer and Pesticide Guidance for further details.

OPTIONAL:

- Work fertilizers into the soil rather than dumping or broadcasting onto the surface.
- Use beneficial insects where possible to control pests (green lacewings, ladybugs, praying mantis, ground beetles, parasitic nematodes, trichogramma wasps, seedhead weevils, and spiders prey on detrimental pest species).
- Use slow release fertilizers whenever possible to minimize leaching.

Scheduling

- ✓ Do not use pesticides if rain is expected within 24 hours.
- ✓ Apply pesticides only when wind speeds are low (less than 5 mph).

Storage

- ✓ To minimize quantities of pesticides and fertilizers stored, only purchase what is needed for use in the near future.
- ✓ Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides.

Disposal

- ✓ Purchase only the amount of pesticide that you can reasonably use in a given time period (month or year depending on the product).
- ✓ Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- ✓ Dispose of empty pesticide containers according to the instructions on the container label.

4. Managing Landscape Waste

- ✓ Compost leaves, sticks, or other collected vegetation or dispose of at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- ✓ Place temporarily stockpiled material away from watercourses and storm drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- ✓ Reduce the use of high nitrogen fertilizers that produce excess growth requiring more frequent mowing or trimming.

Also see Waste Handling and Disposal procedure sheet

- ✓ Inspection of drainage facilities should be conducted to detect illegal dumping of clippings/cuttings in or near these facilities. Materials found should be picked up and properly disposed of.
- ✓ Landscape wastes in and around storm drain inlets should be avoided by either using bagging equipment or manually picking the material up.

5. Erosion Control

- ✓ Maintain vegetative cover on medians and embankments to prevent soil erosion. Apply mulch or leave clippings to serve as additional cover for soil stabilization and to reduce the velocity of storm water runoff.
- ✓ As medians are developed or re-developed, consider designing them so that they prevent runoff and erosion and promote better irrigation practices.
- ✓ Minimize the use of disking as a means of vegetation management because the practice may result in erodable barren soil.

- ✓ Confine excavated materials to pervious surfaces away from storm drain inlets, sidewalks, pavement, and ditches. Material must be covered if rain is expected.

LIMITATIONS:

Alternative pest/weed controls may not be available, suitable, or effective in every case.

REFERENCES:

California Storm Water Best Management Practice Handbooks. Industrial/Commercial Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. July 1993.

County of Orange. 2000. Public Facilities and Resources Department, Management Guidelines for the Use of Fertilizers and Pesticides. September.

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. 1995. King County Surface Water Management. July. On-line: http://dnr.metrokc.gov/wlr/dss/spcm.htm

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Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

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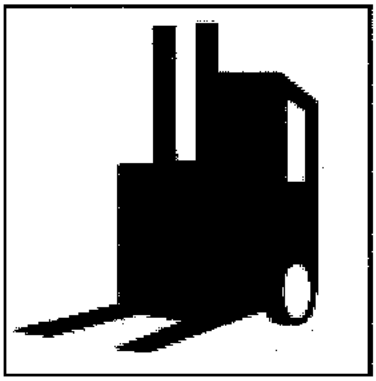


FF-6

MATERIAL LOADING AND UNLOADING

The loading/unloading of materials usually takes place outside; therefore, materials spilled, leaked, or lost during loading/unloading have the potential to collect in the soil or on other surfaces and be carried away by runoff or when the area is cleaned. Additionally, rainfall may wash pollutants from machinery used to unload or move materials. Material loading and unloading involves the following activities:

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for material loading and unloading include:

- Check loading and unloading equipment regularly for leaks.
- Cover loading docks.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

General Guidelines

- ✓ Regularly clean work areas to remove materials such as debris, sandblasting material, etc.
- ✓ Design loading/unloading area to prevent stormwater runon that would include grading or berming the area, and positioning roof downspouts so they direct stormwater away from loading/unloading areas.
- ✓ Use overhangs or door skirts that enclose the trailer.
- ✓ Park tank trucks or delivery vehicles so that spills or leaks can be contained.
- ✓ Avoid loading and exposing materials during rain events unless the loading dock is covered and protected from rain. A seal or door skirt between the trailer and the building may also prevent exposure to rain.
- ✓ Shipboard cooling and process water discharges should be directed to minimize contact with spent abrasives, paint, and other debris.

Tank truck transfers

- ✓ The area where the transfer takes place should be paved. If the liquid is reactive with the asphalt, Portland cement should be used to pave the area.
- ✓ Transfer area should be designed to prevent runon of stormwater from adjacent areas. Sloping the pad and using a berm around the uphill side of the transfer area should reduce runon.
- ✓ Transfer area should be designed to prevent runoff of spilled liquids from the area. Sloping the area to a drain should prevent runoff. The drain should be connected to a dead-end sump. A positive control valve should be installed on the drain.

Spill Control

Also see Spill Prevention and Control procedures sheet

- ✓ Contain leaks during transfer.
- ✓ Use drip pans under hoses.
- ✓ Have an emergency spill cleanup plan readily available.
- ✓ Place spill kits and materials next to or near each loading/unloading area.
- ✓ Use drip pans or comparable devices when transferring oils, solvents, and paints.

Training

- ✓ Make sure forklift operators are properly trained.
- ✓ Train employees regarding spill containment and cleanup.
- ✓ Employees trained in spill containment and cleanup should be present during the loading/unloading.
- ✓ Use a written operations plan that describes procedures for loading and/or unloading.

Inspection

Also see Spill Prevention and Control procedures sheet

- ✓ Check loading and unloading equipment regularly for leaks, including valves, pumps, flanges and connections.
- ✓ Inspect regularly for leaking valves, pipes, hoses, or soil chutes carrying either water or wastewater.
- ✓ Look for dust or fumes during loading or unloading operations.

LIMITATIONS:

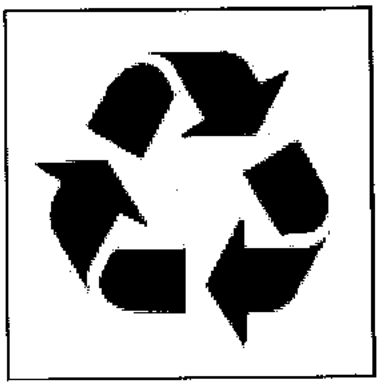
Space and time limitations may preclude all transfers from being performed indoors or under cover. It may not be possible to conduct transfers only during dry weather.

REFERENCES:

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook.

Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.



FF-7

MATERIAL STORAGE, HANDLING, AND DISPOSAL

Accidental releases of materials from aboveground liquid storage tanks, drums, and dumpsters present the potential for contaminating stormwater with many different pollutants. Maintaining these areas may involve one or more of the following activities:

1. **Material Storage**
2. **Chemical Material Handling and Disposal**
3. **Hazardous Material Handling and Disposal**

Accidental releases of materials from aboveground liquid storage tanks, drums, and dumpsters present the potential for contaminating stormwater with many different pollutants. Maintaining these areas may involve one or more of the following activities:

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for material storage, handling, and disposal include:

- Store material indoors, or covered if outdoors.
- Prevent storm water run-on.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

1. General Material Storage, Handling, and Disposal

Storage

✓ Store materials indoors if possible. If stored outdoors, cover the storage area with a roof or withy temporary cover during rain events. [*Note: the local fire authority/department must be consulted for limitations on clearance of roof covers over containers used to store flammable materials*].

- ✓ Keep storage areas clean and dry. Conduct regular inspections so that leaks and spills are detected as soon as possible.
- ✓ Minimize stormwater run-on and runoff by covering, enclosing or providing secondary containment for the area.
- ✓ Keep outdoor storage areas in good condition (e.g. repair roofs, floors, etc. to limit releases to runoff).
- ✓ Drums stored in an area where unauthorized persons may gain access must be secured to prevent accidental spillage, pilferage, or any unauthorized use. Only personnel with proper training may handle hazardous waste. *See Waste Handling and Disposal Procedures*
- ✓ Wood products treated with chromated copper arsenate, ammonical copper zinc arsenate, creosote, or pentachlorophenol should be covered with tarps during rain events or stored indoors.
- ✓ Parking lots or other surfaces near bulk materials storage areas should be swept periodically to remove debris blown or washed from storage area.
- ✓ Train employees in proper storage measures.

Secondary Containment

- ✓ Tanks should be bermed or surrounded by a secondary containment system such as dikes, liners, vaults, or double walled tanks.
- ✓ Keep liquids in a designated area on a paved impervious surface within a secondary containment.
- ✓ The area inside the berm should slope to a drain with a dead-end sump that is periodically pumped out.

Inspection

- ✓ Inspect storage areas regularly for leaks or spills.
- ✓ Conduct routine inspections and check for external corrosion of material containers. Also check for structural failure, spills and overfills due to operator error, failure of piping system.
- ✓ Check for leaks or spills during pumping of liquids or gases from trucks to a storage facility or vice versa.
- ✓ Visually inspect new tank or container installations for loose fittings, poor welding, and improper or poorly fitted gaskets.
- ✓ Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.

2. General Chemical Material Handling and Disposal

General Guidelines

- ✓ Do not store chemicals, drums, or bagged materials directly on the ground. Place these items in secondary containers. Designate a secure chemical material storage area that is paved with Portland cement concrete, free of cracks and gaps, and impervious in order to contain leaks and spills.

Types of chemical materials that may be stored:
- *Liquid chemicals*
- *Waste oils*
- *Solvents*
- *Petroleum products*
- *Paints*
- *Cleaners*
- *Pesticides*
- *Fertilizers*
- *Etc.*

- ✓ Containers should be placed in a designated area and covered.
- ✓ Design and maintain chemical storage areas that reduce exposure to storm water:
  - Store materials inside or under cover on paved surfaces
  - Use secondary containment (see section above)
- ✓ Use covered dumpsters for waste product containers. Dumpsters shall be kept in good condition without corrosion or leaky seams. Garbage dumpsters shall be replaced if they are deteriorating to the point where leakage is occurring.
- ✓ Liquid materials should be stored in UL approved double walled tanks or surrounded by a curb or dike to provide the volume to contain 10 percent of the volume of all the containers or 110 percent of the volume of the largest container, whichever is greater.
- ✓ Try to keep chemicals in their original containers, and keep them well labeled.
- ✓ Keep secured lids on waste barrels and containers.

Spill Control

See Spill Prevention and Control procedures sheet

- ✓ Clean up spills immediately.
- ✓ Safeguards against accidental releases:
  - Overflow protection devices to warn operator or automatic shut down transfer pumps
  - Protection guards (bollards) around tanks and piping to prevent vehicle or forklift damage
- ✓ Clear tagging or labeling, and restricting access to valves to reduce human error.
- ✓ Employees trained in emergency spill cleanup procedures should be present when dangerous waste, liquid chemicals, or other wastes are delivered or transferred off-site.

3. General Hazardous Material Handling

General Guidelines

Also see Spill Control Section above and the Spill Prevention and Control procedures sheet

- ✓ All hazardous waste must be labeled according to hazardous waste regulations. Consult your Fire Department or your local hazardous waste agency for details.
- ✓ Store as few hazardous materials on-site as possible. Do not store any hazardous waste directly on the ground. Place these items in secondary containers. Designate a secure hazardous waste storage area that is paved with Portland cement concrete, free of cracks and gaps, and impervious in order to contain leaks and spills.
- ✓ Handle hazardous materials as infrequently as possible. Only properly trained personnel should handle hazardous waste.

- ✓ Storage of oil and hazardous materials must meet specific Federal and State standards including:
  - Spill Prevention Control and Countermeasure Plan
  - Secondary containment
  - Integrity and leak detection monitoring
- ✓ Never mix waste oil with fuel, antifreeze, or chlorinated solvents. Consult your hazardous waste hauler for details.
- ✓ Develop emergency preparedness plans.
- ✓ Employees should be familiar with the Hazardous Materials Disclosure Plan, if applicable .
- ✓ Employees trained in emergency spill cleanup procedures should be present when dangerous waste, liquid chemicals, or other wastes are delivered or transferred off-site.

Batteries

- ✓ Store new batteries securely to avoid breakage and acid spills during earthquakes. Shelving should be secured to the wall.
- ✓ Store used batteries indoors and in plastic trays to contain potential leaks.
- ✓ Recycle old batteries.

LIMITATIONS:

Storage sheds often must meet building and fire code requirements.

REFERENCES:

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. 1995. King County Surface Water Management. July. On-line: http://dnr.metrokc.gov/wlr/dss/spcm.htm

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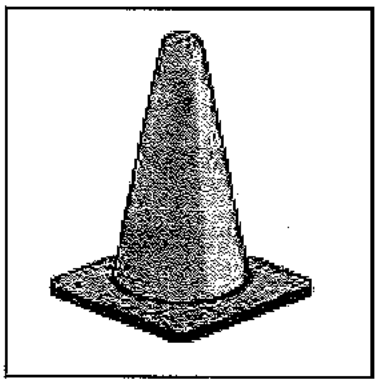

FF-8

MINOR CONSTRUCTION

Minor construction activities can result in the use of materials or generation of waste that may contain toxic hydrocarbons or other organic compounds, suspended solids, heavy metals, abnormal pH, and oils and greases. Minor construction activities may involve one or more of the following:

1. **General Construction Activities**
2. **Interim Material Storage**
3. **Concrete Work**
4. **Building Work**

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for minor construction include:

- Schedule activities during dry weather whenever possible.
- Use dry cleaning methods whenever possible.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

1. General Construction Activities

- ✓ Prevent debris from entering the storm drain.
- ✓ Do not wash materials into a storm drain or bury spilled dry material.
- ✓ Do not clean or rinse equipment into a street, gutter, or storm drain.
- ✓ Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a storm drain inlet. This is particularly necessary on rainy days. The containment device(s) must be in place at the beginning

See Waste Handling and Disposal procedure sheet

of the work day, and accumulated dirty runoff and solids must be collected and disposed of before removing the containment device(s) at the end of the work day.

- ✓ Clean the storm drain inlets in the immediate vicinity of the construction activity after it is completed.
- ✓ If a spill occurs on dirt, excavate and remove the contaminated (stained) soil.
- ✓ Clean up spills and leaks immediately using dry methods, whenever possible.
- ✓ Designate an area for clean up and proper disposal of excess materials.
- ✓ Sweep up dry materials and residue from cleaning operations. Avoid using water to clean up.
- ✓ Use soil erosion control techniques if bare ground is temporarily exposed.
- ✓ Promptly clean up trash, debris, and litter from job sites and dispose properly.
- ✓ Inspect vehicles and equipment used at the construction site regularly for leaks.
- ✓ Train employees and subcontractors in proper waste management.

2. Interim Material Storage

- ✓ Properly store and cover materials that are normally used during minor construction such as paints, solvents, equipment, fuel, asphalt/concrete materials, sand, etc.
- ✓ Properly store and dispose of wastes generated from the activity.
- ✓ Store dry and wet materials under cover, protected from rainfall and runoff and away from storm drain inlets. After job is complete, remove temporary stockpiles (asphalt materials, sand, etc.) and other materials as soon as possible.
- ✓ Apply and store all products in accordance with manufacturer's instructions and proper safety measures.
- ✓ Store products in labeled containers and with covers or lids.
- ✓ Keep paved areas adjacent to stockpiles and earthwork sites free from loose sediment and tracked materials.
- ✓ Place stockpiled materials away from storm drain inlets, drainage paths, and natural waterways and provide cover to protect from runon/runoff if feasible.
- ✓ Control stockpiled materials if windy or rainy weather is predicted (e.g. tarps, berming, sandbags, etc.).
- ✓ Prevent storm water from eroding loose soil and stockpiles.

- ✓ Inspect stockpiles regularly and after significant rain events.

3. Concrete Work

- ✓ Take measures to protect nearby storm drain inlets prior to breaking up asphalt or concrete (e.g. place hay bales or sand bags around inlets). Clean afterwards by dry sweeping up as much waste material as possible.
- ✓ When making saw cuts in pavement, use as little water as possible. Cover each storm drain inlet completely with filter fabric during the sawing operation and contain the slurry by placing straw bales, sandbags, or gravel dams around the inlets. Vacuum saw cuttings and water from the pavement or gutter and remove from site.
- ✓ Avoid mixing excess amounts of fresh concrete or cement mortar on site.
- ✓ Apply concrete, asphalt, and seal coat during dry weather to prevent contamination form contacting stormwater runoff.
- ✓ Protect applications of fresh concrete from rainfall and runoff until the material has dried.
- ✓ Do not allow excess concrete to be dumped on-site, except in designated areas and promptly remove when concrete has dried.
- ✓ Tarps should be placed under concrete pumper trucks and the rear of trucks while concrete is being delivered or transferred from one area to another.
- ✓ Wash concrete trucks and concrete pumper trucks and trailers off site or in designated areas on site, such that there is no discharge of concrete wash water into storm drains, open ditches, streets, catch basins, or other stormwater conveyance structures.
- ✓ For on-site washout:
  - Locate washout area at least 50 feet from storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
  - Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed of properly.
  - Whenever possible, recycle washout by pumping back into mixers for reuse.
  - Never dispose of washout into the street, storm drains, drainage ditches, or creeks.
- ✓ When washing concrete to remove fine particles and expose the aggregate, contain the wash water for proper disposal. Do not allow water to enter storm drain inlets.
- ✓ Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stock pile, or

dispose in the trash

- ✓ Return left-over materials to the transit mixer. Dispose excess concrete, grout, and mortar in the trash.

4. Building Work

General Guidelines

- ✓ Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.
- ✓ Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- ✓ Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
- ✓ Clean paint brushes and tools covered with water-based paints in sinks connected to sanitary sewers. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.
- ✓ If a spill occurs on dirt, excavate and remove the contaminated (stained) soil.

Building Demolition

- ✓ Spray water throughout the site to help control wind-blowing of fine materials such as soil, concrete dust, paint chips, and metal chips. The amount of water must be controlled so that runoff from the site does not occur; yet dust control is accomplished.
- ✓ Oils must never be used for dust control.
- ✓ Place filter fabric or a similarly effective device at nearby storm drain inlets to prevent particles and solids from entering the storm drainage system. Filters should be placed at the beginning of the workday and the accumulated materials collected and disposed properly before removing them at the end of the workday
- ✓ Dry sweep surrounding street gutters, sidewalks, driveways, and other paved surfaces at the end of each workday to collect and properly dispose of loose debris and garbage, do not hose down the area to a storm drain.
- ✓ Use permanent soil erosion control techniques if a building cleared from an area is not to be replaced.

LIMITATIONS:

This procedure sheet is for minor construction only; the State's General Construction Activity Storm Water permit has more requirements for larger projects. Be certain that actions to help stormwater quality are consistent with Cal- and Fed-OSHA and air quality regulations.

REFERENCES:

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. 1995. King County Surface Water Management. July. On-line: http://dnr.metrokc.gov/wlr/dss/spcm.htm

The Stormwater Managers Resource Center (http://www.stormwatercenter.net/)

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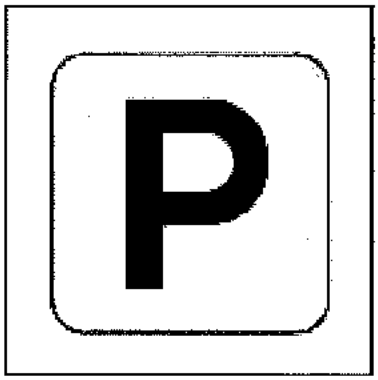


FF-9

PARKING LOT MAINTENANCE

Litter accumulation in parking lots can contribute suspended solids to stormwater runoff; runoff from parking lots may also contain hydrocarbons, oil and grease, and heavy metals to stormwater. Maintaining these areas may involve one or more of the following activities:

1. **Sweeping and Cleaning**
2. **Repair**

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for parking lot maintenance include:

- Keep accurate maintenance logs to evaluate materials removed and improvements made.
- When repairing parking lots, consider making retrofits that will reduce storm runoff quantities (i.e. permeable surface, directing surface flows to landscaped areas, etc.)
- Once per year, educate municipal staff on pollution prevention measures.
- Educate others about storm water pollution prevention.

MODEL PROCEDURES:

1. Sweeping and Cleaning

- ✓ Sweep/vacuum all parking lots at least once before the onset of the wet season.
- ✓ When cleaning with-water use the procedures below:
  - Block the storm drain or contain runoff.
  - Wash water should be collected and disposed of properly. If wash water does not contain soap or other cleaning agents the water may be discharged to a pervious surface (dirt or landscaped area).

✓ Dispose of parking lot sweeping debris and dirt at a landfill.

✓ When cleaning heavy oily deposits:

- Clean oily spots with absorbent materials
- Do not allow discharges to the storm drain
- Collect wash water and dispose of properly.

✓ Appropriately dispose of spilled materials and absorbents.

✓ If cleaning agents are used, select biodegradable products.

OPTIONAL:

- If necessary, establish more frequent sweeping schedule based on usage and field observations of waste accumulation.

Litter Control

✓ Enforce anti-litter laws.

✓ Provide an adequate number of litter receptacles.

✓ Clean out frequently and/or cover litter receptacles to prevent spillage.

✓ Sweep/vacuum all parking lots at least once before the onset of the wet season.

OPTIONAL:

- Post "No Littering" signs.

3. Surface Repair

✓ Pre-heat, transfer or load hot bituminous material away from storm drain inlets.

✓ Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff.

✓ Cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and until all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered maintenance holes and drains for proper disposal.

✓ Use only as much water as necessary for dust control, to avoid runoff.

✓ Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

4. Control Spills

✓ If a spill occurs on dirt, excavate and remove the contaminated (stained)

See Spill Prevention and Control

procedure sheet

dirt.

- ✓ Store spill response materials at a central location and keep maintenance vehicles adequately supplied.
- ✓ Appropriately dispose of spilled materials and absorbents.

LIMITATIONS:

Limitations related to sweeping activities at large parking facilities may include current sweeper technology to remove oil and grease.

REFERENCES:

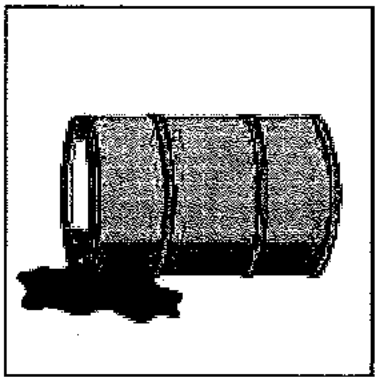
California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

The Stormwater Managers Resource Center (http://www.stormwatercenter.net/)

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.



FF-10

SPILL PREVENTION AND CONTROL

Preparation for accidental or illegal spills, with proper training and reporting systems implemented, can minimize the discharge of pollutants to the environment. Specific spill prevention and response activities may involve one or more of the following activities:

1. **Preparation/Prevention**
2. **Spill Response**
3. **Reporting**
4. **Training**

An emergency spill response plan, the Orange County Hazardous Materials Area Plan, has been developed. Each City should adopt this plan or an equivalent plan to respond to hazardous materials emergencies.

MODEL PROCEDURES:

1. Preparation/Prevention

- ✓ Adopt the Orange County Hazardous Materials Area Plan or equivalent plan which includes a set of planned responses to hazardous materials emergencies, addressing chain-of-command, public agency participation and allocation of authority.
- ✓ Place a stockpile of spill cleanup materials where it will be readily accessible.
- ✓ Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.
- ✓ Identify key spill response personnel.

2. Spill Response

- ✓ Clean up leaks and spills immediately.
- ✓ On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.
- ✓ Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- ✓ Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- ✓ For larger spills, a private spill cleanup company or Hazmat team may be necessary.

OPTIONAL:

- If illegal dumping is observed at the facility post "No Dumping" signs with a phone number for reporting dumping and disposal.

3. Reporting

- ✓ Report spills or problems to a city Authorized Inspector

4. Training

- ✓ Educate employees about spill prevention and cleanup.

LIMITATIONS:

For hazardous spills, a private spill cleanup company or Hazmat team may be necessary. Proper training is crucial to reducing the frequency, severity, and impacts of leaks and spills.

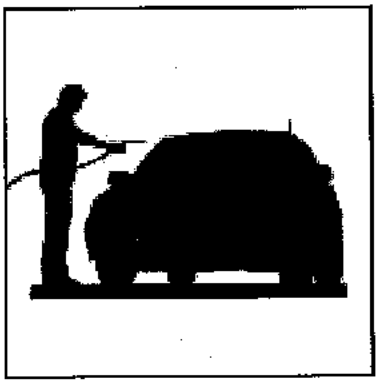
REFERENCES:

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

The Stormwater Mangers Resource Center (http://www.stormwatercenter.net/)

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine

Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.



FF-11

VEHICLE AND EQUIPMENT CLEANING

Vehicle and equipment cleaning activities can contribute toxic hydrocarbons and other organic compounds, oils and greases, nutrients, heavy metals, and suspended solids to stormwater runoff. Use of the procedures outlined below can prevent or reduce the discharge of pollutants to stormwater during vehicle and equipment cleaning.

1. **Inspection and Cleaning of Stormwater Conveyance Structures**
2. **Controlling Illicit Connections and Discharges**
3. **Controlling Illegal Dumping**

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for vehicle and equipment cleaning include:

- Use outside service agencies to clean vehicles and equipment.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

If your facility washes or steam cleans a large number of vehicles or pieces of equipment, consider contracting out this work to a commercial business. These businesses are better equipped to handle and dispose of the wash waters properly. Contracting out this work can also be economical by eliminating the need for a separate washing/cleaning operation at your facility.

If washing/cleaning must occur on-site follow these procedures:

- ✓ Use designated, covered, wash areas to prevent contact with stormwater and bermed to contain wash water.
- ✓ Designated wash areas must be well marked with signs indicating where and how washing must be done.
- ✓ Water may be discharged to the sanitary sewer after flowing through a clarifier. If the above conditions are not met, other pre-treatment may be

→ *Note: Permission must be obtained for any discharge of wash water to the sanitary sewer from the local sewering agency.*

required.

✓ Do not permit steam cleaning or engine degreasing at the wash out area.

✓ Washing operations should be conducted in a designated wash area having the following characteristics:

- Paved with Portland cement concrete
- Covered or bermed to prevent contact with storm water
- Sloped for wash water collection
- Connected to the sanitary sewer – upon approval.
- Clearly designated

OPTIONAL:

- Consider filtering and recycling wash water.
- Equip wash areas with oil/water separators.

LIMITATIONS

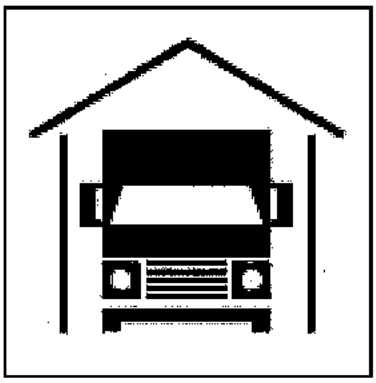
Steam cleaning can generate significant pollutant concentrations requiring permitting, monitoring, pretreatment, and inspections. The measures outlined in this procedure sheet are insufficient to address all the environmental impacts and compliance issues related to steam cleaning.

REFERENCES:

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

The Stormwater Mangers Resource Center (http://www.stormwatercenter.net/)

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.



FF-12

VEHICLE AND EQUIPMENT STORAGE

Stormwater runoff from vehicle and equipment storage areas can be contaminated with toxic hydrocarbons and other organic compounds, oils and greases, heavy metals, nutrients, and suspended solids. Activities associated with vehicle and equipment storage may involve one or more of the following:

1. **Storing Vehicles and Equipment**
2. **Wrecked Vehicle Storage**
3. **Cleaning Storage Areas**

Related vehicle maintenance activities are covered under the following program headings in this manual: "Vehicle and Equipment Cleaning", "Equipment Maintenance and Repair", and "Vehicle Fueling".

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for vehicle and equipment storage include:

- Use outside service agencies to clean vehicle storage areas and collect water for off-site disposal.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

1. Storing Vehicles and Equipment

General Guidelines

- ✓ Place drip pans or absorbent materials under vehicles and heavy equipment when not in use.
- ✓ Inspect the storage yard for filling drip pans and other problems (leaking equipment) regularly.
- ✓ Train employees on procedures for storage and inspection items.

Batteries

- ✓ Store batteries that have been dropped or are cracked in a secondary container even if it appears that the acid has already drained.

2. Wrecked Vehicle Storage

- ✓ As the vehicles arrive, place drip pans under them immediately, even if the fluids have leaked out before the car arrives.
- ✓ Drain all fluids from wrecked vehicles and "part" cars. Also drain engines, transmission, and other used parts.
- ✓ Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers lying around.
- ✓ Do not store vehicles near storm drain inlets.
- ✓ Comply with all applicable State and Federal regulations regarding storage, handling, and transport of petroleum products.

3. Cleaning Vehicle Storage Areas

- ✓ Dry sweep parking lots, storage areas, and driveways at least once per month to collect dirt, waste, and debris, do not hose down the area to a storm drain.
- ✓ Considering using an outside service to clean vehicle storage areas and collect water for off-site disposal.

LIMITATIONS:

It may not be possible to contain and clean up spills from vehicles/equipment brought on-site after working hours.

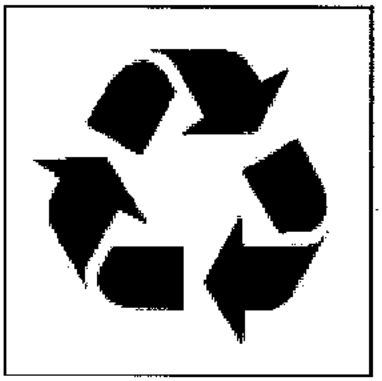
REFERENCES:

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. 1995. King County Surface Water Management. July. On-line: http://dnr.metrokc.gov/wlr/dss/spcm.htm

Los Angeles County Stormwater Quality Model Programs. Public Agency Activities
http://ladpw.org/wmd/npdes/model_links.cfm

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.



FF-13

WASTE HANDLING AND DISPOSAL

Improper storage of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction and recycling; and preventing run-on and runoff. Proper waste handling and disposal activities include the following:

1. **Litter Control**
2. **Waste Collection**
3. **Spill/Leak Control**
4. **Run-on/Runoff Prevention**

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for waste handling and disposal include:

- Reuse products when possible.
- Recycle leftover products that are recyclable.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

1. Litter Control

General Guidelines

✓ Enforce anti-litter laws.

✓ Provide a sufficient number of litter receptacles at each fixed facility.

✓ Clean out and cover litter receptacles frequently to prevent spillage.

OPTIONAL:

- Post "No Littering" signs.
- Place trash receptacles at transit stops and maintain as necessary

2. Waste Collection

General Guidelines

- ✓ Keep waste collection areas clean.
- ✓ Regularly inspect solid waste containers for structural damage. Repair or replace damaged containers as necessary.
- ✓ Secure solid waste containers; containers should be closed tightly when not in use.
- ✓ Do not fill waste containers with washout water or any other liquid.
- ✓ Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc. may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).
- ✓ Do not mix liquid wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal.

Good Housekeeping

- ✓ Use the entire product before disposing of the container.
- ✓ The waste management area should be kept clean by sweeping and cleaning up spills immediately.
- ✓ When cleaning around dumpster areas use dry methods when possible (e.g. sweeping, use of absorbents). If water must be used after sweeping/using absorbents, collect water and discharge to landscaped area or discharge through grease interceptor to the sewer if permitted to do so.

→ *Note: Permission must be obtained for any discharge of wash water to the sanitary sewer from the local sewering agency.*

Chemical/Hazardous Waste Management

- ✓ All hazardous waste must be labeled according to hazardous waste regulations. Consult your Fire Department or your local hazardous waste agency for details.
- ✓ Educate/train employees and subcontractors in proper hazardous waste handling management practices.
- ✓ Handle hazardous materials as infrequently as possible. Only properly trained personnel should handle hazardous waste.
- ✓ Select designated hazardous waste collection areas on-site and make sure that hazardous waste is collected, removed, and disposed of only at these authorized disposal areas.
- ✓ Hazardous wastes may only be stored for 90 days or less, unless the facility obtains a permit.

- ✓ Hazardous materials and wastes should be stored in covered containers and protected from vandalism.
- ✓ Place hazardous waste containers in secondary containment.
- ✓ Stencil storm drains on the facility's property

Waste Reduction/ Recycling

- ✓ Recycle materials whenever possible.

OPTIONAL:

- Reduce the amount of waste generated by using source controls such as:
  - Production planning and sequencing
  - Process or equipment modification
  - Raw material substitution or elimination
  - Loss prevention and housekeeping
  - Waste segregation and separation
  - Close loop recycling
- Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.

3. Spill/Leak Control:

Also see Spill Prevention and Control procedure sheet

- ✓ Clean up spills immediately.
- ✓ Spill cleanup materials should be placed where they are easily accessible.
- ✓ Minimize spillage/leaking from solid waste containers. For larger solid waste containers (especially compactors) that utilize a hydraulic fluid pump system, regularly inspect and replace faulty pumps or hoses to minimize the potential of releases and spills.
- ✓ Check waste management areas for leaking containers or spills.
- ✓ Leaking equipment including valves, lines, seals, or pumps should be repaired promptly.
- ✓ Transfer waste from damaged containers into safe containers.
- ✓ Vehicles transporting waste should have spill prevention equipment that can prevent spills during transport. The spill prevention equipment includes:
  - Vehicles equipped with baffles for liquid waste
  - Trucks with sealed gates and spill guards for solid waste
- ✓ Special care should be taken when loading or unloading wastes *See Loading and Unloading procedure sheet.*

4. Run-on/Runoff Prevention

- ✓ Prevent stormwater run-on from entering waste management areas by enclosing the area or building a berm around the area.
- ✓ Prevent the waste materials from directly contacting rain.
- ✓ Cover waste areas with a permanent roof if feasible. If not feasible, cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- ✓ If possible, move the activity indoors; ensuring first that all safety concerns such as fire hazard and ventilation are addressed.
- ✓ Dumpsters should be covered to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.

OPTIONAL:

- Minimize the runoff of stormwater for land application by:
  - Choosing a site where slopes are under 6%, the soil is permeable, there is a low water table, it is located away from wetlands or marshes, there is a closed drainage system.
  - Avoiding application of waste to the site when it is raining or when the ground is saturated with water.
  - Growing vegetation on land disposal areas to stabilize soils and reduce the volume of surface water runoff from the site.
  - Maintaining adequate barriers between the land application site and the receiving waters. Planted strips are particularly good.
  - Using erosion control techniques such as mulching and matting, filter fences, straw bales, diversion terracing, and sediment basins.
  - Performing routine maintenance to ensure the erosion control or site stabilization measures are working.

LIMITATIONS:

Hazardous waste cannot be re-used or recycled; it must be disposed of by a licensed hazardous waste hauler.

REFERENCES:

Bay Area Stormwater Management Agencies Association. 1996. Pollution From Surface Cleaning.

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning

Associates for Stormwater Quality Task Force. March 1993.

Harvard University. 2002. Solid Waste Container Best Management Practices – Fact Sheet On-Line Resources – Environmental Health and Safety.

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

DF-1
DRAINAGE FACILITY OPERATION AND MAINTENANCE

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff and storm water that may contain certain pollutants. Consequently these pollutants may accumulate in the system and must be removed periodically. In addition, the systems must also be maintained to function properly hydraulically to avoid flooding. Maintaining the system may involve the following activities:

1. Inspection and Cleaning of Stormwater Conveyance Structures
2. Controlling Illicit Connections and Discharges
3. Controlling Illegal Dumping

This list of Model Maintenance Procedures can be utilized as an inspection checklist to determine where better compliance with Designated Minimum Best Management Practices (notated with checkmarks and capital letters) is needed, and to recommend Additional Best Management Practices (notated with bullet points and lower case letters) that may be applicable under certain circumstances, especially where there are certain Pollutant Constituents of Concern. BMPs applicable to certain constituents are notated as:

Bacteria (BACT) *Sediment (SED)* *Nutrients (NUT)* *Oil and Grease (O&G)* *Pesticides (PEST)*
OtherToxic Compounds (TOX) *Trash (TRASH)* *Hydrological Impacts (HYD)* *Any/All or General (ANY)*

Program/Facility Being Inspected: _____

Date: _____ Inspector Name: _____

When completed, the checklist should be attached to the General Inspection Form Cover Sheet and copies should be provided to the Supervisor of the Facility/Program being inspected.

MAINTENANCE PROCEDURES:

1. Inspection and Cleaning of Drainage Facilities

Unsatisfactory	OK	General Guidelines
☐ _____	☐	T 1A. Annually inspect and clean drainage structures as needed.
☐ _____	☐	T 1B. Maintain appropriate records of cleaning and inspections.
☐ _____	☐	T 1C. Properly dispose of removed materials at a landfill or recycling facility.
☐ _____	☐	T 1D. Conduct intermittent supplemental visual inspections during the wet season to determine if there are problem inlets where sediment/trash or other pollutants accumulate, and provide for additional cleanouts as appropriate.
☐ _____	☐	T 1E. Prevent or clean up any discharges that may occur during the course of maintenance and cleaning procedures.
☐ _____	☐	T 1F. Verify that appropriate employees or subcontractors are trained in proper conductance of maintenance activities, including record keeping and disposal.
☐ _____	☐	T 1G. Annually inspect and clean v-ditches as needed, prior to the wet season. On shrub-covered slopes, vegetative debris may be placed on the downhill side of the ditch. Trash should be bagged and disposed at a landfill.

Unsatisfactory	OK
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

General Guidelines (cont.)

- 1a. Remove trash or debris as needed from open channels. It should be noted that major vegetative debris removal may require other regulatory permits prior to completing the work. (TRASH)
- 1b. Consider retrofitting energy dissipaters (e.g. riprap) below culvert outfalls to minimize potential for erosion. (SED)
- 1c. Repair any v-ditches that have cracked or displaced in a manner that accelerates erosion. (SED)
- 1d. If suspicious conditions appear to exist, test selected samples of the removed wastes for compliance with hazardous waste regulations prior to disposal. (TOX)
- 1e. Consider more frequent regular cleaning of selected drainage structures to help address ongoing specific impairments. (SED, BACT, NUT, TRASH)
- 1f. Consider structural retrofits to the MS4 to help address ongoing specific impairments (SED, BACT, NUT, TRASH, O&G)
- 1g. Consider cleaning out pipes at gradient breaks or other in-pipe debris accumulation points as identified/needed. (ANY, BACT, NUT, TRASH)

Storm Drain Flushing

- 1h. Flushing of storm drains or storm drain inlets should only be done when critically necessary and no other solution is practical. (SED, BACT, TRASH).
- 1i. If flushed, to the extent practical the material should be collected (vacuumed), treated with an appropriate filtering device to remove sand and debris and disposed of properly. (SED)

Waste Management

- 1H. Store wastes collected from cleaning activities of the drainage facilities in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- 1j. Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device to remove the sand and debris prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not permitted, water should be pumped or vacuumed to a tank and properly disposed of. Do not dewater near a storm drain or stream. (SED, TRASH)
- 1k. Provide for laboratory analysis of at least one randomly collected sediment (less the debris) sample per year from the storm drain inlet leaning program to ensure that it does not meet the EPA criteria for hazardous waste. If the sample is determined to be hazardous, the sediment must be disposed of as hazardous waste and the source should be investigated. (TOX).

2. Controlling Illicit Connections and Discharges

Unsatisfactory	OK	
☐	☐	

General Guidelines

T 2A. Report prohibited discharges such as dumping, paint spills, abandoned oil containers, etc. observed during the course of normal daily activities so they can be investigated, contained, and cleaned up.

T 2B. Where field observations and/or monitoring data indicate significant problems, conduct field investigations to detect and eliminate existing illicit connections and improper disposal of pollutants into the storm drain (i.e. identify problem areas where discharges or illegal connections may occur and follow up stream to determine the source(s)). (Refer to Appendices A-10 and A-11.)

T 2C. Report all observed illicit connections and discharges to the 24-hour water pollution problem reporting hotline (714) 567-6363.

T 2D. Encourage public reporting of improper waste disposal by distributing public education materials and advertising the 24-hour water pollution problem reporting hotline.

Storm Drain Stenciling ("No Dumping—Drains to Ocean")

T 2E. Implement and maintain a storm drain stenciling program.

- 2a. Consider adding the hotline number to the storm drain stencils (BACT, TOX, TRASH).

3. Controlling Illegal Dumping

☐	☐	

Field Investigation

T 3A. Report prohibited discharges such as dumpings observed during the course of normal daily activities so they can be investigated, contained and cleaned up.

T 3B. Conduct field investigations to detect and eliminate improper disposal of pollutants into the storm drain (i.e. identify problem areas where discharges or illegal connections may occur and follow up stream to determine the source(s)).

T 3C. Report all observed illegal dumping to the 24-hour water pollution problem reporting hotline (714) 567-6363.

T 3D. Encourage public reporting of improper waste disposal by distributing public education materials and advertising the 24-hour water pollution problem reporting hotline.

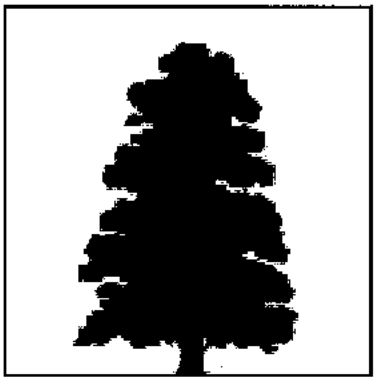
T 3E. If perpetrator can be identified, take appropriate enforcement action.

- 3a. Consider posting "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs could also indicate fines and penalties for illegal dumping. (ANY)

Unsatisfactory	OK	Training/Education/Outreach
☐	☐	T 3F. Verify that appropriate employees and subcontractors are trained to recognize and report illegal dumping.
☐	☐	T 3G. Encourage public reporting of illegal dumping by advertising the 24-hour water pollution problem reporting hotline (714) 567-6363.
☐	☐	• 3b. Take extra steps to educate the public in neighborhoods where illegal dumping has occurred to inform them why illegal dumping is a problem, and that illegal dumping carries a significant financial penalty. (ANY)

LIMITATIONS:

Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.



FP-2

LANDSCAPE MAINTENANCE

The model procedures described below focus on minimizing the discharge of pesticides and fertilizers, landscape waste, trash, debris, and other pollutants to the storm drain system and receiving waters. Landscape maintenance practices may involve one or more of the following activities:

1. **Mowing, Trimming/Weeding, and Planting**
2. **Irrigation**
3. **Fertilizer and Pesticide Management**
4. **Managing Landscape Waste**
5. **Erosion Control**

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for landscape maintenance include:

- Implement an integrated pest management (IPM) program. IPM is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools. Refer to Appendix D, Fertilizer and Pesticide Management Guidance for further details.
- Choose low water using flowers, trees, shrubs, and groundcover.
- Appropriate maintenance (i.e. properly timed fertilizing, weeding, pest control, and pruning) will preserve the landscapes water efficiency.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

1. Mowing, Trimming/Weeding, and Planting

Mowing, Trimming/Weeding

✓ Whenever possible, use mechanical methods of vegetation removal rather than applying herbicides. Use hand weeding where practical.

- ✓ When conducting mechanical or manual weed control, avoid loosening the soil, which could erode into streams or storm drains.
- ✓ Use coarse textured mulches or geotextiles to suppress weed growth and reduce the use of herbicides.
- ✓ Do not blow or rake leaves, etc. into the street or place yard waste in gutters or on dirt shoulders. Sweep up any leaves, litter or residue in gutters or on street.
- ✓ Collect lawn and garden clippings, pruning waste, tree trimmings, and weeds. Chip if necessary, and compost or dispose of at a landfill (see waste management section of this procedure sheet).
- ✓ Place temporarily stockpiled material away from watercourses, and berm or cover stockpiles to prevent material releases to storm drains.

Planting

- ✓ Where feasible, retain and/or plant selected native vegetation whose features are determined to be beneficial. Native vegetation usually requires less maintenance (e.g., irrigation, fertilizer) than planting ornamental vegetation.
- ✓ When planting or replanting consider using low water use groundcovers.

OPTIONAL:

- Careful soil mixing and layering techniques using a topsoil mix or composted organic material can be used as an effective measure to reduce herbicide use and watering.

2. Irrigation

- ✓ Utilize water delivery rates that do not exceed the infiltration rate of the soil.
- ✓ Use timers appropriately or a drip system to prevent runoff and then only irrigate as much as is needed.
- ✓ Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering, and repair leaks in the irrigation system as soon as they are observed.
- ✓ Where practical, use automatic timers to minimize runoff.
- ✓ Use popup sprinkler heads in areas with a lot of activity or where there is a chance the pipes may be broken. Consider the use of mechanisms that reduce water flow to sprinkler heads if broken.
- ✓ If re-claimed water is used for irrigation, ensure that there is no runoff from the landscaped area(s).
- ✓ If bailing of muddy water is required (e.g. when repairing a water line leak), do not put it in the storm drain; pour over landscaped areas.

3. Fertilizer and Pesticide Management

Usage

- ✓ Utilize a comprehensive management system that incorporates integrated pest management techniques.
- ✓ Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- ✓ Educate and train employees on use of pesticides and in pesticide application techniques to prevent pollution.
- ✓ Pesticide application must be under the supervision of a California qualified pesticide applicator.
- ✓ When applicable use the least toxic pesticides that will do the job. Avoid use of copper-based pesticides if possible.
- ✓ Do not mix or prepare pesticides or fertilizers for application near storm drains.
- ✓ Prepare the minimum amount of pesticide needed for the job and use the lowest rate that will effectively control the pest.
- ✓ Employ techniques to minimize off-target application (e.g. spray drift) of pesticides, including consideration of alternative application techniques.
- ✓ Calibrate fertilizer and pesticide application equipment to avoid excessive application.
- ✓ Periodically test soils for determining proper fertilizer use.
- ✓ Sweep pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- ✓ Inspect pesticide/fertilizer equipment and transportation vehicles daily.
- ✓ Refer to Appendix D for further guidance on Fertilizer and Pesticide management

OPTIONAL:

- Work fertilizers into the soil rather than dumping or broadcasting them onto the surface.
- Use beneficial insects where possible to control pests (green lacewings, ladybugs, praying mantis, ground beetles, parasitic nematodes, trichogramma wasps, seedhead weevils, and spiders prey on detrimental pest species).
- Use slow release fertilizers whenever possible to minimize leaching.

Scheduling

- ✓ Do not use pesticides if rain is expected within 24 hours.
- ✓ Apply pesticides only when wind speeds are low (less than 5 mph).

Disposal

- ✓ Purchase only the amount of pesticide that you can reasonably use in a given time period (month or year depending on the product).
- ✓ Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- ✓ Dispose of empty pesticide containers according to the instructions on the container label.

4. Managing Landscape Waste

- ✓ Compost leaves, sticks, or other collected vegetation or dispose of at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.

Also see Waste Handling and Disposal procedure sheet

- ✓ Place temporarily stockpiled material away from watercourses and storm drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- ✓ Reduce the use of high nitrogen fertilizers that produce excess growth requiring more frequent mowing or trimming.
- ✓ Inspection of drainage facilities should be conducted to detect illegal dumping of clippings/cuttings in or near these facilities. Materials found should be picked up and properly disposed of.
- ✓ Landscape wastes in and around storm drain inlets should be avoided by either using bagging equipment or by manually picking up the material.

5. Erosion Control

- ✓ Maintain vegetative cover on medians and embankments to prevent soil erosion. Apply mulch or leave clippings to serve as additional cover for soil stabilization and to reduce the velocity of storm water runoff.

Also see Waste Handling and Disposal procedure sheet

- ✓ Minimize the use of disking as a means of vegetation management because the practice may result in erodable barren soil.
- ✓ Confine excavated materials to pervious surfaces away from storm drain inlets, sidewalks, pavement, and ditches. Material must be covered if rain is expected.

LIMITATIONS:

Alternative pest/weed controls may not be available, suitable, or effective in every case.

REFERENCES:

California Storm Water Best Management Practice Handbooks. Industrial/Commercial Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. July 1993.

County of Orange. 2000. Public Facilities and Resources Department, Management Guidelines for the Use of Fertilizers and Pesticides. September.

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. 1995. King County Surface Water Management. July. On-line: http://dnr.metrokc.gov/wlr/dss/spcm.htm

Los Angeles County Stormwater Quality Model Programs. Public Agency Activities http://ladpw.org/wmd/npdes/model_links.cfm

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.

FP-3

ROADS, STREETS, AND HIGHWAYS OPERATION AND MAINTENANCE

Streets, roads, and highways are significant sources of pollutants in storm water discharges, and operation and maintenance (O&M) practices, if not conducted properly, can contribute to the problem. O&M practices may involve one or more of the following activities:

1. **Sweeping & Cleaning**
2. **Street Repair & Maintenance**
3. **Bridge and Structure Maintenance**

Streets, roads, and highways are significant sources of pollutants in storm water discharges, and operation and maintenance (O&M) practices, if not conducted properly, can contribute to the problem. O&M practices may involve one or more of the following activities:

Pollution prevention measures that should be consider and the minimum required and optional model procedures for each performance standard are provided below.

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measure for roads, streets, and highways operation and maintenance include:

- Use the least toxic materials available (e.g. water based paints, gels or sprays for graffiti removal)
- Recycle paint and other materials whenever possible.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

1. Sweeping & Cleaning

Sweeping Frequency and Timing

- ✓ Maintain a consistent sweeping schedule. Provide minimum monthly sweeping of streets.
- ✓ Perform street cleaning during dry weather if possible.
- ✓ Avoid wet cleaning or flushing of streets, and utilize dry methods where possible.
- ✓ If flushing of a street is absolutely necessary, sweep and remove debris before flushing. Do not let wash water enter storm drain inlets. Collect wash water and direct to a dirt or vegetated area, pump into a vacuum truck and dispose of properly.

OPTIONAL:

- Consider increasing sweeping frequency based on factors such as traffic volume, land use, field observations of sediment and trash accumulation, proximity to water courses, etc.

Equipment Operation and Selection

- ✓ Maintain cleaning equipment in good working condition and purchase replacement equipment as needed. Old sweepers should be replaced as needed with new technologically advanced sweepers (preferably regenerative air sweepers) that maximize pollutant removal.
- ✓ Operate sweepers at manufacturer requested optimal speed levels to increase effectiveness.
- ✓ Clean sweepers at a wash rack that drains to the sanitary sewer. The wash rack area should be covered and bermed and wash water should drain to a clarifier prior to entering the sanitary sewer.
- ✓ Regularly inspect vehicles and equipment for leaks, and repair immediately.

→ *Note: Permission must be obtained for any discharge of wash water to the sanitary sewer from the local sewering agency.*

OPTIONAL:

- If available use vacuum or regenerative air sweepers in the high sediment and trash areas (typically industrial/commercial).

Management of Material Removed by Sweeping

- ✓ Dispose of street sweeping debris and dirt at a landfill.
- ✓ Do not store swept material along the side of the street or near a storm drain inlet.
- ✓ If dewatering of saturated materials is necessary it should be conducted in a designated area away from storm drain inlets and the water contained for proper disposal.

→ *Note: Permission must be obtained for any discharge of wash water to the sanitary sewer from the local sewering agency.*

- ✓ If authorized by the local sanitation agency, water may be discharged to the sanitary sewer only after passing through a clarifier. As an alternative, dewatering can be conducted in a containment area in which saturated materials are placed on a tarp and allowed to dry. Dry debris is then disposed of properly.
- ✓ Keep debris storage to a minimum during the wet season or make sure debris piles are contained (e.g. by berming the area) or covered (e.g. with tarps or permanent covers).

Maximize Access for Sweepers

- ✓ Keep accurate operation logs to track program.
- ✓ Properly maintain and operate equipment; which will increase efficiency.
- ✓ Sweeping should be conducted as close to the curb line as possible.

OPTIONAL:

- Institute a parking policy to restrict parking in problematic areas during periods of street sweeping.
- Post permanent street sweeping signs in problematic areas; use temporary signs if installation of permanent signs is not possible.
- Develop and distribute flyers notifying residents of street sweeping schedules.

2. Repair and Maintenance

Pavement Marking

- ✓ Develop paint handling procedures for proper use, storage, and disposal of paints.
- ✓ Transfer and load paint and hot thermoplastic away from storm drain inlets.
- ✓ Street or hand sweep thermoplastic grindings. Yellow thermoplastic grindings may require special handling as they may contain lead.
- ✓ Replace paints containing lead and tributyltin with less toxic alternatives.
- ✓ Use water based paints. Clean application equipment in a sink that is connected to the sanitary sewer.
- ✓ Properly store leftover paints if they are to be kept for the next job, or dispose of properly.
- ✓ See *Spill Control procedure sheet* for guidance on the proper cleanup of paint spills.

Concrete Installation and Repair

- ✓ Avoid mixing excess amounts of fresh concrete or cement mortar on-site. Only mix what is needed for the job.
- ✓ Wash concrete trucks off site or in designated areas on site, such that there is no discharge of concrete wash water into storm drain inlets, open ditches, streets, or other stormwater conveyance structures.

- ✓ Store concrete materials under cover, away from drainage areas.
- ✓ Return leftover materials to the transit mixer. Dispose of small amounts of hardened excess concrete, grout, and mortar in the trash.
- ✓ Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile, or dispose in the trash.
- ✓ When washing poured concrete areas to remove fine particles and expose the aggregate, contain the wash water for proper disposal; do not discharge water to the storm drain system.
- ✓ Do not allow excess concrete to be dumped on-site, except in designated areas.
- ✓ Apply concrete, asphalt, and seal coat during dry weather to allow the material to adequately dry prior to a rain event.
- ✓ When making saw cuts in pavement, use as little water as possible and perform during dry weather. Cover each nearby or appropriate storm drain inlet completely with filter fabric or plastic during the sawing operation and contain the slurry by placing straw bales, sandbags, or gravel dams around the inlets. After the liquid drains or evaporates, shovel or vacuum the slurry residue from the pavement or gutter and remove from site. Alternatively, a small on-site vacuum may be used to pick up the slurry as this will prohibit slurry from reaching storm drain inlets.

Patching, Resurfacing, and Surface Sealing

- ✓ Pre-heat, transfer or load hot bituminous material away from storm drain inlets.
- ✓ Apply concrete, asphalt, and seal coat during dry weather to allow the material to adequately dry prior to a rain event.
- ✓ Where applicable, cover and seal each nearby or appropriate storm drain inlet (with waterproof material, plastic or mesh) and maintenance holes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and until all water from emulsified oil sealants has drained or evaporated. Clean any debris from covered man holes and storm drain inlets when the job is complete.
- ✓ Use only as much water as necessary for dust control, to avoid runoff.
- ✓ Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.
- ✓ Prior to a rain event or at the completion of a project, sweep the project area by hand or with a street sweeper.

Equipment Cleaning, Maintenance, and Storage

Also see Equipment Repair & Maintenance procedure sheet.

- ✓ Clean equipment including sprayers, sprayer paint supply lines, patch and paving equipment, and mudjacking equipment at the end of each day. If equipment can be cleaned and materials reapplied at the job site, do so in compliance with the laws and regulations. Clean in a sink or other area (e.g. vehicle wash area) that is connected to the sanitary sewer.

- ✓ If refueling or repairing vehicles and equipment must be done on-site, conduct the activity away from storm drain inlets and watercourses.
- ✓ Place drip pans or absorbent materials under heavy equipment when not in use.
- ✓ Clean paint brushes and tools covered with water-based paints in sinks connected to sanitary sewers. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.

→ *Note: Permission must be obtained for any discharge of wash water to the sanitary sewer from the local sewering agency.*

OPTIONAL:

- Conduct cleaning at a corporation or maintenance yard if possible.
- When practical, perform major equipment repairs at the corporation yard.

→ *In addition to the procedures above, review and apply general procedures outlined for Minor Construction activities when conducting street, road, and highway repair and maintenance activities.*

3. Bridge and Structure Maintenance

Painting and Paint Removal

- ✓ Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
- ✓ Do not transfer or load paint near storm drain inlets or watercourses.
- ✓ Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint container.
- ✓ If sand blasting is used to remove paint, cover nearby storm drain inlets prior to starting work.
- ✓ If the bridge crosses a watercourse, perform work on a maintenance traveler or platform, or use suspended netting or tarps to capture paint, rust, paint removing agents, or other materials, to prevent discharge of materials to surface waters. If sanding, use a sander with a vacuum filter bag.
- ✓ Recycle paint when possible (e.g. paint may be used for graffiti removal activities). Dispose of paint at an appropriate household hazardous waste facility.
- ✓ See Spill Control procedure sheet for guidance on the proper cleanup of paint spills.

Graffiti Removal

- ✓ Avoid graffiti abatement activities during rain events.
- ✓ Protect nearby storm drain inlets prior to removing graffiti from walls, signs, sidewalks, or other structures needing graffiti abatement. Clean up

afterwards by sweeping or vacuuming thoroughly, and/or by using absorbent and properly disposing of the absorbent.

- ✓ Note that care should be taken when disposing of waste since it may need to be disposed of as hazardous waste.
- ✓ When graffiti is removed by painting over, implement the procedures under Painting and Paint Removal above.
- ✓ Direct runoff from sand blasting and high pressure washing (with no cleaning agents) into a landscaped or dirt area.
- ✓ If a graffiti abatement method generates wash water containing a cleaning compound (such as high pressure washing with a cleaning compound), plug nearby storm drains and collect wash water and dispose of properly.

OPTIONAL:

- Consider using a waterless and non-toxic chemical cleaning method for graffiti removal (e.g. gels or spray compounds).

Guardrail and Fence Repair

- ✓ When cleaning guardrails or fences follow the appropriate surface cleaning methods (depending on the type of surface) outlined in the *Sidewalk, Plaza, and Fountain Maintenance and Cleaning* procedure sheet.
- ✓ If painting is conducted, follow the *Painting and Paint Removal* procedures above.
- ✓ If graffiti removal is conducted, follow the *Graffiti Removal* procedures above.
- ✓ If construction takes place, see the procedure sheet for *Minor Construction*.
- ✓ Recycle materials whenever possible.

LIMITATIONS:

Limitations related to street sweeping may include high equipment costs, the potential inability to restrict parking in urban areas, the need for sweeper operator training, the inability of current sweeper technology to remove oil and grease, and the lack of scientific evidence regarding the expected levels of pollutant removal.

REFERENCES:

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

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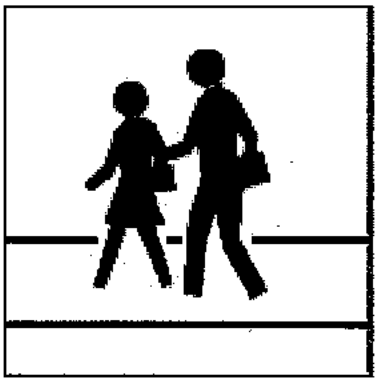

FP-4

SIDEWALK, PLAZA, AND FOUNTAIN MAINTENANCE AND CLEANING

Pollutants on sidewalks and other pedestrian traffic areas and plazas are typically due to littering and vehicle use. Fountain water containing chlorine and copper-based algaecides is toxic to aquatic life. Proper inspection, cleaning, and repair of pedestrian areas and city surfaces and structures can reduce pollutant runoff from these areas. Maintaining these areas may involve one or more of the following activities:

1. **Surface Cleaning**
2. **Graffiti Cleaning**
3. **Sidewalk Repair**
4. **Controlling Litter**
5. **Fountain Maintenance**

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for sidewalk, plaza, and fountain maintenance and cleaning include:

- Use dry cleaning methods whenever practical for surface cleaning activities.
- Use the least toxic materials available (e.g. water based paints, gels or sprays for graffiti removal).
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

1. Surface Cleaning

Discharges of wash water to the storm water drainage system from cleaning or hosing of impervious surfaces is prohibited.

Sidewalks, Plazas

- ✓ Use dry methods (e.g. sweeping, backpack blowers, vacuuming) whenever practical to clean sidewalks and plazas rather than hosing, pressure washing, or steam cleaning. DO NOT sweep or blow material into curb; use devices that contain the materials.
- ✓ If water must be used, block storm drain inlets and contain runoff. Discharge wash water to landscaping or contain and dispose of properly.

Parking Areas, Driveways, Drive-thru

- ✓ Parking facilities should be swept/vacuumed on a regular basis. Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- ✓ If water must be used, block storm drain inlets and contain runoff. Discharge wash water to landscaping or contain and dispose of properly.
- ✓ Sweep all parking lots at least once before the onset of the wet season.
- ✓ Use absorbents to pick up oil; then dry sweep.
- ✓ Appropriately dispose of spilled materials and absorbents.

OPTIONAL:

- Consider increasing sweeping frequency based on factors such as traffic volume, land use, field observations of sediment and trash accumulation, proximity to water courses, etc.

Building Surfaces, Decks, etc., without loose paint

- ✓ Use high-pressure water, no soap.
- ✓ If water must be used, block storm drain inlets and contain runoff. Discharge wash water to landscaping or contain and dispose of properly.

Unpainted Building Surfaces, Wood Decks, etc.

- ✓ If water must be used, block storm drain inlets and contain runoff. Discharge wash water to landscaping or contain and dispose of properly.
- ✓ Use a biodegradable cleaning agent or acid wash to remove deposits, wood restorer, or other chemicals. Screen wash water using an appropriate filtering device (e.g. filter fabric), if needed, to catch debris.
- ✓ Make sure pH is between 6.5 and 8.5 THEN discharge to landscaping (if cold water without a cleaning agent) otherwise dispose of properly.

2. Graffiti Cleaning

Graffiti Removal

See Roads, Streets, and Highways Operation and Maintenance procedure sheet.

- ✓ Avoid graffiti abatement activities during rain events.
- ✓ When graffiti is removed by painting over, implement the procedures under Painting and Paint Removal in the *Roads, Streets*, and *Highway Operation and Maintenance* procedure sheet.

- ✓ Protect nearby storm drain inlets prior to removing graffiti from walls, signs, sidewalks, or other structures needing graffiti abatement. Clean up afterwards by sweeping or vacuuming thoroughly, and/or by using absorbent and properly disposing of the absorbent.
- ✓ Note that care should be taken when disposing of waste since it may need to be disposed of as hazardous waste.

OPTIONAL:

- Consider using a waterless and non-toxic chemical cleaning method for graffiti removal (e.g. gels or spray compounds).

3. Sidewalk Repair

Surface Removal and Repair

- ✓ Schedule surface removal activities for dry weather if possible.
- ✓ Avoid creating excess dust when breaking asphalt or concrete.
- ✓ Take measures to protect nearby storm drain inlets prior to breaking up asphalt or concrete (e.g. place hay bales or sand bags around inlets). Clean afterwards by sweeping up material.
- ✓ Designate an area for clean up and proper disposal of excess materials.
- ✓ Remove and recycle as much of the broken pavement as possible.
- ✓ When making saw cuts in pavement, use as little water as possible. Cover each storm drain inlet with filter fabric during the sawing operation and contain the slurry by placing straw bales, sandbags, or gravel dams around the inlets. After the liquid drains shovel or vacuum the slurry, remove from site and dispose of properly.

Also see the street sweeping section of the Roads, Streets, and Highways Operation and Maintenance procedure sheet.

- ✓ Always dry sweep first to clean up tracked dirt. Use a street sweeper or vacuum truck. Do not dump vacuumed liquid in storm drains. Once dry sweeping is complete, the area may be hosed down if needed. Discharge wash water to landscaping, pump to the sanitary sewer if permitted to do so or contain and dispose of properly.

Concrete Installation and Repair

- ✓ Avoid mixing excess amounts of fresh concrete or cement mortar on-site. Only mix what is needed for the job.
- ✓ Wash concrete trucks off-site or in designated areas on-site, such that there is no discharge of concrete wash water into storm drain inlets, open ditches, streets, or other storm water conveyance structures.

See Roads, Streets, and Highways Operation and Maintenance procedure sheet.

- ✓ Store dry and wet concrete materials under cover, protected from rainfall and runoff and away from drainage areas. After job is complete remove temporary stockpiles (asphalt materials, sand, etc.) and other materials as soon as possible.
- ✓ Return leftover materials to the transit mixer. Dispose of small amounts of

excess concrete, grout, and mortar in the trash.

- ✓ When washing concrete to remove fine particles and expose the aggregate, contain the wash water for proper disposal.
- ✓ Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stock pile, or dispose in the trash.
- ✓ Protect applications of fresh concrete from rainfall and runoff until the material has hardened.

4. Litter Control

- ✓ Enforce anti-litter laws.
- ✓ Provide litter receptacles in busy, high pedestrian traffic areas of the community, at recreational facilities, and at community events.
- ✓ Cover litter receptacles and clean out frequently to prevent leaking/spillage or overflow.

OPTIONAL:

- Post "No Littering" signs.

5. Fountain Maintenance

- ✓ Do not use copper-based algaecides. Control algae with chlorine or other alternatives, such as sodium bromide.
- ✓ When draining fountains, never discharge water to a street or storm drain; discharge to the sanitary sewer
- ✓ Allow chlorine to dissipate for a few days and then recycle/reuse water by draining it gradually onto a landscaped area. Water must be tested prior to discharge to ensure that chlorine is not present (concentration must be less than 0.1 ppm).

LIMITATIONS:

Surface cleaning activities that require discharges to the local sanitation agency will require coordination with the agency.

REFERENCES:

Bay Area Stormwater Management Agencies Association. 1996. Pollution From Surface Cleaning.

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality

Control Board. July. 1998.

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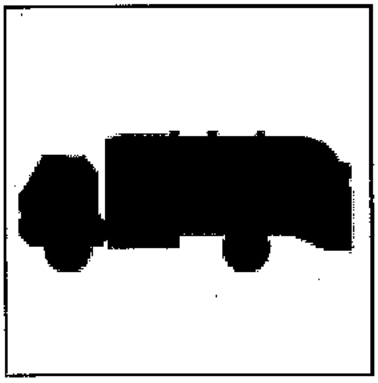


FP-5

SOLID WASTE HANDLING

It is important to control litter to eliminate trash and other materials in storm water runoff. Waste reduction is a major component of waste management and should be encouraged through training and public outreach. Management of waste once it is collected may involve reuse, recycling, or proper disposal. Specific solid waste handling activities may include one or more of the following:

1. **Solid Waste Collection**
2. **Waste Reduction and Recycling**
3. **Hazardous Waste Collection**
4. **Litter Control**

Reduce by purchasing only the amount needed.
Reuse products when possible.
Recycle leftover products that are recyclable, and dispose of other wastes safely.

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for solid waste handling include:

- Reuse products when possible.
- Recycle leftover products that are recyclable.
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

1. Solid Waste Collection

✓ Implement procedures, where applicable, to collect, transport, and dispose of solid waste at appropriate disposal facilities in accordance with applicable federal, state, and local laws and regulations. Optional disposal options include the reuse and recycling of appropriate materials (see following sections).

- ✓ Include properly designed trash storage areas.
- ✓ Regularly inspect solid waste containers for structural damage. Repair or replace damaged containers as necessary.
- ✓ Secure solid waste containers; containers must be closed tightly when not in use.
- ✓ Do not fill waste containers with washout water or any other liquid.
- ✓ Remove all debris from containers prior to cleaning with water. Only clean out containers in a designated area that drains to a landscaped area or a washrack that is connected to a sanitary sewer.
- ✓ Minimize spillage/leaking from solid waste containers. For larger solid waste containers (especially compactors) that utilize a hydraulic fluid pump system, regularly inspect and replace faulty pumps or hoses to minimize the potential of releases and spills.

Also see Emergency Spill Response procedure sheet.

- ✓ Ensure that only appropriate solid wastes are disposed of. Certain wastes such as hazardous wastes, appliances, fluorescent bulbs, pesticides, etc. may not be disposed of in solid waste containers.

2. Waste Reduction and Recycling

Although many types of waste can be recycled, recycling options for each waste type may be limited. All gasoline, antifreeze, waste oil, and lead-acid batteries can be recycled. Latex and oil-based paint can be reused, as well as recycled. Materials that cannot be reused or recycled should be disposed of properly.

- ✓ Provide containers for the collection and storage of recyclable materials.
- ✓ Do not mix liquid wastes, this can cause chemical reactions or make recycling impossible and complicate disposal.
- ✓ Recycle used motor oil. Municipalities are required to have a used oil recycling element within their integrated waste management plan.

> ➔ *The California Integrated Waste Management Board has a Recycling Hotline, (800) 553-2962, that provides information and recycling locations for used oil.*

3. Hazardous Waste Collection

Household hazardous wastes (HHW) are defined as waste materials which are typically found in homes or similar sources, which exhibit characteristics such as: corrosivity, ignitability, reactivity, and/or toxicity, or are listed as hazardous materials by EPA.

List of most common HHW products:
Drain opener
Oven cleaners
Wood and metal cleaners and polishes
Paint Thinners
Automotive oil and fuel additives
Adhesives
Grease and rust solvents Batteries
Herbicides
Paint strippers and removers Pesticides
Fungicides/wood preservatives
Starter fluids
Carburetor and fuel injection cleaners

- ✓ Follow proper storage and disposal measures for hazardous waste materials as identified on packaging or Material Safety Data Sheets.
- ✓ Emergencies related to hazardous waste should be reported to 911

OPTIONAL:

- Identify and promote use of non-hazardous alternatives.
- Promote household hazardous waste (HHW) reuse and recycling.

4. Litter Control

- ✓ Enforce anti-litter laws.
- ✓ Provide litter receptacles in busy, high pedestrian traffic areas of the community, at recreational facilities, and at community events.
- ✓ Clean out and cover litter receptacles frequently to prevent overflow.
- ✓ Increase litter control for events generating substantial quantities of litter.

OPTIONAL:

- Post "No Littering" signs
- Place trash receptacles at transit stops and maintain as necessary.
- Participate in and/or organize additional clean up programs (e.g. "Coastal Clean Up Day", "Pride Days", "Volunteer Connection Days").

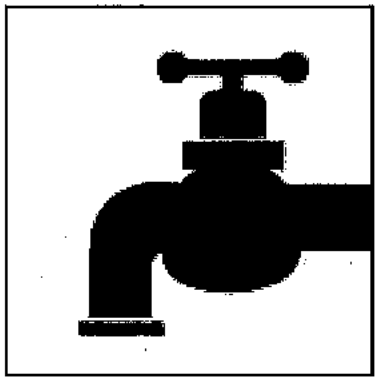
LIMITATIONS:

Requires continuous public education.

REFERENCES:

Bay Area Stormwater Management Agencies Association. 1996. Pollution From Surface Cleaning.

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning



FP-6

WATER AND SEWER UTILITY OPERATION AND MAINTENANCE

Although the operation and maintenance of public utilities are not considered themselves a chronic source of stormwater pollution, some activities and accidents can result in the discharge of pollutants that can pose a threat to both human health and the quality of receiving waters if they enter the storm drain system. Activities associated with the operation and maintenance of water and sewer utilities to prevent and handle such incidents include the following:

1. **Water Line Maintenance**
2. **Sanitary Sewer Maintenance**
3. **Spill/Leak/Overflow Control, Response, and Containment**

Cities that do not provide maintenance of water and sewer utilities should coordinate with the contracting agency responsible for these activities and ensure that these model procedures are followed.

POLLUTION PREVENTION:

Pollution prevention measures have been considered and incorporated in the model procedures. Implementation of these measures may be more effective and reduce or eliminate the need to implement other more complicated or costly procedures. Possible pollution prevention measures for water and sewer utility operation and maintenance include:

- Inspect potential non-storm water discharge flow paths and clear/cleanup any debris or pollutants found (i.e. remove trash, leaves, sediment, and wipe up liquids, including oil spills).
- Once per year, educate municipal staff on pollution prevention measures.

MODEL PROCEDURES:

1. Water Line Maintenance

Procedures can be employed to reduce pollutants from discharges associated with water utility operation and maintenance activities. Planned discharges may include fire hydrant testing, flushing water supply mains after new construction, flushing lines due to complaints of taste and odor, dewatering mains for maintenance work. Unplanned discharges from treated, recycled water, raw water, and groundwater systems operation and maintenance activities can occur from water main breaks, sheared fire hydrants, equipment malfunction, and operator error.

Planned Discharges

✓ For planned discharges use one of the following options:

- Reuse water for dust suppression, irrigation, or construction compaction
- Discharge to the sanitary sewer system with approval
- Discharge to the storm drain system or to a creek using applicable pollution control measures listed below (this option is ONLY applicable to uncontaminated pumped ground water, water line flushing, fire hydrant testing and flushing, discharges from potable water sources other than water main breaks) and may require a permit from the Regional Water Quality Control Board.

✓ If water is discharged to a storm drain inlet (catch basin), control measures must be put in place to control potential pollutants (i.e. sediment, chlorine, etc.). Examples of some storm drain inlet protection options include:

- Silt fence – appropriate where the inlet drains a relatively flat area.
- Gravel and wire mesh sediment filter – Appropriate where concentrated flows are expected.
- Wooden weir and fabric – use at curb inlets where a compact installation is desired.

✓ Prior to discharge, inspect discharge flow path and clear/cleanup any debris or pollutants found (i.e. remove trash, leaves, sediment, and wipe up liquids, including oil spills).

✓ Select appropriate pollution control measure(s) considering the receiving system (i.e. curb inlet, drop inlet, culvert, creek, etc.) and ensure that the control device(s) fit properly.

✓ General design considerations for inlet protection devices include the following:

- The device should be constructed such that cleaning and disposal of trapped sediment is made easy, while minimizing interference with discharge activities.
- Devices should be constructed so that any standing water resulting from the discharge will not cause excessive inconvenience or flooding/damage to adjacent land or structures.

✓ The effectiveness of control devices must be monitored during the discharge period and any necessary repairs or modifications made as needed.

OPTIONAL:

- Sediment removal may be enhanced by placing filter fabric, gravel bags, etc. at storm drain inlets.

Unplanned Discharges

✓ Stop the discharge as quickly as possible by turning off water source.

✓ Inspect flow path of the discharged water:

- Control erosion along the flow path.
- Identify areas that may produce significant sediment or gullies, use sandbags to redirect the flow.
- Identify erodible areas which may need to be repaired or protected during subsequent repairs or corrective actions

✓ If repairs or corrective action will cause additional discharges of water, select the appropriate procedures for erosion control, chlorine residual, turbidity, and chemical additives. Prevent potential pollutants from entering the flow path and ensure that no additional discharged water enters storm drain inlets.

2. Sanitary Sewer Maintenance

Applicable to municipalities who own and operated a sewage collection system. Facilities that are covered under this program include sanitary sewer pipes and pump stations owned and operated by the Permittee. The owner of the sanitary sewer facilities is the entity responsible for carrying out this prevention and response program.

Sewer System Cleaning

- ✓ Sewer lines should be cleaned on a regular basis to remove grease, grit, and other debris that may lead to sewer backups.
- ✓ Establish routine maintenance program. Cleaning should be conducted at an established minimum frequency and more frequently for problem areas such as restaurants that are identified
- ✓ Cleaning activities may require removal of tree roots and other identified obstructions.

Preventative and Corrective Maintenance

- ✓ During routine maintenance and inspection note the condition of sanitary sewer structures and identify areas that need repair or maintenance. Items to note may include the following:
  - cracked/deteriorating pipes
  - leaking joints/seals at manhole
  - frequent line plugs
  - line generally flows at or near capacity
  - suspected infiltration or exfiltration
- ✓ Document suggestions and requests for repair and report the information to the appropriate manager or supervisor.
- ✓ Prioritize repairs based on the nature and severity of the problem. Immediate clearing of blockage or repair is required where an overflow is currently occurring or for urgent problems that may cause an imminent overflow (e.g. pump station failures, sewer line ruptures, sewer line blockages). These repairs may be temporary until scheduled or capital improvements can be completed.
- ✓ Review previous sewer maintenance records to help identify "hot spots" or areas with frequent maintenance problems and locations of potential system failure.

3. Spill/Leak/Overflow Control, Response, and Containment

Control

Also see Drainage System procedures sheet

- ✓ Refer to countywide *Illicit Discharge Detection and Elimination Program.* Components of this program include:
  - Investigation/inspection and follow-up
  - Elimination of illicit discharges and connections
  - Enforcement of ordinances
  - Respond to sewage spills

- Facilitate public reporting of illicit discharges and connections. A citizen's hotline for reporting observed overflow conditions should be established to supplement the field screening efforts being conducted by the Principal Permittee.

Response and Containment

- ✓ Establish lead department/agency responsible for spill response and containment. Provide coordination within departments.
- ✓ When a spill, leak, and/or overflow occurs, keep sewage from entering the storm drain system to the maximum extent practicable by covering or blocking storm drain inlets or by containing and diverting the sewage away from open channels and other storm drain facilities (using sandbags, inflatable dams, etc.).
- ✓ If a spill reaches the storm drain notify County of Orange Health Care Agency through Control One at (714) 628-7208.
- ✓ Remove the sewage using vacuum equipment or use other measures to divert it back to the sanitary sewer system.
- ✓ Record required information at the spill site.
- ✓ Perform field tests as necessary to determine the source of the spill.
- ✓ Develop additional notification procedures regarding spill reporting as needed.

LIMITATIONS:

Private property access rights needed to perform testing along storm drain right-of-ways. Requirements of municipal ordinance authority for suspected source verification testing necessary for guaranteed rights of entry.

REFERENCES:

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

Los Angeles County Stormwater Quality. Public Agency Activities Model Program. On-line: http://ladpw.org/wmd/npdes/public_TC.cfm

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.

Santa Clara Valley Urban Runoff Pollution Prevention Program. Water Utility Pollution Prevention Plan.

Exhibit 5.9

WASTE WATER DISCHARGE/BEST MANAGEMENT PRACTICE (BMP)

Prepared By: *Property Management*

PURPOSE

This procedure describes the Best Management Practices (BMPs) for water pollution control. The goal of the procedure is to comply with federal, state, and local regulations and to minimize the discharge of pollutants into receiving waters or storm water drainage systems caused by wastewater run off from emergency and non-emergency activities.

BACKGROUND

This procedure describes the Best Management Practices (BMPs) for water pollution control. The goal of the procedure is to comply with federal, state, and local regulations and to minimize the discharge of pollutants into receiving waters or storm water drainage systems caused by wastewater run off from emergency and non-emergency activities.

DEFINITIONS

Routine Activities: Daily actions and procedures in the normal course of the operations and maintenance of OCFA facilities and equipment.

Emergency Activities: Those activities directly associated with the OCFA emergency service response

PROCEDURE

Emergency Activities

Water runoff created as a result of an emergency is exempt from regulatory requirements. However, when and where possible and practicable, reasonable care shall be taken to minimize the impact upon the environment. The emergency exception to normal BMPs shall exist only as long as necessary as determined by the incident commander.

Discharges Associated with Fire Fighting

- If possible, avoid directing water flows directly onto surfaces that erode and where runoff may enter waterways or storm drains.

WASTE WATER DISCHARGE/BEST MANAGEMENT PRACTICE (BMP)

Prepared By: *Property Management*

- If possible, apply water flows in such a manner that runoff will flow over vegetated areas prior to entering waterways or storm drains.

- When practical, block the storm drains that will prevent debris from entering the storm drain system.

Discharges Associated with Trauma Scenes

Trauma scene wastes (i.e. blood, body parts, and human tissue) may be generated at various types of crime or accident scenes. These types of wastes can pose a serious human health risk to those who are responsible for overseeing and conducting the cleanup. It is important that the procedures described below be employed when feasible to protect personnel and prevent unnecessary discharge of material into the storm drain. The types of blood borne pathogens that may be encountered at a trauma scene include, but are not limited to, HIV, Hepatitis B, and Hepatitis C. See Attachment for specific clean-up procedures.

Non-Emergency Activities

Non-emergency activities must be conducted in a manner that prevents discharge of pollutants into the storm drain system and restricts to the maximum extent possible, runoff of water from OCFA facilities.

Training Activities

- Where possible, direct water flows to landscaped, green belt areas or biological swales.

- When flowing water cannot be contained in the landscaped areas, survey the area prior to the training exercise to ensure that debris and pollutants will not enter the storm water system as a result of the flows generated during the drill.

- Where possible, use fog streams for short durations, and/or low gpm nozzle settings.

- Foam should not be used for training except as specifically allowed within the RFOTC.

Regional Fire Operations Training Center and Fire Station Activities

Vehicle and Equipment Washing

- All washing of apparatus and other OCFA vehicles on OCFA facilities shall be confined to vehicle wash down locations connected to water interceptor/clarifier systems.

WASTE WATER DISCHARGE/BEST MANAGEMENT PRACTICE (BMP)

Prepared By: *Property Management*

- Vehicle and equipment washing at fire stations that are not equipped with interceptor/clarifier systems shall be accomplished only where clean water can be contained on site or directed into the storm drain system.
- Runoff water shall be prevented from leaving the site to the maximum extent possible.
- Washing of vehicles is prohibited on front driveway aprons (see exception below).
- The primary method of washing apparatus is bucket washing and wiping.
- The next preferred apparatus washing method is use of low volume, high pressure systems which allow evaporation on site, and prevent site runoff.
- When other methods of cleaning the unit are insufficient and thorough washing of equipment is necessary, the following procedures shall be followed:
    - Minimize use of water and utilize a shut off device at the hose end.
    - When possible, use only water and the minimum quantity of cleaning agents.
    - Steam cleaning of engines, greasy equipment, etc., shall be conducted at RFOTC Fleet Services only.
    - Only OCFA apparatus and vehicle may be washed on OCFA facilities.

Stations with Approved Wash Areas

Stations with vehicle wash areas are connected to water clarification systems that are designed and engineered to clean water runoff prior to entering the sanitary sewer system. For stations so equipped, all vehicle and equipment washing shall be confined to the wash down area.

Stations without Designed Wash Areas

Stations without a designed wash area shall select and identify a vehicle washing area at the rear of the fire station that includes the following:

- Areas that are relatively level and that allow for evaporation rather than draining to a storm drain

WASTE WATER DISCHARGE/BEST MANAGEMENT PRACTICE (BMP)

Prepared By: *Property Management*

- Areas that are free of petroleum, oils and distillates and that are swept clean of debris and potential pollutants that could be carried into the storm drain system

- Areas that allow for prevention of runoff into storm drains by flowing onto landscaped or green areas but that do not cause damage or erosion

Battalion Chiefs shall approve a station vehicle wash area for all stations without a wash area connected to the sanitary sewer. Each station shall prepare and post a site plan that clearly identifies the approved wash area.

Those fire stations that do not have a rear area to wash fire equipment are allowed to utilize the front driveway apron but shall make every effort possible to adhere to the other identified Best Management Practices.

Vehicle Fueling

- Automatic fueling shut off devices should not be defeated by "topping off" the fuel tank.

- Any fuel spills resulting from refueling shall be immediately cleaned.

- Maintain a spill control kit consisting of which contains at least absorbent cloth for minor wipe-up/clean-up, petroleum absorbent containment materials, granulated petroleum absorbent materials, shovel, and broom. A metal can, with a tight fitting lid, should be used to contain any absorbent used to collect spilled fuel.

- Washing down the fueling area is prohibited.

Washing Hose, Salvage Covers, and Hall Runners

- Sweep the area to be used before starting.

- Direct water flows to landscaped/green areas that will not cause erosion or damage.

- Where practical, allow water to evaporate rather than run off.

- Prevent any contaminates, such as cleaning agents, from entering the storm drain system.

- Use methods that employ minimal water.

WASTE WATER DISCHARGE/BEST MANAGEMENT PRACTICE (BMP)

Prepared By: *Property Management*

Facility Maintenance

- Monitor and maintain irrigation systems to minimize volume, runoff and erosion.
- Maintain landscaped areas to prevent introduction of leaves and other landscape waste into the storm water system.
- Hydraulic/hose washing of hardscape is prohibited. Hardscape areas shall be swept and collected debris placed into a proper receptacle.
- Vehicle parking areas should be periodically inspected and significant accumulations of materials and substances (oil, fuel, grease, leaves, etc.) removed and disposed of. When oil and grease accumulations cannot be cleaned with absorbents, towels, etc., Property Management may be contacted for assistance.

General Equipment Clean Up and Decontamination at the Fire Station Following a Trauma Incident

Decontaminate all equipment that has been contaminated with bodily fluids by using one of the following methods:

- Wash with soap and hot water in an approved area connected to the sanitary sewer.
- Soak in germicidal solution for a period of time recommended in the manufacturer's instructions and rinse well in an approved area that is connected to a sanitary sewer.
- Spray with germicide and wipe, re-spray, and wipe clean. All decontamination wipes that are saturated with liquid blood must be placed in a red biohazard bag and disposed of in an approved medical waste container at the hospital.

RELATED REFERENCES

SOP HR.02.02 Communicable Disease Exposure

SOP HR.02.03 Communicable Disease Exposure Prevention

WASTE WATER DISCHARGE/BEST MANAGEMENT PRACTICE (BMP)

Prepared By: *Property Management*

LEGAL CITES/REFERENCES

None

ATTACHMENTS

- Trauma Scene Clean-Up

Trauma Scene Clean-Up

General Trauma Scene Cleanup Guidelines

- Trauma scene cleanup operations must be performed in accordance with the Medical Waste Management Act, *California Health and Safety Code, Sections 117600 – 118360.* Fire Departments on emergency calls who clean up a scene themselves are not required to have a Biowaste Hauling Permit to remove liquid or solid trauma scene waste from the scene for temporary storage or disposal. The County of Orange Medical Waste Section Emergency Response through Control 1 after hours (714) 628-7008 is available for consultation/assistance with trauma scene management.

- A Registered Trauma Scene Management Practitioner (RTSMP) is necessary when a scene requires decontamination and cleanup beyond the capability of Public Agency personnel on scene. RTSMP's are registered with the Department of Health Services pursuant to Section 118321 of the Medical Waste Management Act. A list of RTSMP's can be obtained from the California Department of Health Services. Additional information may be obtained by calling the Department of Health Services at (916) 327-6904.

- Additional information and guidance to be implemented may be obtained 24 hours a day by contacting the County of Orange Public Facilities and Resources Department for Waste Water Run Off BMP at (714) 567-6363 or Orange County Environmental Health for Trauma Scene Clean-up (BMP) at (714) 667-3784. Orange County Communication (Control 1) has 24-hour contacts with both agencies.

Trauma Scene Clean-up Public Property (BMP)

Non-Fatality Trauma Scene Requiring Minor Trauma Scene Cleanup.
Determine if on-scene personnel can handle the trauma scene cleanup without the services of a RTSMP. If the IC/Company Officer determines the trauma scene clean-up can be performed by on scene personnel, then proceed using the following procedures:

- Assure SOP HR.02.02 *Communicable Disease Exposure* and SOP HR.02.03 *Communicable Disease Exposure Prevention* are followed

- Stabilize scene to prevent blood, body tissue, or body parts from entering the storm drain, follow same procedures used to prevent hazardous materials from entering storm drain

- Place any body tissue or body parts in appropriate red biohazard bags; these bags are to be taken to appropriate hospital for disposal

- All blood on ground must be cleaned up by spraying 10% bleach to water solution on the blood and letting stand for 10 minutes. After the bleach/water solution has been on the blood for 10 minutes, it can then be washed down the gutter to the storm drain inlet. All debris is to be removed from the gutter leading to the storm drain prior to washing down.
  - The 10% bleach/water solution must be mixed daily or mixed when needed. The bleach/water solution is not to be carried on units pre-mixed for more than 24 hours at a time.

Trauma Scene Clean-Up

Non-Fatality Trauma Scene Requiring the Use of an RTSMP

In the event the IC/Company Officer determine that the trauma scene clean-up exceeds the capabilities of the emergency personnel on scene, (i.e. exceeds the amount of trauma scene cleanup supplies carried on the unit such as red biohazard bags, bleach solution, etc.), then follow these procedures:

- Request through ECC a representative from the jurisdiction where the trauma scene has occurred to respond to the scene
  1. Contract City - Request Public Works official
  2. Unincorporated Areas – Request Orange County Environmental Health official
  3. Freeways – Orange County Environmental Health, California Highway Patrol should standby until they arrive.

- Standby until the appropriate official arrives on scene. If law enforcement has a need to remain on scene for investigation, etc., the IC/Company Officer may coordinate with them as to who will remain waiting for the appropriate official. Once the appropriate official arrives, they will make contact with an approved RTSMP to arrange for cleanup and make arrangements for payment.

Fatality Trauma Scene Cleanup

When a fatality occurs, requiring blood, body tissue, or body parts clean up, the then follow these procedures:

- Stabilize scene to prevent blood, body tissue, or body parts from entering the storm drain. Follow the same procedures to prevent hazardous materials from entering storm drain. IC/Company Officer must coordinate closely with law enforcement officials to assure that any stabilization efforts do not interfere with their investigation and possible destruction of evidence.

- Law enforcement personnel should standby while waiting the arrival of the Coroner.

- The Coroner will be responsible for the trauma scene cleanup.

Trauma Scene Cleanup Private Property (BMP)

Non-Fatality Trauma Scene Cleanup

When an incident occurs on private property and has the potential for allowing blood, body tissue, or body parts to enter the storm drain system, the same procedures are to be followed as on public property.

Fatality Trauma Scene Cleanup

When a fatality on private property occurs requiring trauma scene cleanup, the procedures will be the same as for a fatality on public property.

CITY OF DANA POINT

PUBLIC WORKS – ENGINEERING SERVICES
33282 Golden Lantern • Dana Point, Ca 92629 • 949.248.3554 • www.danapoint.org

WATER QUALITY REQUIREMENTS FOR SPECIAL EVENTS

To prevent ocean pollution from the activities at your event and maintain compliance with required State storm water regulations, the City requires all event organizers, staff and vendors to implement the following Best Management Practices (BMPs) to provide effective measures for the control of pollution. The BMPs are designed to prevent pollutants, including bacteria, litter and runoff from entering the street, gutters and storm drains which ultimately reach our beaches. The following are minimum BMPs, which may require modification for effective control. Any materials from your event (liquid or solid) that reach the streets and storm drains subject you to enforcement actions which can include clean up costs and monetary fines, so please read the BMPs carefully for each of the activities/ items that will be part of your event. Please remember that these requirements are in place to protect and improve our environment, creeks, and ocean. Should you have any questions, please contact Lisa Zawaski at 949-248-3584.

Please note that release of balloons (rubber, latex, mylar or any other material) is not allowed.
Balloons released into the environment cause creek and marine debris and harm land and marine wildlife.

ACTIVITY / ITEM	BEST MANAGEMENT PRACTICES (BMPs)
Trash/ Litter Management	• Ensure that an adequate number of receptacles are provided for use by vendors and guests. Any overflowing containers observed shall be managed in a timely manner. • All waste receptacles shall be leak tight and equipped with lids or covers. Dumpsters shall be closed when not in use. • Walk the site and pick up trash periodically Trash should not be allowed to be blown away. • Hazardous and liquid waste shall not be disposed of in dumpsters or trash bins. Hazardous waste shall be disposed of properly at a hazardous waste facility. Liquid waste, such as cooking grease or other food related materials, shall be properly disposed of off-site by generator. Other non-hazardous liquids, such as left over beverages, ice bin residual, etc, should be disposed of in the sanitary sewer system through a sink or toilet, or poured on a pervious area, such as a landscaped or dirt/gravel area, where the liquids can be fully absorbed prior to leaving the site. • If commercial vendors/sales are involved, provide required recycling containers as set forth by City contract waste hauler.
Portable Toilets	• Require your vendor to provide a secondary containment pan or storm drain inlet protection, if a spill could reach the storm drain. • Do not place portable toilets near or over a storm drain without secondary containment. • The contact information for the company responsible for the portable facilities must be clearly marked on or near the facilities. • Ensure adequate servicing to prevent overflows or leaks. • It is recommended that you request your vendor to stake down the portable toilets to prevent them from tipping over from wind or vandals, if appropriate.

Car Wash Fundraisers	• Contact the water provider to ensure that all water conservative rules and restrictions are adhered to. • The use of an experienced car wash fundraiser vendor, with proper containment equipment or dry methods are encouraged. • All car wash water must be contained on site and not allowed to drain to adjacent property or storm drains without treatment BMPs. • If there is adequate on-site area, car wash water may be allowed to absorb into a pervious (i.e. landscaped or gravel/dirt) area. The event water must be fully absorbed prior to leaving site. • If draining to a vegetated area, a filtering device, such as sand or gravel bags shall be used to collect sediment and debris prior to draining to the vegetated area. The collected debris shall be removed and disposed of properly at the end of the event. • A high pressure hose nozzle is encouraged to minimize water use and runoff. An automatic shut off nozzle is required per water district regulations. • A non-toxic, biodegradable soap shall be used.
Pressure Washing / Wet Washing	• Contact the water provider to ensure that all water conservative rules and restrictions are adhered to. • All water or wastewater discharges from any washing activities must be prevented from entering streets, storm drains and gutters and collected for proper disposal. • Storm drain inlets (or low points of the site) must be protected with a temporary berm where washwater is contained and then collected for proper disposal. • If vendors are used for wet washing services, they must contain, collect and properly dispose of washwater (most likely offsite). Include this requirement in your contract. • Small amounts of water can be dumped into a sanitary sewer connection, such as a utility sink or toilet, if available, or could be diverted to a pervious (ie. landscaped or gravel/dirt) area, and allowed to soak into the ground. The water must be fully absorbed into the ground prior to leaving site.
Spill Clean Up & Reporting	• Prior to start of event, organizers & staff should assess the event location, and identify the nearby catch basins, that would receive any trash, debris or spills from the event. • Spills of drinks, food, and any other material on a paved area must be cleaned. Liquid spills can be cleaned by using absorbent materials such as paper towels, mops, or an absorbent material. Food or other solid materials may be swept up & placed in the trash. • Regularly inspect storm drains during the event to assure that pollutants are not entering them. • If pollutants enter a storm drain or if a hazardous material spill occurs, please call Police Dispatch at 949-770-6011 immediately.
Post-Event Clean Up	• All streets, sidewalks, and public areas must be cleaned (sweeping, litter pickup, etc.) and returned to the pre-event condition. • Remove temporary public art (chalk, paint, charcoal, clay, etc). Any wet washing conducted should follow BMPs as noted above. • All storm drain inlet protection devices must be removed.
Contracts & Leases	• Provide adequate language in contracts with vendors to ensure compliance with these rules. • Discuss and distribute information about these water quality requirements during staff (including contractor) training and vendor registration.

Exhibit 5.11

Storm Drain System GIS - Outlet Delineation

HOA Monarch

Legend

- Outlets

Storm Drain Facilities

- Delineated Facilities
- Questions / Cleanup

N

WEST COAST CIVIL

PRINTED: 2/17/2016

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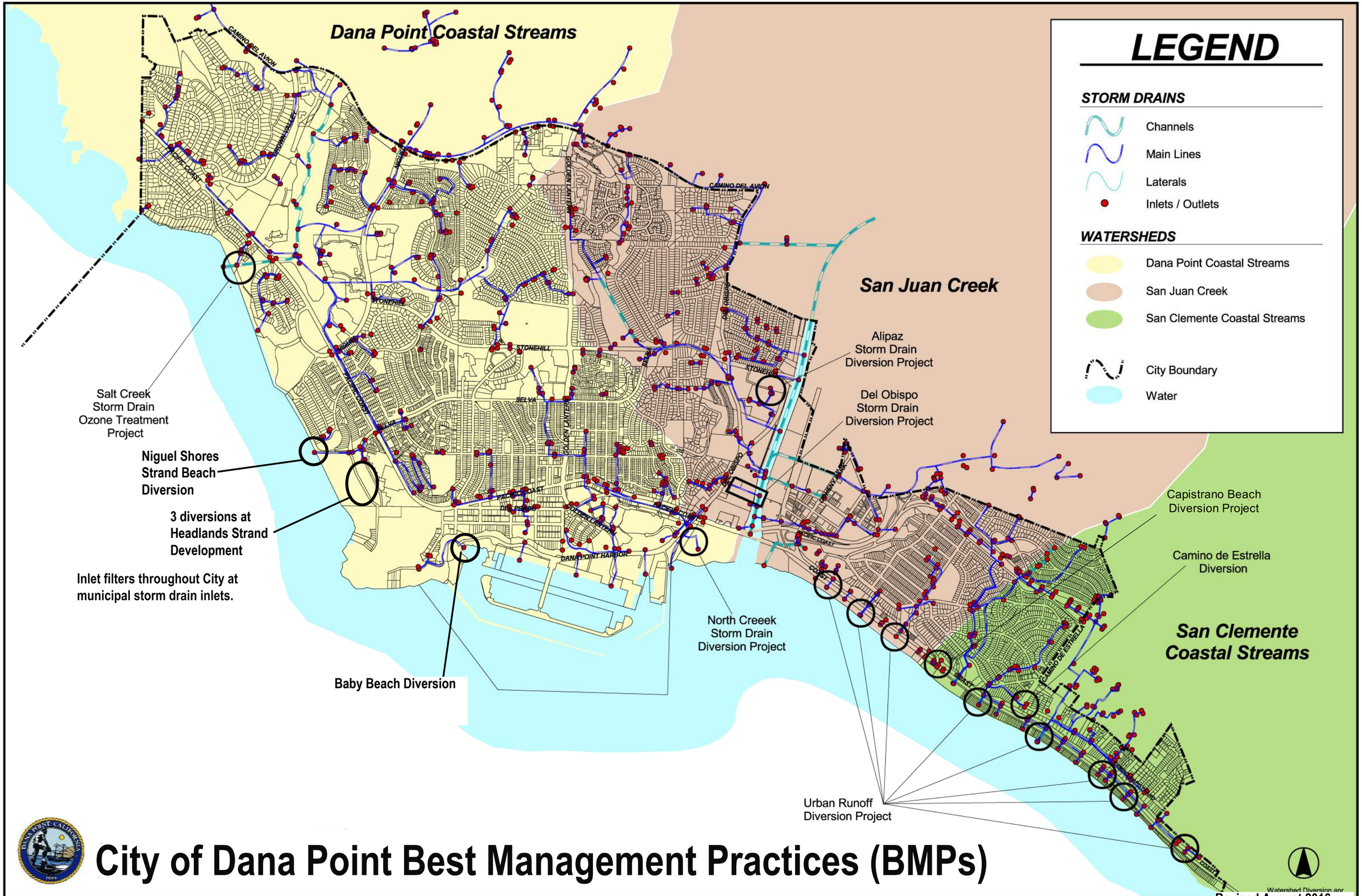


City of Dana Point Best Management Practices (BMPs)

Revised August 2016

INTEGRATED PEST MANAGEMENT (IPM) POLICY & IMPLEMENTATION GUIDELINES

FOR THE

CITY OF DANA POINT

COMMUNITY SERVICES & PARKS DEPARTMENT

Kevin Evans
~~Director of Community~~ Services & Parks

Brian McClure
Parks Manager

May 20, 2010
Date

INTEGRATED PEST MANAGEMENT (IPM) POLICY & IMPLEMENTATION GUIDELINES

FOR THE

CITY OF DANA POINT

*GENERAL IPM POLICY:

For the last 55 years, the trend in pest management has increasing relied on synthetic chemical pesticides. The result has been not only a tremendous increase in the use of many dangerous chemicals, but also an increase in the number of pests that are resistant to the pesticides or new organisms becoming pests. Additionally, some pesticides used for terrestrial pest management have been found in waterways causing problems in the aquatic environment.

Pest control managers are now moving away from their reliance on pesticides alone toward an integrated approach that combines limited pesticide use with more environmentally friendly pest control techniques. This system is known as integrated pest management (IPM), a strategy that focuses on the long-term prevention of pests or their damage through a combination of techniques, including preventative, cultural, mechanical, environmental, biological, and chemical control tactics (**Figure 1**). The techniques are utilized simultaneously to control pest populations in the most effective manner possible.

Developing a comprehensive Integrated Pest Management (IPM) Program and approach allows us to focus on our primary efforts of pollution prevention. By monitoring and preventing pests as well as minimizing heavy pest infestations we can reduce the need for chemicals and/or multiple applications.

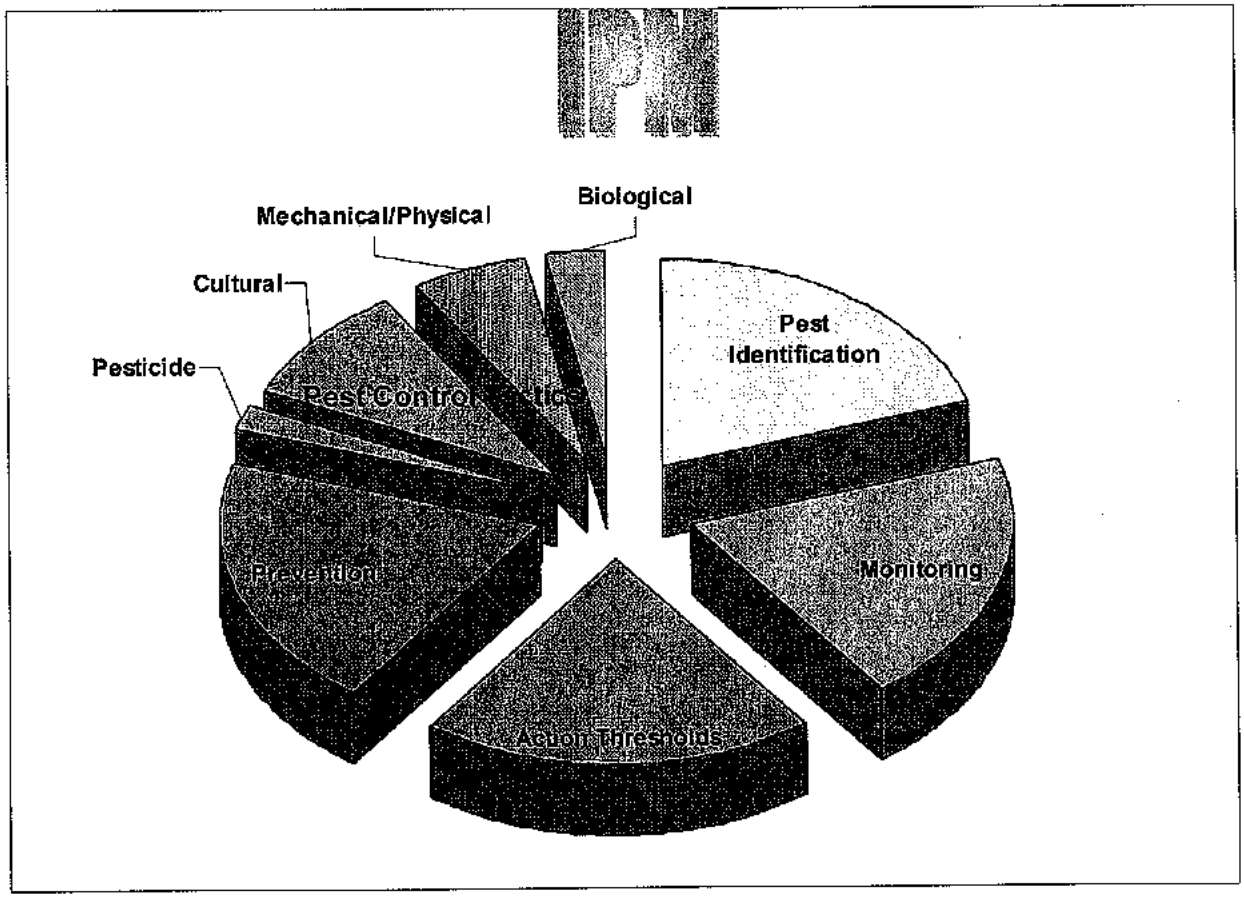
IPM programs utilize monitoring techniques and injury and economic thresholds to determine when to implement control strategies. Treatments are used only used according to established guidelines after monitoring indicates that such treatment is appropriate. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms and the environment.

The use of pesticides is often a measure of last resort. Because of this, the management guidelines for pesticide use are presented in a separate section immediately following the IPM guidelines.

* Original language is contained in Orange County Drainage Area Management Plan, Section 5.5.2 Integrated Pest Management adopted in 2003.

Figure 1

Components of an Integrated Pest Management Program



Scope of IPM Policy and Implementation Plan

IPM practices are encouraged over the sole use of pesticides as the primary means of pest management (**Table 1**). As a part of the Municipal Activities Program Manual, the public agencies and their contractors should evaluate the non-chemical components of IPM before intensive use of pesticides.

The goal of IPM is not to eliminate all pests, but to keep their populations at tolerable levels. Pesticides may be part of an IPM program, but they should only be used after the pests exceed established thresholds and only applied in the affected area (in the case of disease prevention, some modifications may be allowed). In general, all pest control strategies should be those that are least disruptive to biological control

organisms (natural enemies), least hazardous to humans and the environment (including non-target organisms), and have the best likelihood of long-term effectiveness.

Table 1. Advantages and Disadvantages of a Pesticide-Based Program versus an IPM-Based Pest Control Program

Pesticide Based Pest Control		**IPM Based Pest Control**	
Advantages	**Disadvantages**	**Advantages**	**Disadvantages**
Quick suppression of pests	Not long-term	Long-term control	It may take longer to see results
	Pest control is reactive	Can be proactive in pest control actions	Must establish thresholds
	Loss of natural controls. Often get outbreaks of other pests	Reduces disruption of natural enemies	
		Pesticides can be used (only used as last resort).	Must have knowledge of pesticides and their effects on other organisms.
Labor is only for spraying	Extra work in cleanup	Staff becomes more knowledgeable of pests and injury symptoms	Labor is required for monitoring and regular scouting Training is required to identify pests and natural enemies.
Not much preparation or follow-up needed	Need a PCA recommendation	Pest management is more organized	Must maintain a record-keeping system.

	Pesticide safety issues for applicators, public, animals	Less exposure to pesticides
	More pesticides in environment	Safer to the environment
	Contamination of water bodies from runoff	Reduces contamination from runoff

Pesticides should not be applied until pests are approaching damaging levels. Because this requires early detection of the pests, monitoring on a regular basis is extremely important and should also be used to determine if natural enemies are present and adequately controlling the pest. If possible, a person should be trained and assigned to scout the sites on a regular basis.

Components of an IPM Program

An IPM program is a long-term, multi-faceted system to manage pests (**Figure 1**). Use of pesticides is a short-term solution to pest problems and should be used only when the other components fail to maintain the pests or their damage below an acceptable level. Successful IPM practitioners are knowledgeable about the biology of the plants and pests and successful IPM programs primarily use combinations of cultural practices as well as a combination of physical, mechanical and biological controls.

Pest Identification

It is important to learn to identify all stages of common pests at each site. For example, if you can identify weed seedlings, you can control them before they become larger and more difficult to control and before they flower, disseminating seeds throughout the site. It is also important to be sure that a pest is actually causing the problem. Often damage such as wilting is attributed to root disease but may actually be caused by under watering or wind damage.

Prevention

Good pest prevention practices are critical to any IPM program, and can be very effective in reducing pest incidence. Numerous practices can be used to prevent pest incidence and reduce pest population buildup such as the use of resistant varieties, good sanitary practices and proper plant culture. Examples of prevention include choosing an appropriate location for planting, making sure the root system is able to grow adequately and selecting plants that are compatible with the site's environment.

Monitoring

The basis of IPM is the development and use of a regular monitoring or scouting program. Monitoring involves examining plants and surrounding areas for pests, examining tools such as sticky traps for insect pests and quantitatively or qualitatively measuring the pest population size or injury. This information can be used to determine if pest populations are increasing, decreasing, or staying the same and to determine when to use a control tactic. Weather and other environmental conditions may also play

a factor in whether a pest outbreak may occur so it is important to monitor temperature and soil moisture as well.

It is important to use a systematic approach when monitoring, for example you should examine leaves of a similar age each time you check for pests, rather than looking at the older leaves on some plants and younger ones on others. Randomly looking at a plant and its leaves does not allow you to track changes in pest population or damage over time.

It is important to establish and maintain a record-keeping system to evaluate and improve your IPM program. Records should include information such as date of examination, pests found, size and extent of the infestation, location of the infestation, control options utilized, effectiveness of the control options, labor and material costs.

Injury Levels and Action Thresholds

In order to have a way to determine when a control measure should be taken, injury levels and action thresholds must be set for each pest. An injury level is the level of unacceptable damage. For example, the injury level for a leaf-feeding beetle may be set at 30% of the leaves being damaged. Action thresholds are the set of conditions required to trigger a control action. An example of this would be finding an average of 5 or more beetles on 10 shrubs in a location. Action thresholds are set from previous experience or published recommendations and based on expected injury levels. Injury levels are often set by the public's comments.

Pest Control Tactics

Integrated pest management programs use a variety of pest control tactics in a compatible manner that minimizes adverse effects to the environment. A combination of several control tactics is usually more effective in minimizing pest damage than any single control method. The type of control that an agency selects will likely vary on a case-by-case basis due to the varying site conditions.

The primary pest control tactics to choose from include:

- Cultural
- Mechanical/Physical
- Biological

- Pesticide

Cultural Controls

Cultural controls are modifications of normal plant care activities that reduce or prevent pests. In addition to those methods used in the pest preventions, other cultural control methods include adjusting the frequency and amount of irrigation, fertilization, and mowing height. For example, spider mite infestations are worse on water-stressed plants, over-fertilization may cause succulent growth which then encourages aphids, too low of a mowing height may thin turf and allow weeds to become established.

Mechanical/Physical Controls

Mechanical control tactics involve the use of manual labor and machinery to reduce or eliminate pest problems using methods such as handpicking, physical barriers, or machinery to reduce pest abundance indirectly. Examples include hand-pulling or hoeing and applying mulch to control weeds, using trap boards for snails and slugs, and use of traps for gophers.

The use of physical manipulations that indirectly control or prevent pests by altering temperature, light, and humidity can be effective in controlling pests. Although in outdoor situations these tactics are difficult to use for most pests, they can be effective in controlling birds and mammals if their habitat can be modified such that they do not choose to live or roost in the area. Examples include removing garbage in a timely manner and using netting or wire to prevent bird from roosting.

Biological Controls

Biological control practices use living organisms to reduce pest populations. These organisms are often also referred to as beneficials, natural enemies or biocontrols. They act to keep pest populations low enough to prevent significant economic damage. Biocontrols include pathogens, parasites, predators, competitive species, and antagonistic organisms. Beneficial organisms can occur naturally or can be purchased and released.

The most common organisms used for biological control in landscapes are predators, parasites, pathogens and herbivores.

- Predators are organisms that eat their prey (e.g. Ladybugs).

- Parasites spend part or all of their life cycle associated with their host. Common parasites lay their eggs in or on their host and then the eggs hatch, the larvae feed on the host, killing it (e.g. Tiny stingless wasps for aphids and whiteflies).

- Pathogens are microscopic organisms, such as bacteria, viruses, and fungi that cause diseases in pest insects, mites, nematodes, or weeds (e.g. *Bacillus thuringiensis* or BT).

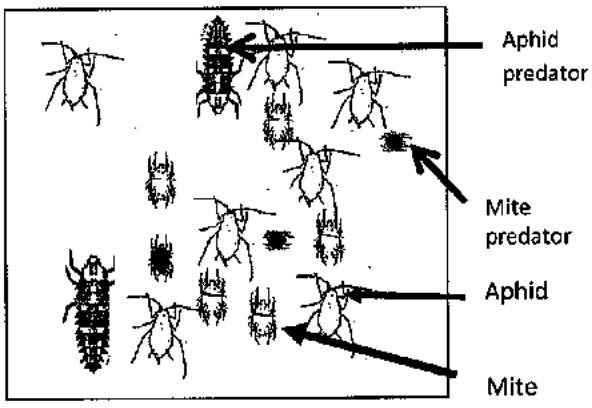
- Herbivores are insects or animals that feed on plants. These are effective for weed control. Biocontrols for weeds eat seeds, leaves, or tunnel into plant stems (e.g. goats and some seed and stem borers).

In order to conserve naturally occurring beneficials, broad-spectrum pesticides should not be used since the use of these types of pesticides may result in secondary pest outbreak due to the mortality of natural enemies that may be keeping other pests under control (**Figure 2**).

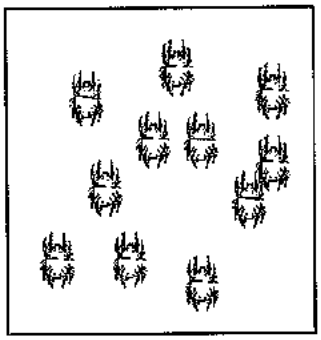
Figure 2

Example of Secondary Pest Outbreak
Caused By Use of a Broad Spectrum Insecticide

A. Aphids and mites controlled by predators



B. After a broad spectrum spray for aphids, predators for mites and aphids are also killed, resulting in an outbreak of mites.



Pesticide Controls

Any substance used for defoliating plants, regulating plant growth or preventing, destroying, repelling or mitigating any pest, is a pesticide. Insecticides, miticides, herbicides, fungicides, rodenticides and molluscides are all pesticides. Anything with an EPA or DPR registration number on the label is a non-exempt pesticide.

Pesticides should only be used when other methods fail to provide adequate control of pests and just before pest populations cause unacceptable damage. The overuse of pesticides can cause beneficial organisms to be killed and pest resistance to develop. When pesticides must be used, considerations should be made for how to use them most successfully. Avoid pesticides that are broad-spectrum and relatively persistent since these are the ones that can cause the most environmental damage and increase the likelihood of pesticide resistance. Always choose the most specific but least toxic to non-target organisms method.

In addition, considerations should be given to the proximity to water bodies, irrigation schedules, weather (rain or wind), etc. that are secondary factors that may result in the pesticide being moved off-site into the environment. Consideration should be made of the temporary loss of use of an area (application in a park may result in the area being sectioned off)

IMPLEMENTION GUIDELINES:

Enter Designated IPM Coordinator or IPM Contact Information in Box Below:

Brian McClure

City of Dana Point

949-248-3583

Personnel responsible for the care and maintenance of facilities under the above-mentioned jurisdiction agree to implement a suite of basic integrated pest management procedures selected from the following five main components of an IPM program:

I) Prevention

II) Pest and Symptom Identification

III) Monitoring for Pests and Problems

IV) Action Thresholds and Guidelines

V) Selection of Appropriate Management Methods (Control Tactics)

The procedures seek to increase the long-term prevention and suppression of pest problems (insects, weeds, diseases, and vertebrates) with the minimum impact on human health, the environment, and non-target organisms. Emphasis is placed on improving cultural practices to prevent problems and utilizing alternative control measures instead of broad spectrum pesticides.

Information on the latest IPM information including management of new pests in the landscape is obtained from local UC Cooperative Extension Advisors, UC IPM Regional Advisor, or the Statewide UC IPM Web Site at www.ipm.ucdavis.edu.

I. PREVENTION

A. Landscape Design Procedures *(a minimum of three must be selected)*

☐ Drainage, soil characteristics, water quality and availability are considered during plant selection.

☐ Sun exposure, heat, and high temperature conditions are considered during plant selection.

x Adequate space is allowed for root growth, especially trees.

x Nursery stock is inspected and rejected if not healthy (injuries, diseased, circling roots/potbound, poor staking and/or pruning).

☐ Pest resistant species and cultivars are selected.

x Plants with similar growth characteristics and irrigation requirements are grouped together.

☐ Landscape design matches available irrigation technology to avoid excess water use and to minimize surface runoff.

B. Site Preparation and Planting Procedures *(a minimum of three must be selected)*

x Assess soil drainage properties and improve compacted soils prior to planting.

☐ Conduct a soil analysis to determine chemical and physical properties of the existing soil and then add appropriate amendments such as organic matter.

x Ensure irrigation is installed as designed in order to avoid poor uniformity once plants are in place.

☐ Follow proper planting procedures for particular plant species to avoid planting too deeply or too shallow.

x Nursery tree stakes are removed at planting and replaced with staking that allows trunk to flex; removing these stakes after 1 to 1.5 years.

☐ Utilize a soil probe or other soil moisture measurement device to monitor soil moisture levels in existing root ball and surrounding soil during establishment period.

C. Water Management *(a minimum of three must be selected)*

x Plants are examined weekly for symptoms of water stress and to assist in determining irrigation scheduling.

☐ Monitor soil moisture with a soil probe or soil moisture sensors to assist in scheduling irrigation.

☐ Utilize evapotranspiration (ET) data or 'smart' clock technology to schedule irrigation.

x Cyclic irrigation (short-multiple run times) is employed to minimize surface runoff.

☐ Utilize low precipitation sprinklers or low-volume systems to reduce surface runoff.

x Systems are inspected monthly to check for leaks, broken pipes, and clogged or broken sprinkler heads.

☐ Adjust sprinklers to avoid application of water directly to the trunk of trees (can promote disease) or on to concrete surfaces where it can enter storm drains.

☐ Establish a hotline or email or other dedicated method where citizens can report leaks and broken sprinkler heads

D. Fertilizing Procedures *(a minimum of three must be selected)*

x Fertilize only when plants are actively growing to avoid nutrient losses below the root zone.

☐ Fertilizer is not applied within 48 hours of a rain event to avoid losses below the root zone and in surface runoff.

☐ Soil analyses are conducted in order to determine existing nutrient levels in the soil prior to fertilizing.

☐ Turf grass fertilizer maintenance schedules are based on UC recommendations found online at UC Guide for Healthy Lawns.

http://www.ipm.ucdavis.edu/TOOLS/TURF/MAINTAIN/fertilize.html

☐ Sports turf grass fertilizer maintenance guidelines are based on UC recommendations found in **Establishing and Maintaining the Natural Turf Athletic Field (UCR ANR Publication Number: 21617).**

x Overfertilization, especially of trees and shrubs, is avoided to ensure plant growth is not excessively succulent making it more susceptible to pest infestations.

x Off-target fertilizer applications or spills are cleaned up immediately by sweeping up and applying to landscape or turf or replacing in spreader or bag to ensure material does not enter storm drains.

E. Pruning Procedures *(a minimum of three must be selected)*

x Damaged or diseased wood is regularly pruned from landscape plants.

x Trees are pruned according to standards set forth by a professional tree care organization such as the International Society of Arboriculture.

☐ Replace plants too large for a space instead of pruning them severely.

x Unnecessary pruning is avoided as wounds are entry sites for decay and disease organisms.

☐ The age and species of the plant is taken into account when determining the time of year to prune. For example, eucalyptus should be pruned in December and January when long-horned beetles are not active.

☐ Tree height reduction is discouraged. When deemed necessary by a licensed arborist, the crown reduction method approved by a professional tree care organization is utilized. Topping is never done to reduce tree size. NO TOPPING OR 'HAT RACKING' IS PERMITTED.

II. PEST AND SYMPTOM IDENTIFICATION

A. Insects, Mites, and Snails and Slugs *(a minimum of three must be selected)*

x Field personnel are trained to recognize basic pests found in the landscape in the following groups: insects, mites, and mollusks.

x A licensed Pest Control Adviser is on staff or hired to properly identify a pest and the symptoms caused by the pest.

☐ Field personnel are trained to utilize disease life cycles to apply treatments when the organism can be controlled most effectively.

☐ Field personnel are trained to distinguish between beneficial insects and actual pests found in the landscape (e.g. parasitizing wasps).

☐ Unknown samples are submitted to the Orange County Agricultural Commissioner for identification by the county entomologist or plant pathologist.

x Abiotic or nonliving factors (wind, sunburn, air pollution, etc...) are considered as possible causes of observed symptoms as well as biotic (living) factors.

B. Weeds *(a minimum of one must be selected)*

x Field personnel are trained to identify common weeds in the landscape.

☐ Field personnel are trained to utilize weed life cycles to properly control weeds such as controlling crabgrass utilizing a pre-emergent herbicide applied in mid-January.

☐ A licensed Pest Control Adviser is on staff or contracted to properly identify the pest.

C. Diseases *(a minimum of one must be selected)*

x Field personnel are trained to recognize common diseases or their signs/symptoms in the landscape.

☐ Field personnel are trained to utilize disease life cycles to apply treatments when the organism can be controlled most effectively.

☐ Field personnel are trained to recognize the difference between biotic and abiotic problems.

☐ Field personnel are trained to understand how common diseases are spread throughout the landscape.

☐ Disease signs and symptoms are sampled and submitted to the Orange County Agricultural Commissioner for identification by the county plant pathologist.

☐ A licensed Pest Control Adviser is on staff or contracted to properly identify the pest.

☐ Photographs of disease signs and symptoms are taken and compared to reference guides such as UC IPM's *Pests of Landscape Trees and Shrubs*.

D. Vertebrates *(a minimum of one must be selected)*

x Field personnel are trained to recognize vertebrate pests and the damage they cause in the landscape.

☐ Field personnel are trained to utilize vertebrate behavior to properly control the pest most effectively.

☐ At least one field staff member is trained in vertebrate baiting and trapping.

☐ A licensed Pest Control Adviser is on staff or contracted to properly identify vertebrate pest.

III. MONITORING FOR PESTS AND PROBLEMS

A. Insect/Mollusk Monitoring Procedures *(a minimum of three must be selected)*

☐ Visually inspect plants for insects, mites, snail and slug damage at least monthly; recording results utilizing a method conducive to tracking changes and easy recall of data.

☐ Yellow sticky traps are utilized to assess populations of insects.

x Insects are dislodged from plants by shaking over a collection surface usually consisting of a clipboard with a white sheet of paper.

☐ If available for a particular insect, phermone-baited traps are utilized.

x Soil-dwelling turf insects are brought to the surface for monitoring by flushing a specific area of soil (i.e. 2' x 2' grid) with plain water or a soapy water mixture.

x The amount of honeydew (aphids) and frass (caterpillars) present is utilized as an indicator of population levels.

B. Weed Monitoring Procedures *(a minimum of two must be selected)*

x Landscapes are inspected at least 4 times a year (early winter, early spring, summer and early fall) for weeds in order to determine if and when a weed problem exists.

x Utilize site surveys to record the location, date, and severity of weed problem; recording results utilizing a method conducive to tracking changes and easy recall of data.

☐ Count and record the number of weeds encountered at periodic intervals (e.g. every 1 to 2 feet) along a straight line transecting a landscapes area or within a selected area, for example 4 sq. ft. samples done in random places in a bed or turf area.

C. Disease Monitoring Procedures *(a minimum of two must be selected)*

x Landscapes are regularly checked for conditions, such as overwatering and injuries, which promote disease.

x Landscapes are checked monthly, at a minimum, for disease symptoms and signs. Disease prone plants are checked more frequently.

☐ Records are kept utilizing a method conducive to tracking changes and easy recall of data of each landscape inspection noting, date when disease signs and symptoms were first noticed and the current environmental conditions and soil moisture levels.

D. Vertebrate Monitoring Procedures *(a minimum of two must be selected)*

x Landscapes are regularly inspected for vertebrate presence either by damage caused by animal, actual animal sightings, and/or droppings.

☐ Records are kept of the absence or presence of actual vertebrates, the damage caused, and/or the presence or absence of droppings.

x Maps are created and updated at least twice a year, recording area of high vertebrate damage or signs (such as gopher mounds).

IV. ACTION THRESHOLDS AND GUIDELINES

A. Insect/Mollusk Thresholds and Guidelines *(a minimum of one must be selected)*

x Insect tolerance levels are established based on the public's acceptance of damage to the landscape or a certain level of nuisance pests (i.e. ants), the actual plant species in the landscape, and long-term monitoring and knowledge of pests causing the damage.

☐ Thresholds are based on levels were reasonable control of the pest can be achieved with minimum impact on the environment.

☐ Insect monitoring records are utilized to establish threshold levels for the implementation of control strategies. For example, the threshold for the presence of aphids on a rose garden at City Hall is low, while in a native shrub border it might be considerably higher.

B. Weed Thresholds and Guidelines *(a minimum of one must be selected)*

x Weed tolerance levels are established based on public safety or the public's acceptance and the resources available to manage the landscape at that level.

☐ Weed monitoring records are utilized to rank the percentage of the landscape area infested (none, light, moderate, heavy, or very heavy) with weeds.

☐ Public areas are ranked according to high, medium, or low level of weed control and management conducted according to levels set for each rank (see Appendix A)

C. Disease Thresholds and Guidelines *(a minimum of one must be selected)*

x Disease tolerance levels are established based on the public's acceptance and the resources available to manage the landscape at the level required.

☐ Disease monitoring records are utilized to establish threshold levels for the implementation of control strategies. For example, the threshold for the presence of powdery mildew on roses at City Hall is much lower than the threshold for its presence on Euonymus in a parking lot at a city sports park.

D. Vertebrate Thresholds and Guidelines *(a minimum of one must be selected)*

x Vertebrate tolerance levels are established based on public safety, the public's acceptance and the resources available to manage the landscape at the level required.

☐ Vertebrate monitoring records are utilized to establish threshold levels for the implementation of control strategies. For example, the threshold for the presence of gopher mounds in a sport field is zero, while in a native shrub border it might be two before a trapping strategy is implemented.

V. SELECTION OF APPROPRIATE MANAGEMENT METHODS

A. Insect/Mollusk Management Methods

Cultural/Mechanical/Physical Control Methods *(a minimum of three methods must be selected)*

☐ Sticky barriers are applied to trunks of trees and large shrubs to prevent ants and other wingless invertebrates from plant canopies.

x Small insect infestations are removed by pruning infested plant parts.

☐ Copper bands are installed around base of trees or planting areas where snail and slug infestations are prevalent.

x Plant canopies are thinned to increase light penetration to exposure certain soft-bodied insects (soft-scale) as well as snails and slugs to heat.

x Strong streams of water are used to dislodge insects such as aphids and whiteflies, from leaves.

☐ Avoid use of plants that snails and slugs use for shelter.

☐ Avoid irrigating between 5pm and 5am when moisture remains on plant material for several hours.

Biological Control Methods (*a minimum of one method must be selected)*

☐ Persistent broad-spectrum pesticides are avoided, especially if biological control of an insect has been established by UC researchers. Examples include parasitoid wasps controlling Eugenia Psyllids, Giant Whitefly, and Ash Whitefly.

x Natural predators (beneficial insects) are augmented with purchases of additional predators from commercially available resources.

Pesticide Control Methods (*a minimum of five methods from must be selected)*

x The most selective, rather than broad-spectrum, pesticide is used

☐ If available for controlling a particular insect, biological and botanical pesticides are selected

x Insecticidal soaps are utilized to control infestations of soft-bodied insects such as aphids, thrips, and immature scales.

x Horticultural oils (neem oil and narrow-range refined oils) are utilized to control infestations of soft-bodied immature and adult insects such as aphids, scales, and whiteflies.

☐ Pesticides are only utilized when the potential for impacts to the environment, especially water quality, are minimized.

☐ Equipment is calibrated prior to the application of the insecticide to avoid excess material being applied to the landscape environment.

x Applicators are trained to not apply pesticides to hard surfaces and to not allow any pesticide to enter the storm drain system

x Spot treatments are utilized rather than broadcast methods

☐ Insecticide/fertilizer combinations are only used if appropriate timing for BOTH the insecticide application and the fertilizer application.

B. Weed Management Methods

Cultural, Mechanical, and Physical Control Methods *(a minimum of three methods must be selected)*

x Timers are set to avoid overwatering as weeds establish in areas where soil moisture is excessive.

x Drainage is managed to avoid wet areas.

x Weeds are removed from a site prior to planting.

☐ Mower height is adjusted to turf species and time of year.

☐ Mower is washed after mowing a weedy site.

☐ Hand-pulling, mowing, trimmers/brushcutters, flaming, hoeing, and rototilling around landscape plants are the main methods utilized to control annual weeds and young perennial weeds.

☐ Soil solarization is utilized to control some annual and perennial weed species.

☐ Bare soil areas are covered with a thick layer of mulch to suppress weeds and conserve soil moisture.

☐ Soil, mulch, and plant material is weed-free before it is introduced into the landscape.

Pesticide Control Methods *(a minimum of three methods must be selected)*

x Spot treatments are utilized rather than broadcast methods.

☐ Herbicide/fertilizer combinations are only used if appropriate timing for BOTH the herbicide application and the fertilizer application.

☐ Herbicides are utilized according to established thresholds (see Appendix A).

x Organically acceptable herbicides (shown to be effective through science-based research) are used where appropriate.

☐ Herbicides are applied to the stage of weed growth most susceptible to the chemical.

x Equipment is calibrated prior to the application of the herbicide to avoid excess material being applied to the landscape environment.

C. Disease Management Methods

Cultural, Mechanical, and Physical Control Methods *(a minimum of three methods must be selected)*

x Prune out and dispose of localized areas of diseased plants.

☐ Pathogen-infested plant parts are removed from the soil surface area to reduce certain pathogens (e.g. Camellia Petal Blight).

x Pruning tools are sterilized (e.g. a diluted bleach solution) between plants to prevent the spread of pathogen to other plants.

☐ Proper irrigation and fertilization are maintained to prevent plant stress, water-logging, and subsequent susceptibility to disease.

☐ Soil solarization is utilized to control soil pathogens in annual beds where it is most effective.

☐ Mulch is kept at least 6" from base of plants to avoid excessive moisture around crown possibly resulting in crown rots and is no deeper than 4"

x Replace disease-prone plants with non-susceptible species.

Pesticide Control Methods *(a minimum of two methods must be selected)*

☐ Preventative fungicides and bactericides are only used where diseases can be predicted from environmental conditions and applied prior to infection or the appearance of symptoms.

x Synthetic fungicides are used sparingly in the landscape and only in high visibility areas in order to minimize development of resistance.

x Organic fungicides and bactericides are utilized in combination with cultural, mechanical, and physical control methods in order to improve their effectiveness.

☐ Copper-based fungicides are only utilized in situations where its entry into surface runoff and storm drains is virtually impossible and after consultation with PCA and IPM coordinator.

☐ Mycopesticides, commercially available beneficial microorganisms, are used where appropriate.

☐ Fungicides classes are rotated to avoid resistance.

D. Vertebrate Management Methods

Cultural and Physical Control Methods *(a minimum of two methods must be selected)*

☐ Groundcovers are maintained such that they do not harbor rats.

☐ Shrubs pruned at least 1 foot from the ground (rats).

x Sources of drinking water removed (leaky faucets, puddles).

☐ Trash cans have lids and are emptied daily (rats).

☐ Screens or other barriers installed under structures that have a space between soil and floor (rabbits).

☐ Habitat modification, based on pest biology is used to reduce shelter.

x Trapping is used for gophers when safe and practical.

☐ Kill traps used for ground squirrels and rabbits, are checked daily, and in places not accessible by children or non-target animals.

☐ Gas cartridges are used for ground squirrels according to UC recommendations.

Pesticide Control Methods *(a minimum of two methods must be selected)*

☐ Anti-coagulant baits are used and applied according to label and UC recommendations.

x Bait is applied in a manner that non-target animals do not access to it.

x Restricted use rodenticides, aluminum or zinc phosphide, are used only after applicator has been trained for that product or only by a wildlife management contractor.

VI. GENERAL PESTICIDE MANAGEMENT PRACTICES

(all practices listed below must be selected)

x Restricted use pesticides are only used when no other alternatives are practical.

x If pesticides are necessary, CAUTION-labeled pesticides are considered before more toxic alternatives.

x Only small quantities of pesticides are purchased eliminating the need for stockpiling.

x MSDSs are regularly updated to reflect new pesticides or label changes to pesticides in storage.

Appendix A

Ranking public areas for weeds (or other pest) management:

Areas ranked as **HIGH** may include areas that the public sees and expects to be well-maintained. Examples are entrances to public buildings such as city hall and libraries.

These areas are allowed to use pesticides based on established thresholds.

Areas ranked as **MEDIUM** may include areas the public sees but does not expect a high level of maintenance. Examples are landscaped areas away from the entrance, recreational and picnic areas. These areas can tolerate a higher lever of weeds.

These areas are allowed to use pesticides but the threshold is much higher and pesticides are used infrequently and only after consultation with IPM coordinator.

Areas ranked as **LOW** may include areas the public rarely sees or does not expect a high level of maintenance. Examples are medians, landscaped areas in parking lots, wildlands. These areas can tolerate a higher lever of weeds.

These areas are not allowed to use pesticides except in extreme cases and only after consultation with IPM coordinator.

Exhibit 6.1

CITY OF DANA POINT EDUCATION & OUTREACH STRATEGIES TO ADDRESS HIGH PRIORITY WATER QUALITY CONDITIONS (HPWQC)

Target Audience	Outreach Opportunities	High Priority Water Quality Conditions (HPWQC) Targeted	Focused Messages & Topics	Pollutants Addressed	Typical Frequency
General Public, Residents, Visitors, Children	• Special Events, including Annual Coastal Clean Up events (coordinated with Doheny State Beach) • H_2OC • Waste Hauler Quarterly Newsletter • Storm drain stencils • City Environmental webpage • Social Media • City's Ocean Water Quality Subcommittee	• Pathogen Health Risk • Unnatural Water Balance	• Prevention of irrigation runoff • Proper pet waste management • Proper use of fertilizer and pesticides • Outdoor water use efficiency & conservation • Landscaping conversion benefits • Proper maintenance of sanitary sewer private lateral (in conjunction with sewer agencies) • General stormwater & watershed awareness • Proper waste disposal, including HHW	• Bacteria • Non-stormwater discharges • Toxicity • Nutrients • Pesticides • Trash	• Special Events: 2-3/year • H_2OC: ongoing • Storm drain stencils: ongoing • City Environmental webpage: ongoing • Social Media: 1/month • Ocean Water Quality Subcommittee – public meetings, generally 7+ per year

Exhibit 6.1

CITY OF DANA POINT EDUCATION & OUTREACH STRATEGIES TO ADDRESS HIGH PRIORITY WATER QUALITY CONDITIONS (HPWQC)

Target Audience	Outreach Opportunities	High Priority Water Quality Conditions (HPWQC) Targeted	Focused Messages & Topics	Pollutants Addressed	Typical Frequency
Business Community	• During inspections • During various interactions • Mailings to specific audiences • City's website • Outreach to and via Property Managers	• Pathogen Health Risk • Unnatural Water Balance	• Business activity specific BMPs • Prevention of non-storm water discharges • Prevention of irrigation runoff • Proper maintenance of sanitary sewer private lateral (in conjunction with sewer agencies)	• Bacteria • Non-stormwater discharges • Nutrients • Toxicity • Pesticides • Trash	• During inspections: per inspection frequency • During various interactions: ongoing • Mailings to specific audiences: as needed • City's website: ongoing • Outreach to and via Property Managers: as needed
Development Community	• Pre-Application/Plan Check process through project closing • Preconstruction meetings • City website	• Pathogen Health Risk • Unnatural Water Balance • Channel Erosion & Associated Geomorphic Impacts	• Prevention of non-stormwater discharges, including irrigation runoff • Construction BMPs • LID/Biofiltration BMPs & long-term maintenance • Proper use of fertilizer and pesticides	• Turbidity • TSS • Trash • Bacteria • Non-stormwater discharges • IBI	• Pre-Application/Plan Check process through project closing: ongoing • Preconstruction meetings: once per project • City website: ongoing

Exhibit 6.1

CITY OF DANA POINT EDUCATION & OUTREACH STRATEGIES TO ADDRESS HIGH PRIORITY WATER QUALITY CONDITIONS (HPWQC)

Target Audience	Outreach Opportunities	High Priority Water Quality Conditions (HPWQC) Targeted	Focused Messages & Topics	Pollutants Addressed	Typical Frequency
Construction Community	• Fact sheets • Preconstruction meetings • Inspections • Permit process • Pre-rain reminders/inspections • Contract/permit language • City website	• Pathogen Health Risk • Unnatural Water Balance	• Construction BMPs • Prevention of non-stormwater discharges	• Turbidity • TSS • Non-stormwater discharges • Trash • IBI	• Fact sheets: ongoing • Preconstruction meetings: once per project • Inspections: per inspection frequency • Permit process: ongoing • Pre-rain reminders/inspections: as needed/feasible • Contract/permit language: ongoing • City website: ongoing

Exhibit 7.1

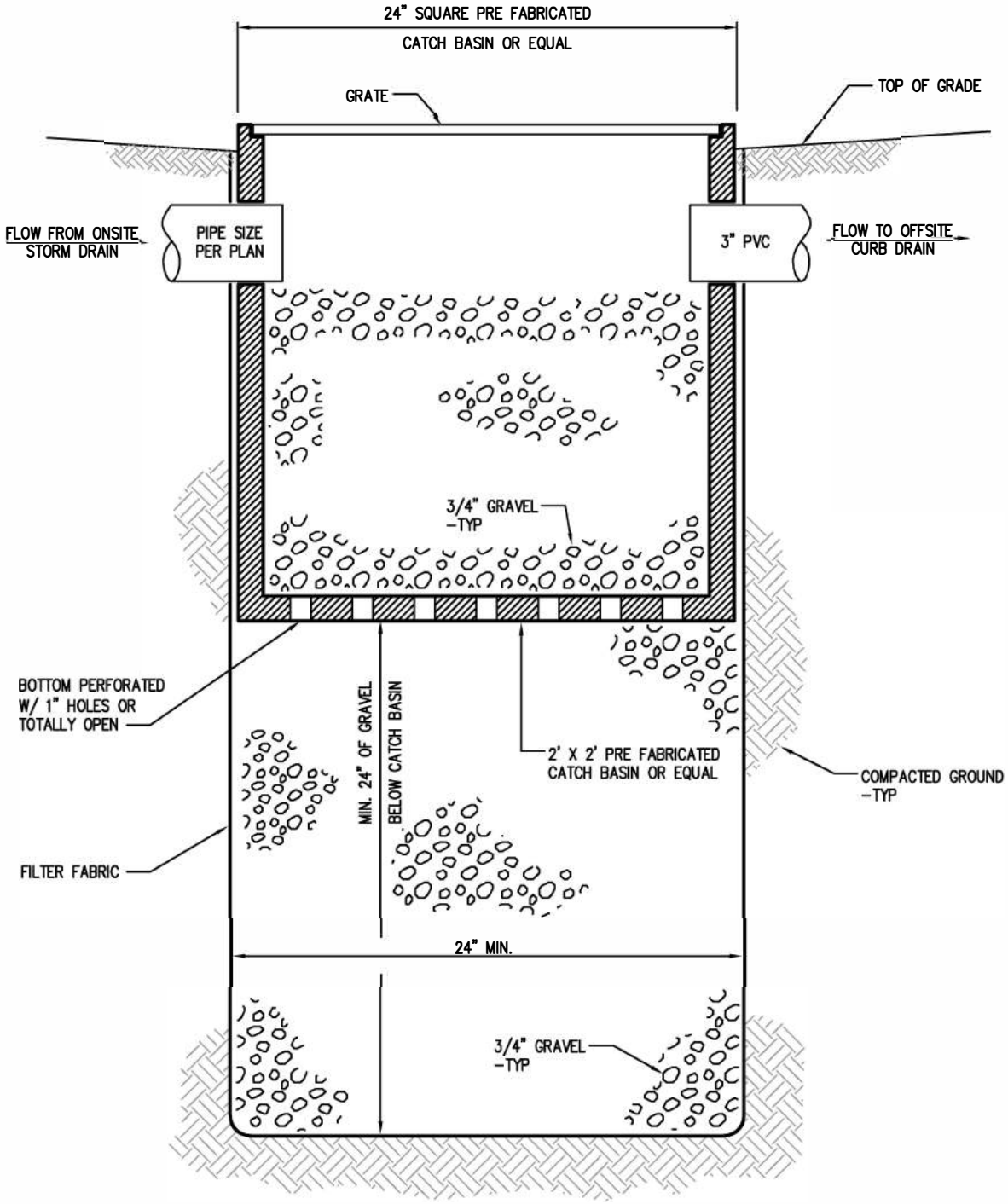
CITY OF DANA POINT

PUBLIC WORKS, WATER QUALITY
33282 Golden Lantern, Suite 212
Dana Point, Ca 92629
949.248.3554 · www.danapoint.org

LOW IMPACT DEVELOPMENT & SOURCE CONTROL BMP FOR ALL REDEVELOPMENT/DEVELOPMENT PROJECTS

where applicable and feasible

- Conserve natural areas, including existing trees, other vegetation and soils.
- Construct streets, sidewalks and parking lot aisles to the minimum widths necessary, provided that public safety is not compromised.
- Minimize the impervious footprint of the project.
- Minimize soil compaction in landscaped areas.
- Minimize disturbances in natural drainages, for example, natural swales, topographic depressions, etc.
- Disconnect impervious surfaces through distributed pervious areas by draining rooftops into adjacent landscaping, using vegetated swales in lieu of underground piping, incorporating sheet flow over vegetated areas, incorporating low flow infiltration, etc.;
- Create buffer zones for natural water bodies, where feasible and if buffer zones are not feasible, implement other buffer, such as trees, access restrictions, etc.;
- Install the Dry Weather Flow Diversion Basin, S-14. Refer to attached standard detail.
- Prevent illicit discharges into the MS4, including sprinkler/irrigation runoff.
- Stencil, sign or otherwise mark, with approval from City, the storm drain system with no dumping messages.
- Properly design outdoor material storage areas, outdoor work areas, and trash storage areas.
- Sweep street and parking lots monthly, at a minimum.
- Landscape with native, non-invasive and/or low water species, where feasible.
- Any other BMPs deemed necessary to address any specific issues or concerns, as directed by the Public Works Director.



SECTION
NTS

REVISIONS	CITY OF DANA POINT EXHIBIT	
06/18/12	DRY WEATHER FLOW DIVERSION BASIN	S-14
01 /12/17		SHEET 1 OF 1

DWG Name: I:\ENGINEERING SERVICES\DWGS\Residential Infiltration Plt 052212.dwg Plotted by: dbrady on Nov 28, 2012 - 11:06:08

Exhibit 7.2

CITY OF DANA POINT

PUBLIC WORKS, WATER QUALITY
33282 Golden Lantern, Suite 212, Dana Point, CA 92629
949.248.3554 · www.danapoint.org

WATER QUALITY GREASE MANAGEMENT & EXPANDED POLYSTYRENE (EPS) BAN CERTIFICATION

INSTRUCTIONS FOR COMPLETING THE FORM

Specific requirements to protect water quality are required for all food related businesses. Please review the following requirements as you plan your project to ensure that your new business will be in compliance. Annual inspections are conducted by the City to ensure ongoing compliance.

1. In addition to the City Building Department, all plans for food related facilities shall be submitted to the appropriate sewer district for review and approval. Call appropriate sewer district for specific submittal requirements:
    - South Coast Water District: 949-499-4555
    - Moulton Niguel Water District: 949-831-2500
    - San Juan Capistrano Water:949-443-6363
2. This form must be accurately completed during the permitting process ***prior to issuance of Certificate of Occupancy***. Please note that you must read and understand the requirements prior to construction as **some requirements require building modifications and will need to be reflected on building plans so you must plan for them early in your project.**
3. **Waste Cooking Oil/Yellow Grease/Tallow Management**: No outdoor storage of waste cooking oil is allowed. Clean, efficient, and safe systems, such as Darling DarPro Solutions Cleanstar Oil Management System, B.O.S.S. Space saver system or similar RTI, Inc. Oil Management Systems are encouraged. If those systems are not feasible, a clean, wheeled container that can be stored indoors in a dedicated space (approved by the Orange County Health Care Agency) may be acceptable. Note that you need to plan your method of used kitchen grease management prior to submittal of Building Permits.
4. **Equipment/Mat Washing Areas**: No outdoor washing of kitchen mats or any equipment is allowed outdoors, unless a contained area is designed and constructed to drain to the grease interceptor. For indoor washing, an area must be designated for employees for washing mats/equipment. If an outside vendor is used to wash mats, the vendor contact and contract or service agreement must be provided. The designated wash area must be noted on plans.
5. **Designated Wash Area Signage**: A permanent, durable sign much be clearly posted to designate the area for mat/equipment washing. A photo of the sign, once installed, is required to complete this form. The sign must be shown on plans.
6. **Employee Training**: All new employees much be trained on proper grease handling, cleaning methods and spill prevention and response to prevent stormwater pollution. All employees shall be re-trained on a regular basis.
7. **Roof Top Grease Control** A grease diaper (hydrophobic absorbent pad) must be installed on the rooftop grease exhaust fan(s). The grease diaper must be shown on plans.
8. **Expanded Polystyrene (EPS) also known as Styrofoam™ Food Service Ware Ban**: The City has implemented a “Styrofoam” ban. Please review the attached fact sheet to understand the requirements so that any carry-out containers that you order and use are in compliance.

Please contact Lisa Zawaski with any questions and/or to ensure your plan will be acceptable to meet any of these requirements: lzawaski@danapoint.org, 949-248-3584.

CITY OF DANA POINT

PUBLIC WORKS, WATER QUALITY
33282 Golden Lantern, Suite 212, Dana Point, CA 92629
949.248.3554 · www.danapoint.org

WATER QUALITY GREASE MANAGEMENT & EXPANDED POLYSTYRENE (EPS) BAN CERTIFICATION FORM

Required Prior to Issuance of Certificate of Occupancy

Name of Food Facility: _____ Address: _____

Owner of Food Facility: _____

Phone: _____ Email: _____

Please check appropriate box addressing the following items and submit the signed form to City:

Waste Cooking Oil /Yellow Grease/Tallow Management: The following method will be used to manage used kitchen grease/oil. No storage of grease barrels/dumpsters shall be allowed outdoors.

- ☐ Cleanstar Oil Management System. Indoor / Outdoor
- ☐ RTI, Inc. Oil Management System. Indoor / Outdoor
- ☐ Griffin B.O.S.S. Space Saver System.
- ☐ Clean, wheeled container stored indoors (must comply w/ Orange County Health Care Agency)
- ☐ Other: _____

Equipment/Mat Washing Areas: The following area will be used to clean kitchen mats & equipment. No washwater shall drain to storm drains or street.

- ☐ An indoor mop/utility has been designated for cleaning and is connected to the grease interceptor.
- ☐ An outdoor wash-down area, which is connected to the grease interceptor.
- ☐ No kitchen mats are used and no other washing or hosing will be conducted outdoors.
- ☐ Other: _____

Please check each box certifying the following required items & provide photo of designated wash area sign:

- ☐ **Designated Wash Area Signage**: A sign has been posted to designate the designated wash area for mats or other equipment. A photo of sign in place must be attached to this form.
- ☐ **Employee Training**: All new employees will be trained to learn and implement the proper grease handling & cleaning methods to prevent stormwater pollution. All employees will be re-trained on a regular basis.
- ☐ **Roof Top Grease Control**: A grease diaper (hydrophobic absorbent pad) is installed on the rooftop grease exhaust fan(s). The grease diaper will be regularly inspected and maintained/replaced as necessary to effectively perform design function.
- ☐ **Expanded Polystyrene (EPS) also known as Styrofoam™ Food Service Ware Ban**: I have read and understand the City's regulations on the EPS (Styrofoam™) Food Service Ware Ban (see attached Fact Sheet and/or DPMC 6.46 at www.danapoint.org/municipalcode).

I hereby certify that the above items regarding grease management & cleaning controls, as checked and noted above, have been installed, and will be utilized and maintained in accordance with design and manufacturer's recommendations. I also certify that I have read and understand the City's regulations on EPS Food Service Ware and will comply.

_____ _____

Signature Date

What You Need to Know About the Dana Point Expanded Polystyrene (EPS) Food Service Ware Ban

As a coastal city, Dana Point has a strong interest in protecting the ocean, local beaches, and marine environment, which contribute to the unique quality of life enjoyed by the community. On February 21, 2012, the City Council voted to ban the use of Expanded Polystyrene (EPS) disposable food service ware within Dana Point (DPMC 6.46). The ban on EPS, also known as Styrofoam™, food service ware will help decrease the amount of litter found along our streets, beaches, and ocean waters and will reduce the adverse health impacts to birds and sea life, while improving water quality.

The ban on EPS will help preserve our pristine coastline.

The City of Dana Point has joined nearly 50 other California cities in banning the use of expanded polystyrene single-use food service ware at food businesses within the City. The EPS Ordinance reflects Dana Point's proactive approach to coastal stewardship by implementing policies that maintain our legacy as the most beautiful, desirable, and safest coastal community in which to live, work, visit, play or conduct business.

Frequently Asked Questions

When does the ordinance take effect and who must comply?

The ordinance took effect October 1, 2012 for all food vendors and food service providers as well as all City facilities and operations, City-managed concessions, City-sponsored events, City permitted events and all franchisees, contractors and vendors within the City of Dana Point.

> The EPS ban began on **October 1, 2012**. The ban applies to all food vendors and food service providers in Dana Point.

Why did the City ban non-recyclable plastic & polystyrene?

> EPS is not biodegradable, and remains in the environment indefinitely. EPS is often ingested by wildlife that mistake it for food and perish.

Expanded polystyrene is a non-biodegradable material that tends to break up into very small pieces and disperse widely when littered due to its lightweight nature. This plastic waste causes significant damage to the beach and marine environment. EPS is not biodegradable thus EPS litter remains indefinitely in the environment and can be ingested by marine animals and birds that mistake EPS for pieces of food. While EPS is technically "recyclable" there is, to date, no meaningful recycling of EPS due to high food contamination rates and a very weak market to clean, handle and process the material.

City of Dana Point Public Works & Engineering Services
33282 Golden Lantern, Dana Point CA 92629
(949) 248-3554

What types of containers are banned?

The ordinance refers to expanded polystyrene (EPS or Styrofoam™) and clear and rigid polystyrene, both of which are marked with the symbol #6 on the bottom, that are intended for serving or transporting prepared, ready-to-eat food or beverages. Examples include cups, plates, trays, bowls, and hinged or lidded containers. This ordinance *does not* include single-use disposable straws and utensils.

What types of containers are acceptable to use?

- Aluminum
- Coated or uncoated paper, ideally made with post-consumer recycled content
- Any other plastic besides expanded polystyrene
- Compostable products





Are there exemptions?

Food prepared or packaged outside of the city such as uncooked meat, fish, poultry, or eggs are exempt from the ban. Reusable EPS coolers and ice chests are also exempt.

What are the penalties for non-compliance?

The first violation will result in a written warning that could be followed by fines ranging from $100 to $250 for additional violations.

Where can I find the City's Ordinance and the staff report related to the EPS ban?

Please visit www.danapoint.org/recycle to view both of these documents.

Where do I find acceptable service containers?

Contact or visit your sales representative to inquire about non-EPS serve ware. If they do not carry them, request that they begin to do so. As a service to the community, the City has compiled a list of suppliers of acceptable food service containers. The list can be found online at www.danapoint.org/recycle or provided to you via email or phone request through the contact information noted below.

Please note that the vendor list is provided is for informational purposes only. It does not include all vendors and the City of Dana Point does not make any specific recommendation or warranty about the quality of any vendor's products or services. Please contact the City of Dana Point (information noted below) for any additions or corrections.

Who can I contact for more information?

For more information, please contact Jennifer Anderson in Public Works & Engineering Services at (949) 248-3571 or janderson@danapoint.org.

City of Dana Point Public Works & Engineering Services
33282 Golden Lantern, Dana Point CA 92629
(949) 248-3554

EXHIBIT 7.3

BMP Design Manual

for

the City of Dana Point

December 12, 2023

Prepared in fulfillment of Provision F.2.b of the San Diego Regional MS4 Permit (Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100).

December 12, 2023

Pursuant to City of Dana Point Municipal Code (DPMC) 15.10.060 Control of Surface Runoff from Development, all new development and redevelopment projects within the City shall be undertaken in accordance with the development project guidance, including but not limited to, where applicable, the City Model Water Quality Management Plan.

The City Model WQMP consists of the following elements:

- **Section 7 of the City of Dana Point's Local Implementation Plan (LIP)/Jurisdictional Runoff Management Plan (JRMP)**. This section describes how the City conditions land development projects to meet the applicable elements of Provision E.3 of the MS4 Permit. This section of the LIP/JRMP refers to the Model Water Quality Management Plan (Model WQMP) and Technical Guidance Document (TGD) for detailed criteria and uniform technical guidance on preparing Project WQMPs. The City's LIP/JRMP is posted on the City's website here: http://www.danapoint.org/department/public-works-engineering/environmental and linked from the South Orange County Clearinghouse: https://ocgov.box.com/v/JRMP.

- **South Orange County Model WQMP and TGD.** These two documents describe the uniform criteria and procedures that apply to developing Project Water Quality Management Plans for Priority Development Projects in South Orange County. These documents are posted on the City's website here: www.danapoint.org/department/public-works-engineering/environmental/water-quality-requirements-for-development-projects and the South Orange County Clearinghouse: https://ocgov.box.com/v/Model-BMP-Design-Manual.

- **South Orange County Hydromodification Management Plan (HMP)**. This document provides criteria and guidance for design of hydromodification control BMPs for PDPs that discharge to water bodies that are susceptible to hydromodification impacts. The requirement to consult the HMP for applicable PDPs is included in the Model WQMP and TGD. This document is posted on the City's website here: www.danapoint.org/department/public-works-engineering/environmental/water-quality-requirements-for-development-projects and on the South Orange County Clearinghouse: https://ocgov.box.com/v/Model-BMP-Design-Manual.

- **Additional local guidance and tools are available on the City's website:** http://www.danapoint.org/department/public-works-engineering/environmental.

This combination of documents is unique to the City of Dana Point and comprises its "BMP Design Manual" pursuant to Provision F.2.b of the San Diego Regional MS4 Permit.

At this time, alternative compliance options are not available.

For questions, please contact: Lisa Zawaski at lzawaski@danapoint.org or 949-248-3584.

Exhibit 7.4

City of Dana Point Water Quality Management Plan Template

September 28, 2017

The document can be found at the link below for download:

- www.danapoint.org/wqrequirements

If you have any question or would like to request an electronic, editable version, please contact Dana Point Public Works Department at 949-248-3554.

Exhibit 7.5

City of Dana Point Operations & Maintenance (O&M) Plan Template

September 28, 2017

The document can also be found at the link below for download:

- www.danapoint.org/wqrequirements

If you have any question or would like to request an electronic, editable version, please contact Dana Point Public Works Department at 949-248-3554.

<City of Dana Point WQMP O&M Template>

September 28, 2017 Version

A separate detailed, stand-alone, user-friendly Operation & Maintenance (O&M) Plan must be part of the Final WQMP submittal and approved prior to Grading Permit issuance or Certificate of Occupancy in certain circumstances. The O&M Plan must include detailed operations and maintenance instructions for all applicable BMPs and the as-built BMP site plan. Disregard previous versions of this template.

The red text and *highlighted yellow* is intended to be instructional and should be deleted before submittal of the document for review.

For questions, please contact the City Water Quality Engineer at 949-248-3584, lzawaski@danapoint.org.

Operation & Maintenance (O&M) Plan for WQMP

Project Name:

Prepared for:

Insert Owner/Developer Name-then TAB.

Insert Address 1 then press ENTER to insert Address 2 or TAB to next field.

Insert City, State, ZIP-then TAB.

Insert Telephone-then TAB.

Insert email-then TAB.

Prepared by:

Insert Consulting/Engineering Firm Name-then TAB.

Engineer: Insert Name-then TAB.

Registration No. Insert Number-then TAB.

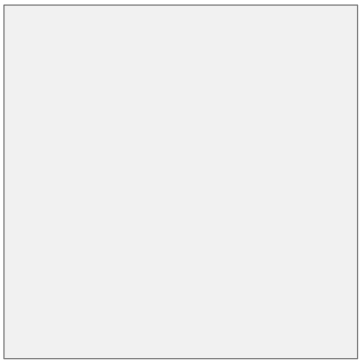
Insert Address-then TAB.

Insert City, State, ZIP-then TAB.

Insert Telephone-then TAB

Insert email-then TAB.

Engineer's Seal



Prepared on:

Insert Date-then TAB.

Insert Revision Date(s) as appropriate-then TAB.

Contents

Page No.

Guidance: Incorporate additional exhibits, reports, worksheets, and calculations, as needed.

Guidance: Highlighted text throughout the template provides guidance for use during WQMP preparation. ***Delete this guidance prior to submission of WQMP.***

Guidance: Prior to submittal, review Table of Contents, pages numbers, Attachment references, etc. to ensure that they are correct. Submittals may be returned as incomplete

Section 1 Project Description and BMP Overview

This O&M Plan describes the designated responsible party for implementation of this WQMP, including: operation and maintenance of all the structural BMP(s), conducting the training/educational program and duties, and any other necessary activities. The O&M Plan includes detailed inspection and maintenance requirements for all structural BMPs, including copies of any maintenance contract agreements, manufacturer's maintenance requirements, permits, etc.
Guidance: This section is intended to introduce the user of the O&M plan to the project and the BMPs that are present. It should contain sufficient detail for the user to be familiar with the project without consulting the WQMP. It does not need to contain the same level of detail as the WQMP.

General Project Attributes and Stormwater Control Measures		
Site Location	*Guidance: Project location, address, boundaries.*	
APN		
Project Area (ft^2): _____	Number of Dwelling Units: _____	SIC Code: _____
Narrative Project Description:	*Guidance: Briefly describe the development type, land uses, site activities,*	
Project-specific Source Control BMPs	*Guidance: Briefly list the source control BMPs specific to the project, including structural source control features and housekeeping activities.*	

General Project Attributes and Stormwater Control Measures	
Summary of Drainage Patterns	*Guidance: Briefly summarize how the site drains and where it discharges to.*
Summary of Hydrologic Source Controls	*Guidance: Summarize any HSCs that are part of the overall stormwater control approach.*
Structural Treatment and Hydromodification BMPs	*Guidance: Summarize the structural treatment and hydromodification BMPs (if applicable) found on the project site. This is intended to orient O&M personnel to the system of controls for the site.* *The following table is intended to provide a BMP-specific introductoin*

Guidance: Briefly describe all of the structural LID and/or hydromodification BMPs incorporated into the project. Suggest including a table similar to the one below to the BMP type, include a narrative description of the BMP including pretreatment, if applicable, location on the site, and any specific design considerations that maintenance personnel should be aware of. Example text shown in table. Include photos/maps/exhibits showing locations, designs, and details of each BMP in Attachment 1 to supplement this table. This table should help maintenance personnel identify the BMPs on the drainage map to ensure they understand what each is and have not missed any. See TGD Section 4 and 5 and the BMP fact sheets in TGD Appendix G for additional guidance.

BMP ID	BMP Type	Narrative Description	Location	Other Considerations
BMP 1	*CDS Unit*	*Proprietary pre-treatment device located upstream of infiltration basin. Receives Flow from DMA 1.*	*Manhole 6W on west Carpenter St. near intersection with Via Andorra.*	
BMP 2	*Infiltration Basin (INF-1)*	*Above-ground 3 -ft deep vegetated basin infiltrating flow into soil. Receives Flow from DMA 1 (after CDS treatment).*	*Just west of Carpenter St near western border of project.*	*Flow is pretreated by CDS unit prior to infiltration*
BMP 3	*Bioinfiltration Basin (BIO-1)*	*Above-ground 1 -ft deep bioretention basin with sedimentation forebay. Receives flow from DMA 2.*	*North of Via Andorra near northeastern border of project*	*Underdrain outlet is above gravel layer to provide retention/nutrient treatment.*

Section 2 Personnel, Documentation, and Reporting

2.1 Maintenance Roles and Responsibilities

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

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

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

Role	Name (Title and Affiliation)	Phone Number	Address	Email Address
Facility Owner				
Responsible Party				
Designated Emergency Respondent				

2.2 Qualification and Training Requirements for Personnel

Guidance: Template language is included. Update this section, as needed, based on the maintenance activities specific to the BMPs included in the project.

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

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

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

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

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

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

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

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

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

2.3 Maintenance Agreements and Funding Mechanisms

Guidance: Briefly describe the maintenance agreement and/or funding mechanism. Describe what agency, department, organization, or private company will operate the BMPs, and how the funding will be provided. Include the maintenance agreement as Attachment 2, as needed.

2.4 Record Keeping Requirements

Guidance: Update this section, as necessary.

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

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

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

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

The City or other agencies may also require a monitoring plan which has additional requirements for documentation. Details regarding the monitoring plan, such as parameters to be tested, frequency, testing locations, laboratory, etc. shall be included as appropriate, with the plan for meeting documentation requirements. This could include an attachment with a template form for sample collection, for example.

If no monitoring is required, a statement to that effect should be made.

2.5 Required Permits Associated with Maintenance Activities

Guidance: List any permits required for implementation, operation, and maintenance of the BMPs. Possible examples are: permits for maintenance-related discharges to sanitary sewer, permits from California Fish and Game for access or maintenance that pertains to habitat, and Encroachment Permits. If no permits are required, state this in this section.

2.6 Self-Reporting Requirements/WQMP Verification Form

Guidance: State any regular self-reporting requirements required by the local jurisdiction. Example from is below. Update, as needed. Include templates for any jurisdiction-specific forms in the attachment of this O&M Plan.

The WQMP Verification Form (**Attachment 4**) shall be completed accurately and submitted, with associated documentation, to the City of Dana Point via email to lzawaski@danapoint.org by September 30 of each year, or as requested by the City. Failure to complete and submit the verification form will result in a noncompliance and enforcement actions may be taken.

2.7 City Inspections

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

2.8 Electronic Data Submittal

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

Section 3 Inspection and Maintenance Activities

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

3.1 Inspection and Maintenance of Source Control BMPs

Guidance: The tables below includes the recommended activities and frequencies for each source control BMP that has potential O&M requirements from the TGD. Delete rows for any unused BMPs, and add others, as needed. May tailor the table for site-specific considerations, as needed.

Source Control BMP	Activity	Frequency
Dry Weather Flow Source Control **Note: this is a South Orange County High Priority Water Quality Condition for All Projects**	Check for dry weather flows such as street washing, irrigation overspray, air conditioner condensate in areas of the project that do not drain to LID BMPs, the sanitary sewer, or landscaped pervious areas. Notify residents of any dry weather flows and follow up to correct.	Twice per year during dry season
	Inspect project outfall or most-downstream project manhole for presence of dry weather flow. If present, conduct reconnaissance to determine source and implement actions to eliminate source.	Twice per year during dry season
N1. Education for Property Owner's Tenants and Occupants	Distribute appropriate materials to owners, tenants, and/or occupants via contract language, mailings, website, or meetings.	Information provided to owners and tenants upon sale or lease. Reminders sent or posted as needed.
	Check www.ocwatersheds.com and/or City website for updated educational materials.	Annually

Source Control BMP	Activity	Frequency
N2. Activity Restrictions	Within the CC&R's or lease agreement, restrict the following activities: *List the activities to be restricted for water quality source control, e.g. car washing outside of car wash areas, etc.*	Information provided to owners and tenants upon sale or lease. Reminders sent or posted as needed.
N3/S4. Common Area Landscape Management, Efficient Landscape Design, and Efficient Irrigation	Check that fertilizer and pesticide usage is in accordance wiN1th the Integrated Pest Management Program. Adjust, if needed.	Annually
	Check the irrigation system water budget to ensure efficiency targets are being met and the system is in good condition. Adjust/repair irrigation system and controllers, if needed.	Annually prior to irrigation system activation
	Check landscaping for presence of invasive species and remove, if needed.	Annually
N11. Common Area Litter Control	Remove trash from around trash enclosure, inspect to ensure lids closed, structurally sound, and not overflowing. Repair or replace, as needed.	Monthly
	Inspect common area for litter and trash disposal violations by homeowners and reporting to the HOA or responsible party for investigation. Remove litter, as needed.	Weekly
N13/S6. Housekeeping of Loading Docks	Inspect loading dock for litter, spills, broken containers, and broken containers. Remove litter and debris and sweep docking area.	Monthly
	Check that loading dock is covered and isolated with no run-on or run-off to other areas or the storm drain system. Repair, redesign, regrade, etc. to correct deficiencies.	Annually
	If spills of hazardous materials occur, clean up spill, but prevent wash water from entering storm drain system.	As needed

Source Control BMP	Activity	Frequency
N14. Common Area Catch Basin Inspection	Remove trash and debris from catch basins and grates. Check for damage, clogging, and standing water. Repair or mitigate clogging/standing water, as needed.	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events >0.5 inches
N15. Street Sweeping Private Streets and Parking Lots	Sweep curb and gutter areas using a vacuum street sweeper. Report any significant or illicit debris in curb/gutter to HOA or responsible party, as needed.	Monthly
S1. Provide Storm Drain System Stenciling and Signage	Check that all catch basins in paved areas marked or stenciled with "No dumping-Drains to Ocean; No Descargue Basura" language. Replace/repaint markings if faded, damaged, removed, or otherwise illegible.	Annually
S2. Design and Construct Outdoor Material Storage Areas	Check outdoor material storage structure to ensure structural stability is sound and that no contact of the stored materials with rainfall or runoff is occurring. Check secondary containment for leaks. Repair leaks or damage, as needed and mitigate, if coming into contact with stormwater.	Twice per year
S3. Design and Construct Trash and Waste Storage Areas	Check that outdoor waste storage structure is consistently covered, that structural stability is sound, and that no run-on or contact of the trash with runoff is occurring. Repair leaks or damage and mitigate if trash coming into contact with stormwater, as needed.	Twice per year
	Check that trash is removed by local waste management contractor on at least a weekly basis for proper disposal.	Weekly

Source Control BMP	Activity	Frequency
S5. Protect Slopes and Channels and Provide Energy Dissipation	Check slopes, channels, riprap and other conveyance or energy dissipation areas for signs of erosion or scour. Replace material, repair channels, replant vegetation, and/or redesign, as needed for signs of erosion/scour.	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events >0.5 inches
S7. Maintenance Bays	Check that no run-on or runoff is occurring to or from maintenance bays	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events >0.5 inches
	Check that all wash water, leaks, and spills are prevented from possible contact with rainwater. Check berms, drop inlets, and other control devices for structural soundness and effectiveness. Repair or mitigate, as needed, if runoff occurring from maintenance bays.	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events >0.5 inches
	Remove trash and debris and sweep maintenance areas	Monthly
S8. Vehicle Wash Areas	Check that no run-on or runoff is occurring to or from vehicle wash areas	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events >0.5 inches
	Check that all wash water, leaks, and spills are prevented from possible contact with rainwater. Check berms, drop inlets, and other control devices for structural soundness and effectiveness. Maintain or replace any failed structural measures, as needed.	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events >0.5 inches
	Remove trash and debris from vehicle wash areas	Monthly

Source Control BMP	Activity	Frequency
S9. Outdoor Processing Areas	Check that all wash water, leaks, and spills are prevented from possible contact with rainwater. Check berms, drop inlets, and other control devices for structural soundness and effectiveness. Maintain or replace any failed structural measures, as needed.	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events >0.5 inches
	Remove trash and debris and sweep outdoor processing areas	Monthly
S10. Equipment Wash Areas	Check that all wash water, leaks, and spills are prevented from possible contact with rainwater. Check berms, drop inlets, and other control devices for structural soundness and effectiveness. Maintain or replace any failed structural measures, as needed.	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events >0.5 inches
	Remove trash and debris and sweep equipment wash areas	Monthly
S11. Fueling Areas	Check that all wash water, leaks, and spills are prevented from possible contact with rainwater. Check berms, drop inlets, and other control devices for structural soundness and effectiveness. Maintain or replace any failed structural measures, as needed.	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events >0.5 inches
	Remove trash and debris and sweep fueling areas	Monthly
S12. Hillside Landscaping	Check the vegetation on steep hillsides to ensure healthy, and check for signs of erosion. Replace eroded areas with deep-rooted, drought tolerant vegetation and remove invasives, as needed.	Twice per year

Source Control BMP	Activity	Frequency
S13. Wash Water for Food Preparation Areas	Check that signs are present prohibiting the discharge of wash water from food preparation areas (including outdoor) to areas draining to a storm drain, is prohibited.	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events >0.5 inches
	Check that all wash water, leaks, and spills are prevented from possible contact with rainwater. Check sinks, berms, and other structures for structural soundness and effectiveness. Maintain or replace any failed structural measures, as needed.	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events >0.5 inches
	Remove trash and debris and sweep outdoor food preparation areas	Weekly

3.2 Inspection and Maintenance of Hydrologic Source Controls

Guidance: Where HSCs are considered as part of BMP sizing, then HSCs must be maintained in order to maintain intended functionality. The table below includes the recommended activities and frequencies for each HSC from the TGD. Delete rows for any unused HSCs, and add others, as needed. May tailor the table for site-specific considerations, as needed.

HSCs	Activity	Frequency
Localized On-Lot Infiltration (E.g. Rain Gardens, French Drains)	Confirm presence of HSC. Remove trash. Check facility for excessive sediment accumulation (>~ 1 inch), major erosion, damage, channelization, loss of vegetation, and standing water. Check downspout and flow spreader for damage or clogging. Remove sediment, restore vegetation, scarify soil, and/or otherwise mitigate, as needed, to restore functionality.	Annually
Impervious Area Dispersion (E.g. Downspout Disconnect, Sheet Flow Dispersion)	Confirm presence of HSC. Remove trash from pervious area. Check pervious area erosion, channelization, loss of vegetation. Check downspout and flow spreader for damage or clogging. Decompact, level, reseed, or other activities, as needed, to restore functionality.	Annually
Street Trees	Confirm presence of HSC. Check trees for damage, impaired health, insects, and growth. Prune and maintain trees to avoid impairment of traffic and replace/treat dead or damaged trees.	Annually
Green Roof/Brown Roof	Confirm presence of HSC. Check roof storage for excessive standing water. Check vegetation (if present) for health and coverage. Mitigate any detected issues to restore function, as needed.	Annually
Self-Retaining Areas	Confirm presence of HSC. Any self-retaining areas must be examined for excessive standing water and clogging (meaning they are no longer self-retaining). Mitigate, as needed, to provide full retention of the DCV.	Annually

3.3 Inspection and Maintenance of Structural LID and Hydromodification BMPs

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

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

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

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

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

BMP ID	BMP Type	Reference Maintenance Table
BMP 1	*CDS Unit*	*Manufacturer O&M Manual (Attachment XX)*
BMP 2	*Infiltration Basin)*	*INF-1 (Page XX)*
BMP 3	*Bioinfiltration Basin*	*BIO-1 (Page XX)*

Guidance: This section is pre-populated with tables for each LID and HM BMP. These tables contain the recommended activities and frequencies based on the BMP Fact Sheets in Appendix G of the TGD.

Delete tables for any unused BMPs, and add others, as needed.

Add tables for any proprietary BMPs that do not fit into any of the categories below, such as proprietary BMPs used for pretreatment or trash control based on manufacturers recommendations.

May tailor the tables for site-specific considerations, as needed.

Section 1.4 should already list the BMPs associated with the project, but this section should assign each of these BMPs to a category with a table below.

INF-1 Infiltration Basins		**Inspection Notes**
Activity	**Frequency**	
GENERAL INSPECTIONS		
Identify eroded facility areas	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches	
Observe and record drawdown rate		
Estimate degree of sediment accumulation in pretreatment system and infiltration basin		
Identify areas of compromised plant health or density		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Sediment, Trash, and Debris		
Remove trash from facility	Each visit; as needed	
Remove sediment from forebay when estimated sediment accumulation exceeds 25% of the forebay volume	As needed	
Remove sediment from pretreatment system per manufacturer's recommendations or when sediment storage volume is more than 50% full	Per manufacturer recommendation, or as needed	
Vegetation and Infiltration Bed		
Irrigate as recommended by a landscape professional, typically for the first 3 years to establish vegetation	As needed	
Remove undesirable vegetation	Four times per year during wet season, including inspection just before the wet season	
Replant or reseed areas of thin or missing vegetation	Annually	

INF-1 Infiltration Basins		Inspection Notes
Activity	**Frequency**	
Scrape soil from top 3 to 6 inches of infiltration bed and reestablished vegetation; augment soil amendment if needed	When infiltration rate drops below design infiltration rate	
Inflow and Outflow Structures		
Check energy dissipation function and add riprap	Four times per year during wet season, including inspection just before the wet season	
Inspect inlets and outlets and remove accumulated sediment	Four times per year during wet season, including inspection just before the wet season	
Repair structural damage to inlets and outlets	As needed	
CORRECTIVE (MAJOR) MAINTENANCE		
Prepare documentation of issues and resolutions for review by appropriate parties; modify WQMP if needed.	Before major maintenance	
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	
Take photographs before and after from the same vantage point	Before and after	

INF-2 Infiltration Trench		Inspection Notes
Activity	**Frequency**	
GENERAL INSPECTIONS		
Identify eroded facility areas	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches	
Observe and record drawdown rate via the observation port		
Estimate degree of sediment accumulation in the pea gravel, thickness of surface layer or depth of penetration		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Pea Gravel Filter Layer		
Remove sediment via scraping of the top layers of this layer and replacement with clean washed pea gravel	Annually or when sediment has accumulated within more than 2 inches of the pea gravel layer	
Replace full depth of pea gravel	When comingled with sediment and appears to be restricting inflow to system	
Gravel Bed		
Excavate the entire facility, rehabilitate bottom and sides via over-excavation, and replace aggregate layers. Aggregate layers can be reused if they are washed before replacement.	When infiltration rate drops below design infiltration rate	
Inflow and Outflow Structures		
Repair structural damage to inlets and outlets	As needed	
CORRECTIVE (MAJOR) MAINTENANCE		
Prepare documentation of issues and resolutions for review by appropriate	Before major maintenance	

INF-2 Infiltration Trench		Inspection Notes
Activity	**Frequency**	
parties; modify WQMP if needed.		
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	
Take photographs before and after from the same vantage point	Before and after	

INF-3 Bioretention Without Underdrain		**Inspection Notes**
Activity	**Frequency**	
GENERAL INSPECTIONS		
Remove trash and debris	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches.	
Repair eroded facility areas		
Inspect and maintain access roads		
Inspect and resolve areas of standing water		
Remove minor sediment in facility bottom		
Provide vector control if needed		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Vegetation		
Irrigate as recommended by a landscape professional, typically for the first 3 years to establish vegetation	As needed	
Remove undesirable vegetation	Four times per year during wet season, including inspection just before the wet season.	
Reseed or replant areas of thin or missing vegetation	Annually	
Mulch		
Remove and replace mulch in areas where significant sediment (>1 inch) has accumulated	Annually	
Add an additional 1-2 inches of mulch; replace any mulch that is removed	Annually	
Media Layer		
Scarify media to promote infiltration while removing mulch	Annually	

INF-3 Bioretention Without Underdrain		Inspection Notes
Activity	**Frequency**	
Replace top 3-6 inches of media layer and replace vegetation	Estimated every 10 years (highly site specific)	
Replace full depth of media and replace vegetation	Estimated every 30 years (highly site specific)	
Inflow, Underdrain and Outflow Structures		
Check energy dissipation function and add riprap	Four times per year during wet season, including inspection just before the wet season.	
Inspect inlets and outlets and remove accumulated sediment	Four times per year during wet season, including inspection just before the wet season.	
Flush underdrain	As needed	
Repair structural damage to inlets, outlets, and underdrain	As needed	
CORRECTIVE (MAJOR) MAINTENANCE		
For the adaptable configuration, utilize results of downtown observations to determine the need for adjustment of the outlet structure (i.e., uncapping closed underdrain)	Based on twice-yearly drawdown observations following events 0.5 inch or larger	
Prepare documentation of issues and resolutions for review by appropriate parties; modify WQMP if needed.	Before major maintenance	
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	
Take photographs before and after from the same vantage point	Before and after	

INF-4 Dry Well		Inspection Notes
Activity	**Frequency**	
GENERAL INSPECTIONS		
Identify and control sources if sediment in tributary areas	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches	
Observe and record drawdown rate via the observation port		
Estimate degree of sediment and/or trash and debris accumulation in the pre-treatment system		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Pre-treatment system		
Remove accumulated material from pre-treatment system	Annually or when material has accumulated to more than 50 percent of capacity of the pre-treatment system. If proprietary pre-treatment is used, then maintain per manufacturer guidance.	
Dry Well		
Excavate the entire facility, rehabilitate bottom and sides via over-excavation, and replace system components.	When infiltration rate drops below design infiltration rate	
Inflow and Outflow Structures		
Repair structural damage to inlets and outlets	As needed	
CORRECTIVE (MAJOR) MAINTENANCE		
Prepare documentation of issues and resolutions for review by appropriate parties; modify WQMP if needed.	Before major maintenance	
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	

INF-5 Permeable Pavement		Inspection Notes
Activity	**Frequency**	
GENERAL INSPECTIONS		
Inspect for areas of sediment accumulation in the pavement surface	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches.	
If sediment accumulation is elevated, inspect for potential sources of sediment in the tributary area and recommend control approaches		
Observe and record drawdown rate via observation port following storm event		
Periodically (every 2 to 5 years) measure the permeability of the surface of the permeable pavement		
Identify any damage to pavement		
Inspect overflow structures		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Permeable Surface Layer		
Remove sediment and leaf litter using a mechanical sweeper (i.e., regenerative air or vacuum-assisted sweeper)	Two to four times per year during wet season including just before the wet season, depending on sediment and debris load	
Manually remove weeds	Annually	
Power wash surface layer (without using surfactants)	Annually	
Patch pavement surface where needed	As needed	
Other activities specific to pavement surface type	As needed	
Coordinate with maintenance of adjacent pavement to ensure permeable pavement is protected	As needed	

INF-5 Permeable Pavement		Inspection Notes
Activity	**Frequency**	
Underdrain and Outflow Structures		
Inspect outlets and remove accumulated sediment	Four times per year during wet season, including inspection just before the wet season.	
Repair structural damage to outlets	As needed	
CORRECTIVE (MAJOR) MAINTENANCE		
Prepare documentation of issues and resolutions for review by appropriate parties; modify WQMP if needed.	Before major maintenance	
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	
Take photographs before and after from the same vantage point	Before and after	

INF-6 Underground Infiltration		**Inspection Notes**
Activity	**Frequency**	
GENERAL INSPECTIONS		
Inspect condition of pretreatment BMP to determine need for maintenance	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches.	
Inspect degree of sediment accumulation in storage reservoir, if possible		
Observe and record drawdown rate		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Pretreatment System		
Remove accumulated trash and debris	Each visit; as needed	
Remove sediment from pretreatment system per manufacturer's recommendations or when sediment storage volume is more than 50% full	Per manufacturer recommendation, or as needed	
Storage Reservoir		
It is not typically practical to maintain the storage reservoir or infiltrating surface; plan for overall reconstruction when infiltration falls below the design infiltration rate	Estimate frequency of clogging maintenance using guidance in Appendix E.4 of the TGD.	
If infiltration has declined and the system has the flexibility to be adapted to serve as a biotreatment BMP with partial infiltration (i.e., through use of a proprietary BMP as a pretreatment system), then adjust outlet to infiltrate a shallower depth of water and operate as biotreatment with partial infiltration system while infiltration rates allow. This can extend the period before rehabilitation is needed.	As needed and acceptable.	

INF-6 Underground Infiltration		Inspection Notes
Activity	**Frequency**	
Inflow and Outflow Structures		
Inspect inlets and outlets and remove accumulated sediment	Four times per year during wet season, including inspection just before the wet season.	
Repair structural damage to inlets and outlets	As needed	
CORRECTIVE (MAJOR) MAINTENANCE		
Prepare documentation of issues and resolutions for review by appropriate parties; modify WQMP if needed.	Before major maintenance	
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	
Take photographs before and after from the same vantage point	Before and after	

HU-1 Rainwater Harvesting Cisterns and Tanks		Inspection Notes
Activity	**Frequency**	
GENERAL INSPECTIONS		
Check for leaks	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches.	
Inspect for minor sediment in cistern bottom		
Inspect for vector control issues		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Clean out gutters, screening, and/or first-flush diverter	As-needed	
Remove sediment, trash, debris, and oil accumulation from cistern	Semi-annually or as needed	
Clean inside surfaces of cistern and disinfect	Annually	
Maintain treatment systems per manufacturer or designer recommendations	As specified	
CORRECTIVE (MAJOR) MAINTENANCE		
Prepare documentation of issues and resolutions for review by appropriate parties; modify WQMP if needed.	Before major maintenance	
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	

BIO-1/BIO-6 Bioinfiltration/Bioretention With Underdrain		**Inspection Notes**
Activity	**Frequency**	
GENERAL INSPECTIONS		
Remove trash and debris	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches.	
Repair eroded facility areas		
Inspect and maintain access roads		
Inspect and resolve areas of standing water		
Remove minor sediment in facility bottom		
Provide vector control if needed		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Vegetation		
Irrigate as recommended by a landscape professional, typically for the first 3 years to establish vegetation	As needed	
Remove undesirable vegetation	Four times per year during wet season, including inspection just before the wet season.	
Reseed or replant areas of thin or missing vegetation	Annually	
Mulch		
Remove and replace mulch in areas where significant sediment (>1 inch) has accumulated	Annually	
Add an additional 1-2 inches of mulch; replace any mulch that is removed	Annually	
Media Layer		

BIO-1/BIO-6 Bioinfiltration/Bioretention With Underdrain		**Inspection Notes**
Activity	**Frequency**	
Scarify media to promote infiltration while removing mulch	Annually	
Replace top 3-6 inches of media layer and replace vegetation	Estimated every 10 years (highly site specific)	
Replace full depth of media and replace vegetation	Estimated every 30 years (highly site specific)	
Inflow, Underdrain and Outflow Structures		
Check energy dissipation function and add riprap	Four times per year during wet season, including inspection just before the wet season.	
Inspect inlets and outlets and remove accumulated sediment	Four times per year during wet season, including inspection just before the wet season.	
Flush underdrain	As needed	
Repair structural damage to inlets, outlets, and underdrain	As needed	
CORRECTIVE (MAJOR) MAINTENANCE		
Prepare documentation of issues and resolutions for review by appropriate parties; modify WQMP if needed.	Before major maintenance	
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	
Take photographs before and after from the same vantage point	Before and after	

BIO-2 Vegetated Swale		**Inspection Notes**
Activity	**Frequency**	
GENERAL INSPECTIONS		
Remove trash and debris	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches.	
Repair eroded facility areas		
Inspect and maintain access roads		
Inspect and resolve areas of standing water		
Remove minor sediment in facility bottom		
Provide vector control if needed		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Vegetation		
Irrigate as recommended by a landscape professional, typically for the first 3 years to establish vegetation	As needed	
Remove undesirable vegetation	Four times per year during wet season, including inspection just before the wet season.	
Repair areas of thin or missing vegetation	Annually	
Topsoil/Amended Soils/Media Layer		
Replace top 3-6 inches of top soil or media layer and replace vegetation	Estimated every 10 years (highly site specific)	
Replace full depth of top soil, media, aggregate storage (if provided) and replace vegetation	Estimated every 30 years (highly site specific)	
Inflow, Underdrain and Outflow Structures		
Check energy dissipation function	Four times per year during	

BIO-2 Vegetated Swale		Inspection Notes
Activity	**Frequency**	
and add riprap	wet season, including inspection just before the wet season.	
Inspect inlets and outlets and remove accumulated sediment	Four times per year during wet season, including inspection just before the wet season.	
Flush underdrain, if included in design	As needed	
Repair structural damage to inlets, outlets, and underdrain	As needed	
CORRECTIVE (MAJOR) MAINTENANCE		
Prepare documentation of issues and resolutions for review by appropriate parties; modify WQMP if needed.	Before major maintenance	
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	
Take photographs before and after from the same vantage point	Before and after	

BIO-3 Vegetated Filter Strip		Inspection Notes
Activity	**Frequency**	
GENERAL INSPECTIONS		
Remove trash and debris	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches.	
Check for eroded facility areas or areas with sparse or dead vegetation		
Inspect for signs of concentrated flow into level spreader or into filter strip		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Repair eroded areas	Four times per year during wet season, including inspection just before the wet season.	
Maintain level spreader by making local adjustments to elevations to improve flow distribution over filter strip	Annually	
Vegetation		
Irrigate as recommended by a landscape professional, typically for the first 3 years to establish vegetation	As needed	
Remove undesirable vegetation (i.e., weeds)	Four times per year during wet season, including inspection just before the wet season.	
Reseed areas of thin or missing vegetation	Annually	
Topsoil/Amended Soils		
Decompact/aerate to at least a 6-inch depth and reseed to maintain porosity and robust vegetation replace vegetation	Estimated every 10 to 15 years (highly site specific)	

BIO-3 Vegetated Filter Strip		Inspection Notes
Activity	**Frequency**	
CORRECTIVE (MAJOR) MAINTENANCE		
Prepare documentation of issues and resolutions for review by appropriate parties; modify WQMP if needed.	Before major maintenance	
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	
Take photographs before and after from the same vantage point	Before and after	

BIO-4 Dry Extended Detention Basin		Inspection Notes
Activity	**Frequency**	
GENERAL INSPECTIONS		
Remove trash and debris	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches.	
Areas of erosion or scour facility areas		
Areas of standing water		
Need for vegetation management		
Need for vector control efforts		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Repair areas of erosion, scour, or standing water	As needed	
Sediment		
Remove sediment from forebay when sediment volume exceeds 25% of the sediment storage volume	As needed	
Vegetation		
Irrigate as recommended by a landscape professional, typically for the first 3 years to establish vegetation	As needed	
Remove undesirable vegetation	Four times per year during wet season, including inspection just before the wet season.	
Reseed or replant areas of thin or missing vegetation	Annually	
Inflow and Outflow Structures		
Check energy dissipation function and add riprap as needed	Four times per year during wet season, including inspection just before the wet season.	

BIO-4 Dry Extended Detention Basin		Inspection Notes
Activity	**Frequency**	
Inspect inlets and outlets and remove accumulated sediment	Four times per year during wet season, including inspection just before the wet season.	
Repair structural damage to inlets and outlets	As needed	
CORRECTIVE (MAJOR) MAINTENANCE		
Prepare documentation of issues and resolutions for review by appropriate parties; modify WQMP if needed.	Before major maintenance	
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	
Take photographs before and after from the same vantage point	Before and after	

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

BIO-8 Wet Detention Basin		Inspection Notes
Activity	**Frequency**	
GENERAL INSPECTIONS		
Identify eroded facility areas	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches.	
Identify needs to improve vector control if needed		
Estimate degree of sediment accumulation		
Identify areas of compromised plant health or density		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Sediment, Trash, and Debris		
Remove trash from facility	Each visit; as needed	
Remove sediment from forebay when estimated sediment accumulation exceeds 25% of the forebay volume	As needed	
Remove sediment from basin bottom when estimated sediment accumulation exceeds 10% of total volume.	As needed	
Vegetation		
Irrigate as recommended by a landscape professional, typically for the first 3 years to establish vegetation	As needed	
Remove undesirable vegetation	Four times per year during wet season, including inspection just before the wet season.	
Reseed or replant areas of thin or missing vegetation	Annually	
Remove algae mats when algae coverage is more than 20% of the	As needed	

BIO-8 Wet Detention Basin		Inspection Notes
Activity	**Frequency**	
water surface		
Inflow and Outflow Structures		
Check energy dissipation function and add riprap, as needed	Four times per year during wet season, including inspection just before the wet season.	
Inspect inlets and outlets and remove accumulated sediment	Four times per year during wet season, including inspection just before the wet season.	
Repair structural damage to inlets and outlets	As needed	
CORRECTIVE (MAJOR) MAINTENANCE		
Prepare documentation of issues and resolutions for review by appropriate parties; modify WQMP if needed.	Before major maintenance	
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	
Take photographs before and after from the same vantage point	Before and after	

BIO-9 Constructed Wetland		**Inspection Notes**
Activity	**Frequency**	
GENERAL INSPECTIONS		
Identify eroded facility areas	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches.	
Identify needs to improve vector control if needed		
Estimate degree of sediment accumulation		
Identify areas of compromised plant health or density		
Identify any needed corrective maintenance that will require site-specific planning or design		
ROUTINE MAINTENANCE		
Sediment, Trash, and Debris		
Remove trash from facility	Each visit; as needed	
Remove sediment from forebay when estimated sediment accumulation exceeds 25% of the forebay volume	As needed	
Remove sediment from basin bottom when estimated sediment accumulation exceeds 10% of total volume.	As needed	
Vegetation		
Irrigate as recommended by a landscape professional, typically for the first 3 years to establish vegetation	As needed	
Remove undesirable vegetation	Four times per year during wet season, including inspection just before the wet season.	
Replant or reseed areas of thin or missing vegetation	Annually	
Remove algae mats when algae coverage is more than 20% of the water surface	As needed	

BIO-9 Constructed Wetland		Inspection Notes
Activity	**Frequency**	
Inflow and Outflow Structures		
Check energy dissipation function and add riprap	Four times per year during wet season, including inspection just before the wet season.	
Inspect inlets and outlets and remove accumulated sediment	Four times per year during wet season, including inspection just before the wet season.	
Repair structural damage to inlets and outlets	As needed	
CORRECTIVE (MAJOR) MAINTENANCE		
Prepare documentation of issues and resolutions for review by appropriate parties; modify WQMP if needed.	Before major maintenance	
Document major maintenance activities; record modified WQMP and as-built plan set if needed	After major maintenance	
Take photographs before and after from the same vantage point	Before and after	

TRT-2 Proprietary Treatment Control BMPs		**Inspection Notes**
Activity	**Frequency**	
GENERAL INSPECTIONS		
Remove trash and debris	Four times per year during wet season, including inspection just before the wet season and within 24 hours after at least two storm events ≥ 0.5 inches	
Identify excess erosion or scour		
Identify sediment accumulation that requires maintenance		
Inspect during storm event, when possible, to estimate treatment capacity and determine if premature bypass is occurring		
Identify any needed corrective maintenance that will require site-specific planning or design		
OPERATION AND MAINTENANCE		
O&M of proprietary treatment control BMPs must follow established manufacturer guidelines		

3.4 Emergency Response Plan

Guidance: Update this section as needed for the development

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

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

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

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

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

1. If an actual or suspected hazardous material incident exists, maintenance personnel will immediately call 911 and the CalOES State Warning Center (Table 6).
2. The Designated Emergency Respondent and Responsible Party assigned to the facility (from Section 2.1) must also be notified of any actual or potential spill.
3. Remediation of contamination in the water quality facility should be handled as a corrective maintenance issue per Section 3.2 of this O&M plan.

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

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

3.5 Sewer Spill Response

In the event that a sewer spill is observed is observed, a call should be made immediately to a plumbing professional and to the appropriate sewer agency.

Plumbing Contractor: _____

Sewer Agency: *Guidance: select appropriate agency that serves this project area.*

South Coast Water District: 949-499-4555

Moulton Niguel Water District: 949-831-2500

San Juan Capistrano Utilities: 949-443-6363, after hours: 949-234-4575

3.5 Vector Control

Guidance: Update, as needed.

In addition to the inspection and maintenance activities listed in Section 3, all BMPs shall be inspected for standing water on a regular basis. Standing water which exists for longer than 72 hours may contribute to mosquito breeding areas. Standing water may indicate that the BMP is not functioning properly and proper action to remedy the situation shall be taken in a timely manner.

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

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

Attachment 1: BMP Site Plan, Details, Schematics, Photos and Other Exhibits

Guidance: This attachment is referenced throughout the O&M Plan for visual information about the BMPs.

This attachment should include a copy of the BMP Site Plan from the WQMP (as-built) and relevant water quality details from the as-built construction drawings/grading plans.

Other exhibits should be included, as necessary, such as landscape, grading and/or architectural plans, to help maintenance staff locate and identify all BMPs associated with the project and identify the areas draining to them.

Schematics and cross sections should be included for each BMP to help maintenance staff identify the important features of each BMP to aid in inspection/maintenance.

Photos of each BMP in its constructed condition can provide useful reference for comparison with existing conditions at inspections and can help maintenance staff identify the BMPs.

Site plan is preferred on minimum 11" by 17" colored sheets, as long as legible.

Attachment 2:Training Log Form

Guidance: An example template for a training/educational log is included, here. Individual adaptation is allowed, and some jurisdictions may have separate templates they require to be used.

TRAINING / EDUCATIONAL LOG

Date of Training/Educational Activity: _____

Name of Person Performing Activity (Printed): _____

Signature: _____

Topic of Training/Educational Activity:

_____

_____

Name of Participant	Signature of Participant

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

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

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

Attachment 3: Inspection and Maintenance Log Forms

Guidance: Unless a different form is preferred, suggest to reference the appropriate BMP Maintenance Tables from Section 3.3.

Refer to the maintenance tables in Section 3.3 for maintenance checklists that can be used for the required inspections. Note that the date, inspection name and signature is required to be included on the forms.

The completed inspection forms shall be submitted to the City each year along with the WQMP Verification Form in Attachment 4.

Attachment 4: WQMP VERIFICATION FORM

CITY OF DANA POINT
WATER QUALITY MANAGEMENT PLAN (WQMP) VERIFICATION SURVEY

This form must be modified to reflect the all the BMPs in this Project WQMP

Project Name/Site Address: _____

Responsible Party : _____

Contact Phone: _____ Contact Email: _____

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

   ☐ **Yes** ☐ **No** Name of Landscape/Maintenance Contractor:
   _____

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

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

   ☐ **Yes** ☐ **No** Date of Last Inspection/Maintenance:
   _____

   Maintenance conducted by:
   _____

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

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

   _____

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

   _____

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

   ☐ **Yes** ☐ **No**

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

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

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

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

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

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

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

   ☐ **Yes** ☐ **No** **Contractor:**
   _____

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

   ☐ **Yes** ☐ **No**

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

    ☐ **Yes** ☐ **No**

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

    ☐ **Yes** ☐ **No**

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

    _____

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

_____
Print Name of Responsible Party

_____

_____

Signature (required) Date

This form must be completed and submitted to the City by September 30 each year.

City of Dana Point • 33282 Golden Lantern • Dana Point • 92629
Attn: Water Quality Engineer

Email: lzawaski@danapoint.org

Attachment 5: Vendor O&M Information

Guidance: Include vendor O&M information for vendor-supplied proprietary BMPs.

Attach O&M criteria derived from Washington State TAPE approval of BMP technology.
http://www.ecy.wa.gov/programs/wq/stormwater/newtech/technologies.html

Attachment 6:Maintenance Agreement and Funding Mechanism Documentation

Guidance: Guidance about the maintenance agreement and funding mechanism is provided in TGD Section 2.8. The maintenance mechanism must assign responsibility for maintenance of the BMPs and describe the funding mechanism. This attachment should document any formal agreements between different owners, agencies, HOAs, etc. for providing the maintenance activities for the BMPs and funding for O&M (including eventual rehabilitation).

Delete if not used.

LIP EXHIBIT 7.6 BMP CONSTRUCTION CERTIFICATION FORM
FORM FOR WQMP CONSTRUCTION CERTIFICATION

CIVIL ENGINEER'S LETTERHEAD

City of Dana Point
Department of Public Works/Engineering
33282 Golden Lantern
Dana Point, CA 92629

Attention: Lisa Zawaski, Senior Water Quality Engineer

Subject: **WQMP Construction Certification**

Reference Project: Grading Permit No. _____

Address: _____

Project Name: _____

I hereby certify that the above referenced project has been field inspected to confirm that the structural best management practices (BMPs) have been installed per the project's approved Water Quality Management Plan (WQMP) and associated grading plans and in accordance with my responsibilities as a Civil Engineer in the State of California.

By way of this certification, I hereby declare that the BMPs are operational and functioning properly for intended use and that any debris that may have been accumulated during construction has been removed.

Photographs of the installed structural BMPs, described and referenced per the Operation and Maintenance (O&M) Plan is attached.

_____
Signature

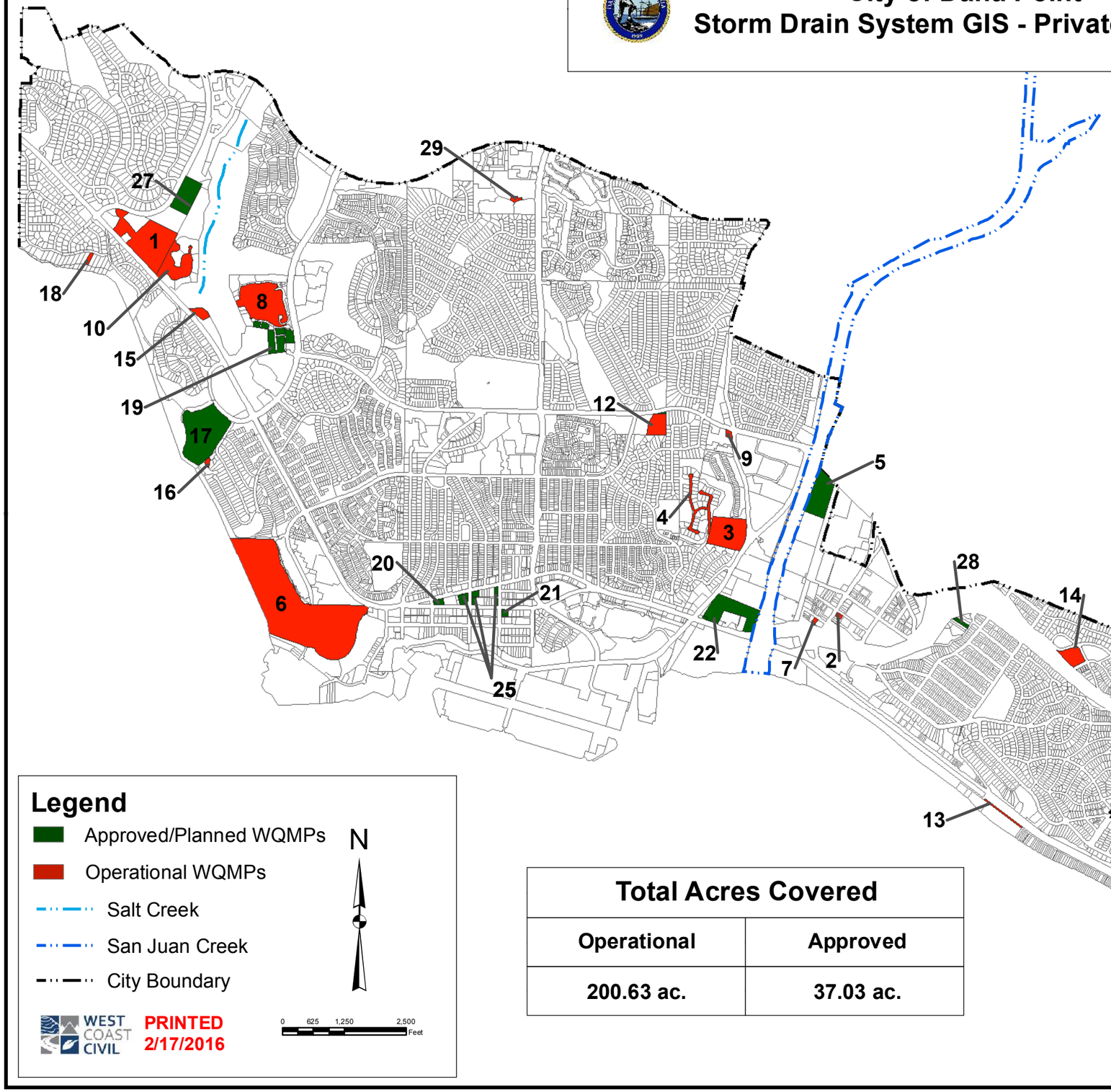
(R.C.E. #_____)

Engineer's Wet Stamp Here

Note: Photographs, with name/brief description/reference shall be taken of the installed structural BMPs and provided as an attachment to this certification. For source BMPs with multiple locations, such as storm drain "no dumping" messages, a photo of one location may be provided, with the number of locations provided in the description, when appropriate. This photograph log shall be included with the project's O&M Plan.

Exhibit 7.7

City of Dana Point
Storm Drain System GIS - Private WQMPs



1	Monarch Bay Plaza	Treatment
2	Valvoline	Treatment
3	Fountains at Sea Bluffs Drive	Source
4	Bal Harbour (Capo by the Sea)	Treatment
5	SCWD Boat Storage Lot	Full Retention
6	Headlands	Treatment
7	Penna Development	Treatment
8	St. Regis Resort	Treatment
9	Mobil Station	Treatment
10	Point Monarch	Treatment
11	Castillo del Mar (Pioneer Builders, Capo 8)	Treatment
12	Gloria Dei Lutheran Church	Biofiltration
13	Capistrano Bay District Access Road/Parking Improvements	Full Retention
14	Faith Lutheran Church	Treatment
15	Monarch Links Golf Course Maintenance	Treatment
16	23482 Seaward Isle (Bergman Residence)	Treatment
17	Ritz Carlton Expansion	Biofiltration
18	41 Monarch Bay Dr. (Stoddard Residence)	Treatment
19	Hotel Village South	Treatment
20	Mixed Use, CETT Investments	Full Retention
21	Advent Group, "The Pointe"	Treatment
22	34202 Del Obispo Doheny Village (old mobile site)	Biofiltration
23	Ocean Del Rey	Treatment
25	Majestic: 24471 Del Prado	Full Retention
26	Gloria Dei Sanctuary	Biofiltration
27	South Shores Church Master Plan Conceptual WQMP	Biofiltration
28	26371 Via Cannon	Biofiltration
29	Seabrook Apartments Clubhouse & Lounge	Biofiltration

Legend

- Approved/Planned WQMPs
- Operational WQMPs
- Salt Creek
- San Juan Creek
- City Boundary

N

WEST COAST CIVIL

PRINTED 2/17/2016

0 625 1,250 2,500 Feet

Total Acres Covered	
Operational	**Approved**
200.63 ac.	**37.03 ac.**

Gravel bag material shall have a mullen burst strength exceeding 2,700 kPa (300 psi) per ASTM D3786 & UV stability exceeding 70% per ASTM D4355. Burlap is not acceptable. Baron Bag or appr equal. Addl. requirements for bags used 6 mos. or longer.

Best Management Practices for Construction Sites

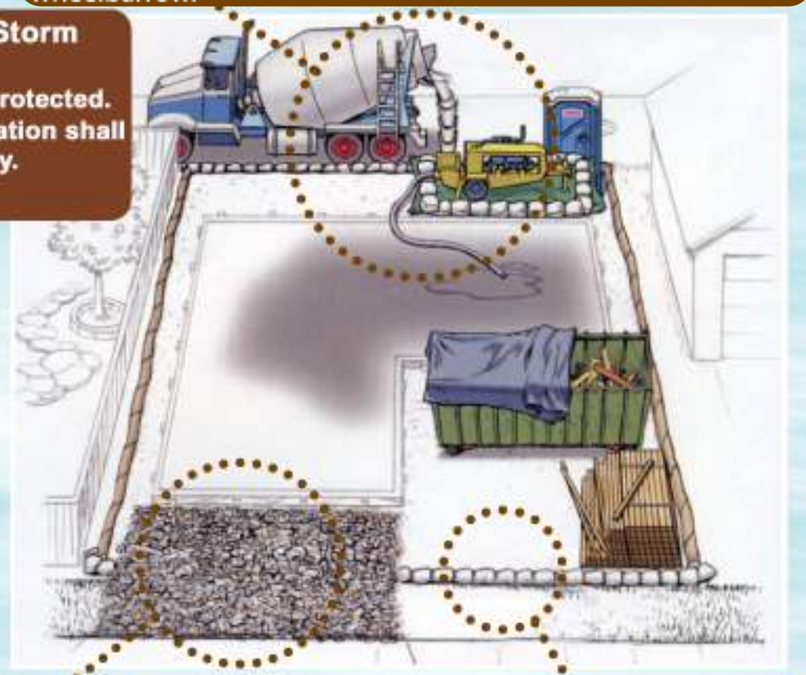
Exhibit 8.1

Earthmoving Equipment
All earthmoving equipment must be stored onsite. Drip pans must be placed under equipment not in use, to contain leaks when observed. Maintenance must be conducted onsite instead of in the street. Any leaks should be cleaned up and repaired immediately.

Concrete Trucks/Pumpers
Pumpers must be surrounded by perimeter controls, such as gravel bags, sandbags, or straw wattles. Waterproof tarps also must be placed beneath concrete pumpers at all times to prevent spills into the street and sidewalk. Residual materials must be cleaned up. Trucks and pumpers are required to clean out in the washout area, not in the street, catch basin or a wheelbarrow.

Dumpsters and Portable Toilets
Dumpsters must be covered with a waterproof covering at the end of each work day and during a rain event. Area around dumpster must be kept clean. Dumpsters must be located onsite unless an Encroachment Permit is obtained for placement in street. Portable toilets must have drip pans and be placed onsite so that any spills do not discharge offsite.

Downstream Storm Drain(s)
Inlets must be protected. Debris accumulation shall be removed daily.



Building Materials/Staging Areas
Construction materials (including landscape materials) must be stored onsite. Building materials must be covered when not in use to prevent runoff caused by wind or rain.

Washout Areas
Disposal of "wet" construction materials should be handled in the washout area. This includes paint, stucco, and concrete. Use a waterproof pit (visqueen or kiddie pool, etc.) to collect and contain liquids and prevent runoff into the street and gutter. The washout area must be checked and maintained daily to ensure compliance. Washout material must be disposed of properly. Leaks must be repaired immediately.

Perimeter Controls
Gravel bags, silt fences and straw wattles are acceptable perimeter controls and must be used to control site run-on and runoff. Avoid running over perimeter controls with vehicles or heavy equipment, as they can damage the materials. Keep extra absorbent materials and/or a wet/dry vacuum onsite to quickly pick up spills. Sites must be checked an maintained daily.

Dirt and Grading
Stockpiled dirt and gravel must be stored onsite and covered. Dust control shall be maintained throughout all phases on construction. During the rainy season (October 1 - April 30) additional gravel, bags, tarps, and visqueen must be stored on site for emergency repair with perimeter control, when not in use.

Tracking Controls
All entrances/exits on the site must have coarse gravel (2" to 6" angular material, as effective) and/or steel shaker plates to prevent offsite sediment tracking. Hand or mechanical sweeping must also be used as needed to clean up any material that gets tracked offsite.

Liquid Storage
Paints, solvents, fuel and other liquids stored onsite must be contained in watertight containers and covered with waterproof tarp. It is illegal for contractors to wash out and dump liquid waste or residue in the street, storm drain or sewer. Use washouts or hazardous material drums to contain liquid waste and residue and dispose of this material

Revised January 2017

CITY OF DANA POINT

BEST MANAGEMENT PRACTICES (BMPs) FOR CONSTRUCTION SITES
MEJORES PRACTICAS DE MANTENIMIENTO EN AREAS DE CONTRUCCION

Date/Time: _____ Address: _____ Contractor: _____

☐ ***PROVIDE EFFECTIVE PERIMETER SEDIMENT CONTROL MEASURES.***

PROPORCIONE MEDIDAS DE COTROL DE EROSION PARA TODA LA AREA DE TRABAJO

☐ ***PROVIDE A WATER REPELLANT COVER (PLASTIC SHEETING) FOR STOCKPILES.***

PROPORCIONE BARRERAS DE RECHASO DE AGUA (SABANAS DE PLASTICO) QUE CUBRAN LA RESERVA DE TIERRA

☐ ***PROVIDE EFFECTIVE INLET PROTECTION FOR THE DOWNSTREAM STORM DRAIN.***

PROPORCIONE PROTECSION PARA LA CORRIENTE DE AGUA QUE CORRE ASIA EL DRENAJE

☐ ***PROVIDE EFFECTIVE TRACKING CONTROLS (SHAKER PLATE AND/OR GRAVEL) AT JOB SITE ENTRANCE TO PREVENT TRACKING MUD AND DEBRIS INTO THE STREET.***

PROPORCIONE UN PLATO AJITADOR EN LA ENTRADA A LA AREA DE TRABAJO PARA PREVENIR EL TRAFICO DE CONSTRUCCION QUE LLEVE LODO Y DESECHO A LAS CALLES

☐ ***NO STREET WASH-DOWN IS ALLOWED. CONSTRUCTION MATERIALS SHALL NOT BE WASHED DOWN OR SWEPT INTO STREET. SWEEP THE STREET WHEN REQUIRED****.*

NO SEPERMITE LAVADO DE CALLES, EQUIPO DE CONSTRUCCION Y MATERIALES QUE SEAN BARRIDOS A ALA CALLE Y DRENAJES (Barra la calle cuando sea necesario).

☐ ***PROVIDE CONSTRUCTION DEBRIS DUMPSTER. JOB SITE MUST BE KEPT CLEAN.***

PONGA DESECHOS DE CONSTRUCCION Y LIMPIEZA EN EL BOTE APROPIADO PARA EL DESECHO (Mantenga su area de trafajo limpia para prebenir la acomulasion de desechos en la calle)

☐ ***PROVIDE A CONTAINED/WATERPROOF CONSTRUCTION WASH-OUT AREA.*** *(Wash out area for concrete and mortar mixer clean up. Do not wash out any materials into street.)*

PROPORCIONE MEDIDAS DE PREVENSION Y RETENIMIENTO DE DESECHO DE AGUA DE CONSTRUCCION (Lavado de receptor y mescla de cemento. No lave el batidor, carrillas, erraminetas, pompas de batidor de cemento en la calle

☐ ***OBTAIN AN ENCROACHMENT PERMIT FROM CITY PUBLIC WORKS DEPT. (949-248-3509)***

OBTENGA PERMISO DE USO O REPARASION EN CURBAS Y COLADERAS REQUERIDAS POR (SERVICIOS PUBLICOS)

☐ ***DO NOT STORE CONSTRUCTION MATERIALS IN PUBLIC RIGHT OF WAY.***

NO PONGA MATERIAL DE CONSTRUCCION EN VIAS

☐ ***PREVENT LANDSCAPE OVER-WATERING RUNOFF.***

PREVENGA USAR MUCHA AGUA EN LA JARDINERIA

☐ ***LOCATE PORTABLE TOILET ON PRIVATE PROPERTY.***

BANOS PORTATIL SON REQUERIDOS SER PUESTOS EN PROPIEDAD PRIVADA

Failure to comply with the above measures may result in a Stop Work Notice or Citation up to $1,000.
Falta de cumplir con las medidas requeridas relultara en Orden the Paro de Trabajo, Tiquete, y/o Fiansas.

☐ VERBAL WARNING ☐ NOTICE OF NONCOMPLIANCE ☐ STOP WORK ☐ $$ FINE TO FOLLOW

The above BMPs shall be implemented by: _____ Inspector: _____

Exhibit 8.2

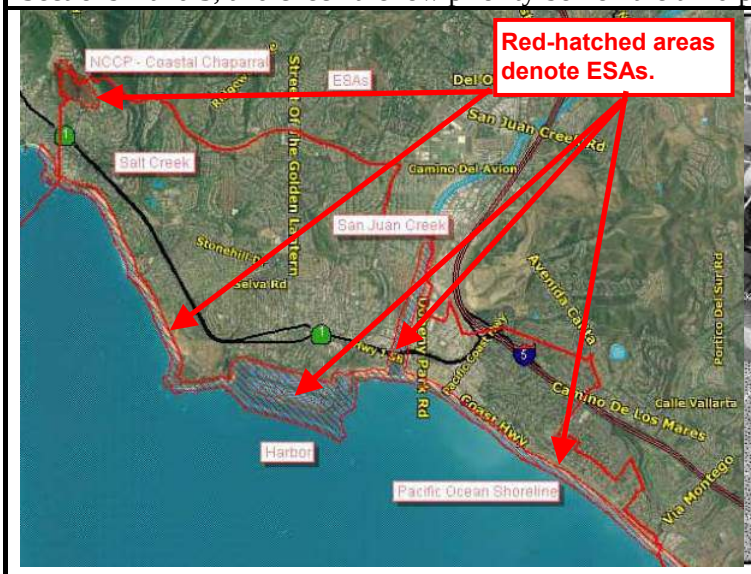
City of Dana Point – Public works & Engineering Services
Runoff Threat Assessment Form

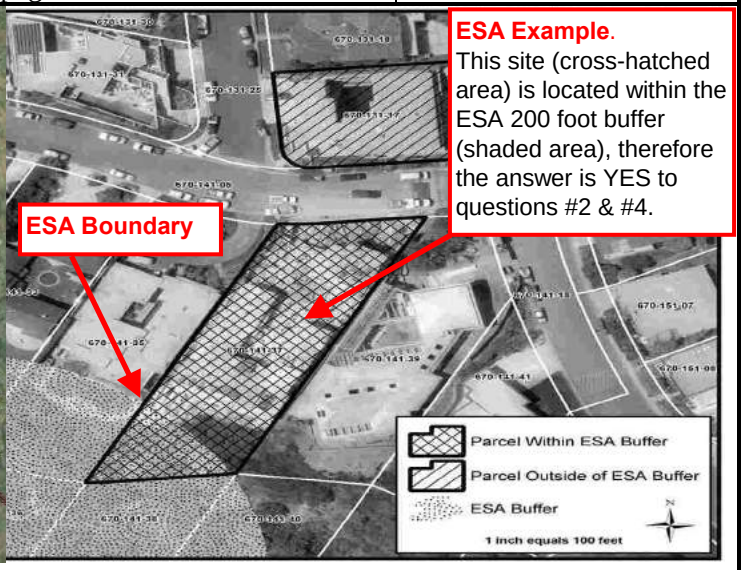
Applicant:	Application Number:
Project Address:	APN:

Applicant: Please complete this form to determine the priority of your project to obtain designated construction BMPs.

SECTION 1: Preliminary Identification of LOW Priority Sites

1. Does the construction site disturb *less than 1 acre* of soil? If **YES**, proceed to question 2. If **NO**, proceed to Section 2. 2. Is the site within 200 ft. or does it discharge directly to an Environmentally Sensitive Area (ESA)? ESAs include the Pacific Ocean shoreline, including Dana Point Harbor, San Juan Creek, Salt Creek, or the NCCP Coastal Chaparral area in NW corner of City (see map & example below). You may need to ask for assistance using City GIS system. If **YES**, proceed to Section 2. If **NO**, your site is automatically **LOW** priority. Please skip Sections 2 and 3, and check the low priority box on the third page of this form.	1. Yes No 2. Yes No





SECTION 2: Identification of Automatically HIGH Priority Sites

3. Is the construction site larger than 50 acres? 4. Is the site 5 acres or more **AND**: 1) Tributary to a 303(d) listed water body impaired for sediment* **OR** 2) is within 200 ft. or discharges directly to a receiving water within an Environmentally Sensitive Area (ESA) (see map and areas above)? If **NO** to **BOTH** questions then the applicant should proceed to Section 3 to evaluate prioritization. If **YES** to **EITHER** question 3 **or** 4, then the applicant should skip Section 3 and automatically check the high priority box on the third page of this form. *NOT APPLICABLE AT THIS TIME. Currently, there are no 303(d) listed water bodies impaired for sediment within the City. However, should a water body impaired for sediment within the City be added to the 303(d) list, the City shall inform the applicant and provide any corresponding information.	3. Yes No 4. Yes No

SECTION 3: Project Prioritization

Prioritization is evaluated by completing items A through D. A point value (1, 2, 3, 4, or 5) is assigned in each step, which is then totaled for a ranking score. Please circle the appropriate point value to the right of each item.

ITEM A: Project Size Construction sites less than 50 acres are ranked based upon the size of the area being developed. Please select the appropriate point value to the right.	1 = 0-10 acres 2 = 11-25 acres 3 = 26-40 acres 4 = 41-49 acres 5 = > 50 acres
ITEM B: Vicinity of the Project to Environmentally Sensitive Area (ESA) Proximity of the construction site to an ESA. *For assistance, refer to the example on page 2 and the ESA Map Book available at the counter.*	1 = > 5,000 feet 2 = 1,001 – 5,000 ft. 3 = 501 – 1,000 ft. 4 = 201 – 500 ft. 5 = < 200 ft.
ITEM C: Maximum Slopes Please indicate the maximum finished slopes within the site.	1 = Slopes 20:1 or flatter 2 = 20:1 < Slope < 5:1 3 = 5:1 < Slope < 3:1 4 = 3:1 < Slope < 2:1 5 = Slopes 2:1 or steeper
ITEM D: Potential to Produce Significant Non-Storm Water Discharges Please rank the project's potential to produce non-storm water discharges.	0 = Zero or low potential of non-storm water discharges 3 = Potential non-storm water discharges from dust control, port-a-potty 5 = Potential non-storm water discharges from dewatering activities or landscaping irrigation.
TOTALS By totaling the scores determined above (items A-D) the potential threat to water quality can be determined. Ranking = A + B + C + D	Ranking total = _____
PRIORITY DETERMINATION If the ranking total is **greater than or equal to 16**, then the project is **high** priority. If the ranking total is **less than 16**, then the project is **medium** priority. Please check the appropriate box to the right.	High Medium Low (From Section I only)

By signing this form, I acknowledge that I have read and understand the statements above, and take complete responsibility for any pollutants that may be generated and discharged to the City Storm Drain System from the construction site described on this form.

☐ **I will prepare & implement the BMP Report (using the BMP Report Template) for my project's specific priority, as determined above.**

_____

Applicant/Owner Name (please print)

_____ _____

Applicant/Owner Name Signature Date

Exhibit 8.3

CITY OF DANA POINT
CONSTRUCTION BMP INSPECTION FORM

INITIAL INSPECTOR: Scott Miller

Permit # _____ – _____ _____
Site Address

Date: _____ Time On Site: _____ minutes Time Reporting: _____ minutes RAIN Yes ☐ NO ☐

Contact on Site / Comment: _____

☐ **INITIAL INSPECTION PASSED**

Construction BMPs appear adequate at this time.
No further action required.

☐ **CORRECTION ACTION REQUIRED** By This Date: _____

Contractor Notified: _____ _____
Name *Phone*

PLEASE NOTIFY CONTRACTOR: Failure to comply with the above measures may result in a Stop Work Notice or Citation up to $1,000 per violation.

- ☐ ***PERIMETER CONTROL***
- ☐ ***INLET PROTECTION***
- ☐ ***CONSTRUCTION ENTRANCE***
- ☐ ***WASHOUT AREA***
- ☐ ***SPRINKLER / IRRIGATION RUNOFF***
- ☐ ***TRASH DUMPSTER***
  - ☐ *Cover* ☐ *Location* ☐ *Litter*
- ☐ ***CONCRETE TRUCK CONTAINMENT***
- ☐ ***STOCKPILE(S) MANAGEMENT:***
  - ☐ *Location* ☐ *Cover*
- ☐ ***TRACKING IN STREET / DISCHARGE***
- ☐ ***STORAGE IN STREET***
- ☐ ***NO ENCROACHMENT PERMIT***
- ☐ ***PORTABLE TOILET***
  - ☐ *Location* ☐ *Containment*
- ☐ ***WASHDOWN / DISCHARGE INTO STREET***
  *****Abate Immediately** Schedule 1hr Follow-up***

COMMENTS: _____

FOLLOW UP INSPECTION CONDUCTED:

Date: _____

Inspector: Scott Miller

Time on Site: _____

Time Reporting: _____

☐ **FOLLOW-UP INSPECTION PASSED**

☐ **ISSUE CITATION**

PLEASE MAKE CORRECTIONS BY THIS DATE: _____

DESCRIBE EACH VIOLATION AS WRITTEN ON CITATION :
1. please number and describe each violation

Form Revised 8-17-15

BMP SITE PHOTOS

PERMIT NO. _____ - _____ ADDRESS: _____

CAPTION - use pulldown

CAPTION - use pulldown

CAPTION - use pulldown

CAPTION - use pulldown

CAPTION - use pulldown

CAPTION - use pulldown

Form Revised 8-17-15

CITY OF DANA POINT

PUBLIC WORKS CONSTRUCTION BMP INSPECTION FORM

ADDITIONAL COMMENTS

Permit # _ _ _ _ _ _ – _ _ _ _

Address: _____

Exhibit 8.4

City of Dana Point 33282 Golden Lantern Dana Point, CA 92629 (949) 248-3584	**URBAN RUNOFF BMP NOTICE** (per 15.10.070(a)(1))	
DATE	TIME AM P.M.	DAY OF WEEK **S - M - T - W - TH - FR - SA - SU**
PROJECT NAME:	ADDRESS/LOCATION:	
PHONE:	NAME/COMPANY OF RESPONSIBLE PARTY:	
TYPE: CONSTRUCTION: PUBLIC PRIVATE RESIDENTIAL COMMERCIAL HOA	WATERSHED: PRIMA DESHECHA/ SEGUNDA SAN JUAN SALT CREEK	

ACTION	**DESCRIPTION OF DEFICIENCY**
❑ VERBAL WARNING ONLY ❑ BMP NOTICE OF NON-COMPLIANCE ❑ STOP WORK /CEASE & DESIST ORDER ❑ OTHER:	

VERBAL WARNING ONLY - You are hereby notified that Best Management Practices (BMPs) are impaired or deficient as described above. Corrective Action required.

BMP NOTICE OF NON-COMPLIANCE - You are hereby notified that Best Management Practices (BMPs) are deficient as described above. Corrective Action required.

STOP WORK ORDER – You are hereby notified to suspend operation on the project tasks or activities described above. Corrective Action Required.

CORRECTIVE ACTION REQUIRED:	**COMMENTS**
❑ Repair or maintain existing BMPs ❑ Implement additional BMPs ❑ Eliminate the Illicit Connection; ❑ Eliminate the Prohibited Discharge ❑ Implement per Permit requirements ❑ Other:	

The above Corrective Action shall be implemented on or before _____ AM PM

Notice Given By:	Notice Acknowledged By:
_____ *City of Dana Point Representative's Signature*	_____ *Responsible Party's Signature*

White (Responsible Party's Copy) – **Pink** (Issuing Office/Dept Copy) – **Yellow** (Water Quality) – Golden Rod (Other)

For more information on Water Quality and Pollution Prevention, please visit
www.ocwatersheds.com or www.danapoint.org

Clean Beaches – Clean Ocean

Exhibit 9.1

BMPs are the key to compliance and a successful mobile business!

The City of Dana Point thanks you for taking the time to read this short brochure to understand the water quality regulations and the Best Management Practices (BMPs) that you can implement to keep you and your business in compliance.

Should you have any questions, please contact the City's Water Quality Engineer at 949-248-3584.

The City of Dana Point— Harboring the Good Life.... and Good Business!

♻ Printed on 100% Post-Consumer Recycled Paper

City of Dana Point
Public Works—Water Quality Division
33282 Golden Lantern
Dana Point, CA 92629

www.danapoint.org

PROJECT Pollution PREVENTION

www.ocwatersheds.com

BEST MANAGEMENT PRACTICES (BMPs) for MOBILE DETAILERS

It's the Law!

City of Dana Point
Public Works– Water Quality Division
Protect Our Earth—Protect Our Ocean

Best Management Practices (BMPs) for Mobile Detailers -

It's the Law!

Mobile vehicle cleaning activities generate pollutants like:

- heavy metals (copper, lead, nickel and zinc);
- hydrocarbons (oil & grease);
- toxic chemicals (solvents, chlorinated compounds, glycols);
- acids and alkalis; and
- sediment.

During vehicle cleaning, these pollutants often drain from the driveway, streets and gutters into the storm drain system, causing pollution of our creeks, beaches and ocean.

Please note that washing or polishing cars in a *public* street is prohibited (DPMC 12.08.024).

When this activity is allowed, the law requires the use of Best Management Practices (BMPs) to prevent this pollution and protect public health. It's also good business.

By law, mobile detailers must prevent all washwater and other materials from cleaning activities from entering storm drains. If not, City fines of up to $1,000 for a first offense may be issued (DPMC 15.10.040), and other regulatory fines can be up to $10,000 per day per offense.

It makes good sense to implement the following measures so that your business is in compliance, while you are demonstrating that you are doing your part to protect our environment.

BEST MANGEMENT PRACTICES (BMPS)

The following **BMPs** shall be implemented to help you maintain compliance with regulations.

✓ Minimize water use.

✓ Use cleaning products as described on their labels and dispose of properly. Even biodegradable products impact our waterways.

✓ Vacuum or shake floor mats into a trash can—not on the street or driveway.

✓ If feasible, wash vehicle on a vegetated or gravel surface where washwater can soak into the ground instead of creating runoff.

If it is not feasible to wash vehicle on a vegetated or gravel surface:

Park vehicle on a leak-proof tarp with berms to capture washwater (see photo below).

OR:

Sweep wash area to remove debris;

Then contain the wash area so washwater does not drain down streets and gutters–use sand bag berms, or wattles; and

Protect downstream storm drain inlets so that washwater does not enter storm drain. Protection must be removed before you leave site.

✓ Contained washwater must be disposed of properly—it cannot drain to streets and storm drains!

Options for Washwater Disposal:

- Direct washwater to a vegetated area with berms or sand bags so that it can soak into ground. *Washwater must completely soak into the vegetation before leaving site!* OR
- Use a "wet-vac" to suck up the water and dispose of as residential wastewater in client's sewer cleanout, utility sink or toilet, etc. Be careful not to discharge heavy debris, hazardous materials or anything that can clog the sink or toilet; OR

- Washwater may be taken off site for proper disposal at your home business location.

Local Places for Contractors to Purchase BMPs (sand bags, wattles, etc.)

Saddleback Sandbags:
1-800-286-7263
20712 Indian Ocean, Lake Forest

White Cap Industries:
949-493-9448
33061 Camino Capistrano,
San Juan Capistrano

Ganahl Lumber:
949-496-5765
34162 Doheny Park Road, Dana Point

Sepulveda Building Materials:
949-347-2100
28092 Forbes Road, Laguna Niguel

Exhibit 9.2

IC24. DISPOSAL OF WASTEWATER GENERATED BY MOBILE BUSINESSES & OUTDOOR ACTIVITIES

Best Management Practices (BMPs)

A BMP is a technique, measure or structural control that is used for a given set of conditions to improve the quality of the stormwater runoff in a cost effective manner.[1] The minimum required BMPs for this activity are outlined in the box to the right. Implementation of pollution prevention/good housekeeping measures may reduce or eliminate the need to implement other more costly or complicated procedures. Proper employee training is key to the success of BMP implementation.

MINIMUM BEST MANAGEMENT PRACTICES

Pollution Prevention/Good Housekeeping

- Dispose of wastewater according to the instructions below. No wastewater shall be disposed of into the storm drain system.

Training

- Train employees on these BMPs, storm water discharge prohibitions, and wastewater discharge requirements.
- Provide on-going employee training in pollution prevention.

The BMPs outlined in this fact sheet target the following pollutants:

Targeted Constituents	
Sediment	x
Nutrients	x
Floatable Materials	x
Metals	x
Bacteria	x
Oil & Grease	x
Toxic Organic	x
Pesticides	x
Oxygen Demanding	x

Purpose of this BMP:

Orange County cities and the County of Orange are mandated under NPDES Permits issued by the California Regional Water Quality Control Boards to prohibit the discharge of pollutants and non-storm water runoff into the storm drain system. Therefore, untreated wastewater (including wastewater from mobile detailing, pressure washing, steam cleaning, carpet cleaning, or similar activities) shall not be discharged to the storm drain system.

In an effort to help businesses comply with the NPDES Permit, the cities of Orange County, County of Orange, South Orange County Wastewater Authority, Orange County Sanitation District, and Irvine Ranch Water District have developed the following best management practices (BMPs) for the proper disposal of wastewater generated by mobile business operations and outdoor activities.

If you have specific questions regarding any of the BMPs herein, please call your local sewering agency or your City's NPDES Coordinator.

[1] EPA " *Preliminary Data Summary of Urban Stormwater Best Management Practices"*

1. General Best Management Practices (BMPs) and Preparation of Work Area

What should I do prior to conducting a job?

The BMPs presented below are intended to help you comply with local and state regulations that prohibit wasteater from entering the storm drain system. The following BMPs must be followed by all mobile businesses or outdoor activities of a fixed business that generate wastewater, regardless of the type of surface to be cleaned or cleaning operation to be performed:

- Evaluate the chemicals and compounds used for cleaning and reduce or eliminate the use of those that contain solvents, heavy metals, high levels of phosphates, or very high/very low pH that exceeds the local sewering agency requirements.

- Walk through the area where the cleaning will occur prior to the start of the job and identify all area drains, yard drains, and catch basins where wastewater could potentially enter the storm drain system.

- Block/seal off identified drains or catch basins using sand bags, plugs, rubber mats, or temporary berms.

- Collect all trash and debris from the project area and place them in a trash bin for disposal.

- Sweep all surface areas prior to cleaning to minimize the amount of suspended solids, soil, and grit in wastewater.

- Identify the wastewater disposal option that will be used. Whether you are discharging to landscaping or the sanitary sewer, it is necessary that you meet all the requirements identified below.

- Conduct mobile washing in accordance with all operating instructions provided by the equipment supplier. Maintain equipment in good working order and routinely check and test all safety features.

What methods can be used to collect wastewater at a site?

There is no specific containment method that must be used for wastewater collection/diversion. However, the system must be adequately designed so that the wastewater does not flow into an on-site or off-site storm drain inlet. All mobile and existing businesses should use one of the following methods, regardless of the surface to be cleaned or the type of cleaning operation to be performed:

- Portable containment areas can be made from waterproof tarps, heavy-duty plastic, or rubber matting equipped with berms to prevent wastewater from running into storm drain inlets or discharge off-site. Materials that can be used for berms include sand bags or water-filled tubing. Whatever containment material is used, it must seal tightly to the ground so that no wastewater can pass under or over the berms.

- When power washing smaller pieces of equipment, containment devices to use may include portable vinyl swimming pools, plastic 55-gallon drums on casters, and flat metal or plastic containment pads.

- Depending on the volume of wastewater generated, it may be necessary to use a pump system, which may range in size from a wet-dry vacuum to a sump pump. A natural basin from which to pump can also be set up by establishing a slightly sloped containment area.

- Stationary or more permanent containment areas can be constructed with cement. Berms and pump systems may be used to contain wastewater and divert it to a holding tank.

- Commercial wastewater collection systems are also available for power washing. These systems can range from portable wash pits to self-contained water recycling systems. A list of companies selling this type of equipment can usually be found in the telephone book under "Pressure Washing Services and Equipment".

- Storm drain inlet covers can be made of an impermeable barrier such as a heavy-duty vinyl or plastic secured in place with materials such as concrete blocks, gravel bags, or sand bags. Storm drain inlet covers may also be available though commercial vendors.

Note: Blocking storm drain catch basin inlets in the public right-of-way (i.e. public street, or other publicly owned facility) is prohibited as a method of containment, unless expressly permitted by the municipality typically through an encroachment permit process. Wastewater should be contained on-site prior to entering the public right-of-way. Contact the local municipality for more information.

2. Wastewater Disposal Options

How can I dispose of my wastewater?

Wastewater is not allowed in the storm drain or street. However, the wastewater may be discharged to landscaping or the sanitary sewer, or it may be picked up and disposed of by a waste hauler. Please note that if you are unsure of the types of pollutants in the wastewater, laboratory analysis may be required to establish the proper disposal method.

Choose one of the three wastewater disposal options listed below based upon the following conditions:

Option 1: Discharge Wastewater to a Landscaped Area

The wastewater must meet the following requirements if discharging to landscaping:

- The pH must be between 6.5 and 8.5. This can be checked quickly and easily through the use of pH paper test strips.

- The wastewater should not contain large volumes or concentrations of:

    - Toxic materials.
    - Degreasers.
    - Pollutants that may create a fire or explosion hazard (e.g., gasoline, diesel).
    - Solid or viscous pollutants in amounts sufficient to cause obstruction or blockage of flow.
    - Petroleum oil, or other products of mineral oil origin.
    - Paint.

  Prior to surface washing, you must exercise any reasonable means to eliminate large volumes or concentrations of the above listed pollutants. Common methods to eliminate standing pools of pollutants include the placement of absorbent to adsorb the pollutant, dry-sweeping the absorbent, and disposing of the absorbent properly.

- In addition, wastewater from cleaning food-related vehicles or areas, vehicle exteriors or engines, and buildings with lead- or mercury-based paint should not be discharged to landscaping.

- Filter the wastewater if it contains debris, fibers, or other suspended solids.

- Ensure that the wastewater is fully contained within the landscaped area and will fully infiltrate into the ground prior to leaving the job site.

Option 2: Discharge Wastewater to the Sanitary Sewer

The wastewater must comply with the following conditions if disposed of into the sanitary sewer system:

- The wastewater temperature must be less than 140°F (60°C).

- The pH must be between 6.0 and 12.0. This can be checked quickly and easily through the use of pH paper test strips. Adjust the wastewater to a pH that is between 6.0 and 12.0. Dilution is not an effective or acceptable pretreatment.

- The wastewater quality must comply with the local sanitary sewer district's discharge limits and requirements. The wastewater should not contain large volumes or concentrations of:

    - Pollutants that may create a fire or explosion hazard (e.g., gasoline, diesel).
    - Solid or viscous pollutants in amounts sufficient to cause obstruction or blockage of flow.
    - Petroleum oil, non-biodegradable cutting oil, or other products of mineral oil origin.
    - Oil based paint.

    Prior to surface washing, you must exercise any reasonable means to eliminate large volumes or concentrations of the above listed pollutants. Common methods to eliminate standing pools of pollutants include the placement of absorbent to adsorb the pollutant, dry-sweeping the absorbent, and disposing of the absorbent properly.

- No wastewater shall be discharged into any publicly owned sewer manholes without the sewer agency's written authorization.

- Filter the wastewater if it contains debris, fibers, or other suspended solids.

- If chemicals (e.g., solvents or acids) are used during the cleaning process, additional precautions may be needed. Contact your local sanitation district to learn if wastewater containing these chemicals requires pretreatment before discharge to the sanitary sewer or if it needs to be treated as hazardous waste.

- Ensure that the wastewater is released at a flow rate and/or concentration, which will not cause problems, pass through, or interference with the sewerage facilities. Generally, if you are using a privately owned cleanout, sink, toilet, or floor drain at a client's property, and the flow does not backup, the flow amount will not cause problems, pass through, or interference with the sewerage facilities.

- Utilize an approved discharge point such as:

    - Privately owned cleanout (or sink, toilet or floor drain), oil/water separator, or below ground clarifier at the client's property where the wash water is generated;
    - Privately owned industrial sewer connection at the client's property where the wash water is generated;
    - Waste hauler station at sanitary sewer facility; and

- Any other disposal points approved by the sanitary sewer facility.

- Maintain a logbook of all discharges.

Option 3: Dispose of Wastewater Using a Professional Hazardous Waste Hauler

Wastewater that can be characterized in any of the following ways must be disposed of using a hazardous waste hauler:

- Is corrosive (as indicated by a pH value of less than 5.5) or caustic (as indicated by a pH value of greater than 10.0).

- Contains a pollutant that may create a fire or explosion hazard (e.g., gasoline, diesel fuel).

- Contains solid or viscous pollutants in amounts sufficient to cause obstruction or blockage of flow.

- Contains petroleum oil, non-biodegradable cutting oil, or other products of mineral oil origin.

- Contains other potential hazardous wastes. Examples of other potential hazardous wastes include:

    - Wastewater generated from power washing old paint off a building. Paint chips need to be collected, evaluated, and disposed of properly. Paint chips cannot be left on the ground at the job site. Old paint stripped off commercial buildings may contain metals (e.g., lead, chromium, cadmium, and mercury), causing it to be a regulated hazardous waste.
    - Wastewater used in conjunction with certain solvents and degreasing agents, which may cause the wastewater to be classified as a listed or characteristic hazardous waste.

You must comply with the following conditions if a hazardous waste hauler is used:

- Ensure that the waste hauler is certified by the appropriate sanitary sewering agency and the Orange County Health Care Agency, is Hazardous Waste DOT certified, and is complying with applicable discharge regulations, which may include obtaining necessary permits and conducting water quality monitoring requirements. Please contact the Orange County Health Care Agency and/or your local fire department for specific requirements.

- Identify the wastes involved and determine if a hazardous waste has been generated.

- Maintain a logbook of all discharges and hazardous waste manifests, if applicable.

For additional information contact:

County of Orange/ OC Watersheds
Main: (714) 955-0600
24 hr Water Pollution Hotline: 1-877-89-SPILL
or visit our website at www.ocwatersheds.com

CITY OF DANA POINT WATER QUALITY PROGRAM

Commercial & Industrial Business

POLLUTION PREVENTION BMP INSPECTION FORM

www.danapoint.org, City contact: Lisa Zawaski: 949-248-3584, lzawaski@danapoint.org

BUSINESS NAME: _____ PHONE: _____

ADDRESS: _____ CONTACT PERSON: _____

EMAIL: _____ DESCRIPTION OF BUSINESS: _____

DATE OF INSPECTION: _____ DATE OF FOLLOW- UP INSPECTION: (if needed) _____

SITE / DRAINAGE: ☐ DEFICIENCY: _____

Site generally clean, free of litter, no ponding water? ☐ Yes ☐ No

Site drainage: ☐ On-site inlet/storm drain system, Note general location/condition: _____ Photo(s)

Is inlet labeled? ☐ Yes ☐ No (suggested labeling) stencil provided to borrow: ☐ Yes (note: contact Lisa to return stencil)

☐ Sheet flow to right-of-way

☐ Site drain system to curb core

Evidence of discharges or illicit connections (stains, pipes, etc.)? ☐ Yes ☐ No ☐ Active discharge or illicit connection observed & reported to City

MATERIALS STORAGE & WASTE DISPOSAL AREA: ☐ DEFICIENCY: _____

Trash enclosure area clean, free of litter? ☐ Yes ☐ No _____

Trash bin good condition and non-leaking? ☐ Yes ☐ No

Trash area shared by more than 1 business? ☐ Yes ☐ No If yes, Property contact/phone:

Is anything stored outdoors? ☐ Yes ☐ No If yes, what and where?

If outdoor storage, are containers properly stored with lids, labels and secondary containment? ☐ Yes ☐ No

BUSINESS ACTIVITIES: ☐ DEFICIENCY: _____

Is powerwashing (or other wet wash method) conducted at the site? ☐ Yes ☐ No

If Yes, is washwater contained and properly disposed so that it does not enter storm drain? ☐ Yes ☐ No

Method of washwater containment & disposal: ☐ berm, wet vac to sewer ☐ closed-loop system equipment

☐ berm, contractor haul off site ☐ other: _____

Are Loading/Unloading areas clean? ☐ Yes ☐ No

Are there other activities that occur outdoors? ☐ Yes ☐ No If Yes, describe: _____

Are BMPs in place for other activities to prevent pollutants from discharging? ☐ Yes ☐ No Describe: _____

_____

PROHIBITED RUNOFF: ☐ DEFICIENCY: _____

Are there landscaped areas with automatic sprinklers?: ☐ Yes ☐ No If Yes, was there evidence of runoff during inspection? ☐ Yes ☐ No

If Yes, is the sprinkler system monitored and adjusted to prevent runoff? ☐ Yes ☐ No

Is there a hose or spigot onsite? ☐ Yes ☐ No If yes, what is the hose used for? _____

If Yes, do staff understand that hosing into storm drain, streets, and gutters is prohibited? ☐ Yes ☐ No

If hose is used, are BMPs implemented to prevent runoff from entering storm drain? ☐ Yes ☐ No, Describe: _____

_____

SPILL RESPONSE: ☐ DEFICIENCY: _____

Spill clean-up materials available & easily accessible? ☐ Yes ☐ No Location: _____

Person in charge aware of emergency # for sewer and other spills? ☐ Yes ☐ No Water District (circle): SCWD: 949-499-4555

MNWD: 949-831-2500

OC Water Pollution Hotline: 1-877-89-SPILL (77455)

EMPLOYEE WATER QUALITY AWARENESS / TRAINING: (check all that apply) ☐ DEFICIENCY: _____

☐ Poster visible & legible ☐ Brochures provided during inspection ☐ Training program/sign-in sheet shown ☐ Employees appear aware of rules

CORRECTIVE ACTIONS / ADDITIONAL COMMENTS:

1 _____

2 _____

3 _____

4 _____

Based on this inspection, this site appears to have a high potential to contribute to the following High Priority Water Quality Conditions (HPWQCs) per WQIP:

☐ Pathogens (human sources of bacteria) ☐ Non-stormwater Discharges ☐ This site does not appear to have a high potential to contribute.

PERSON ON SITE DURING INSPECTION SIGNATURE:

INSPECTOR'S SIGNATURE: ☐ PHOTOS TAKEN

CITY OF DANA POINT WATER QUALITY PROGRAM

Food Service Establishments (FSEs)

POLLUTION PREVENTION BMP INSPECTION FORM

www.danapoint.org, City contact: Lisa Zawaski: 949-248-3584, lzawaski@danapoint.org

BUSINESS NAME: _____ PHONE: _____

ADDRESS: _____

CONTACT PERSON: _____ EMAIL: _____

DATE OF INSPECTION: _____ DATE OF FOLLOW- UP INSPECTION: (if needed) _____

SITE / DRAINAGE: ☐ DEFICIENCY: _____

Site generally clean, free of litter, no ponding water? ☐ Yes ☐ No

Site drainage: ☐ On-site inlet/storm drain system, Note general location/condition: _____ Photo(s)

Is inlet labeled? ☐ Yes ☐ No (suggested labeling) stencil provided to borrow: ☐ Yes (note: contact Lisa to return stencil)

☐ Sheet flow to right-of-way

☐ Site drain system to curb core

Evidence of discharges or illicit connections (stains, pipes, etc.)? ☐ Yes ☐ No ☐ Active discharge or illicit connection observed & reported to City

WASTE STORAGE & WASTE DISPOSAL AREA: ☐ DEFICIENCY: _____

Trash enclosure area clean, free of litter? ☐ Yes ☐ No

Trash bin good condition and non-leaking? ☐ Yes ☐ No

Trash area shared by more than 1 business? ☐ Yes ☐ No If yes, Property contact/phone:

Used kitchen grease storage location? ☐ Indoor ☐ Outdoor Location: _____

Grease storage container clean and non-leaking? ☐ Yes ☐ No Self-contained system? (brand): ☐ Yes ☐ No

Name of used kitchen grease hauler, if available: _____

RESTAURANT ACTIVITIES: ☐ DEFICIENCY: _____

Is powerwashing (or other wet wash method) conducted at the site? ☐ Yes ☐ No

If Yes, is washwater contained and properly disposed so that it does not enter storm drain? ☐ Yes ☐ No

Method of washwater containment & disposal: ☐ berm, wet vac to sewer ☐ closed-loop system equipment

☐ berm, contractor haul off site ☐ other: _____

Who does the powerwashing? ☐ In-house staff ☐ Contractor, Name of Contractor: _____

Are Loading/Unloading areas clean? ☐ Yes ☐ No

Where are mats washed? ☐ Designated outdoor area (only allowed if connected to sanitary sewer) ☐ indoor mop sink w/ signage

☐ sent off-site to vendor ☐ kitchen mats are not used

Are employees aware that mats and other equipment cannot be washed outdoors if washwater can enter stormdrains? ☐ Yes ☐ No

ROOF BMPS: ☐ DEFICIENCY: _____

Grease absorbent / diaper / secondary containment pan maintained? ☐ Yes ☐ No Roof clean? ☐ Yes ☐ No

PROHIBITED RUNOFF: ☐ DEFICIENCY: _____

Are there landscaped areas with automatic sprinklers?: ☐ Yes ☐ No If Yes, was there evidence of runoff during inspection? ☐ Yes ☐ No

If Yes, is the sprinkler system monitored and adjusted to prevent runoff? ☐ Yes ☐ No

Is there a hose or spigot onsite? ☐ Yes ☐ No If yes, what is the hose used for? _____

If Yes, do staff understand that hosing into storm drain, streets, and gutters is prohibited? ☐ Yes ☐ No

If hose is used, are BMPs implemented to prevent runoff from entering storm drain? ☐ Yes ☐ No, Describe: _____

_____

SPILL RESPONSE: ☐ DEFICIENCY: _____

Spill clean-up materials available & easily accessible? ☐ Yes ☐ No Location: _____

Person in charge aware of emergency # for sewer and other spills? ☐ Yes ☐ No Water District (circle): SCWD: 949-499-4555

OC Water Pollution Hotline: 1-877-89-SPILL (77455) MNWD: 949-831-2500

EMPLOYEE WATER QUALITY AWARENESS / TRAINING: (check all that apply) ☐ DEFICIENCY: _____

☐ Poster visible & legible ☐ Brochures provided during inspection ☐ Training program/sign-in sheet shown ☐ Employees appear aware of rules

CORRECTIVE ACTIONS / ADDITIONAL COMMENTS:

1 _____

2 _____

3 _____

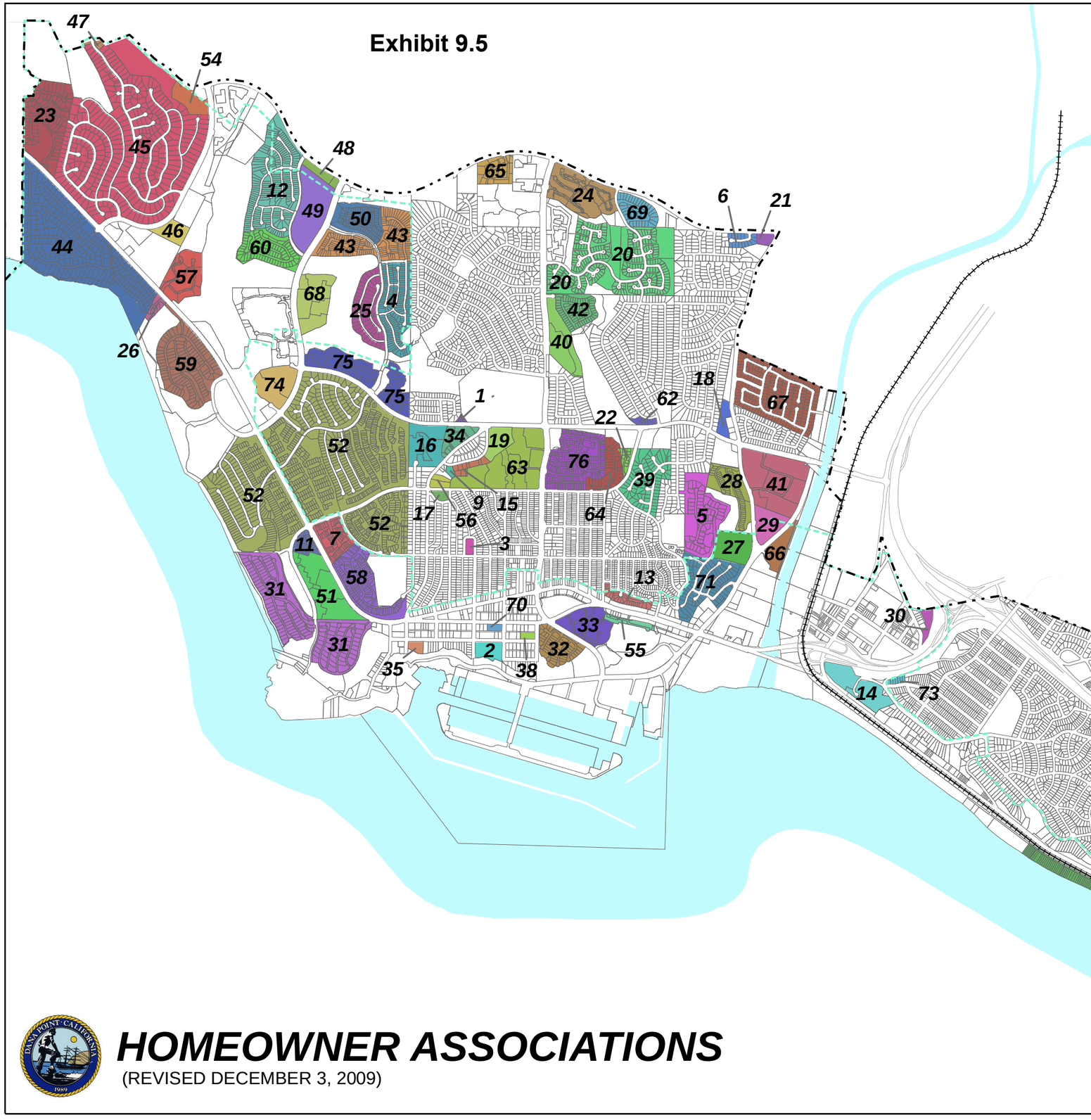
Based on this inspection, this site appears to have a high potential to contribute to the following High Priority Water Quality Conditions (HPWQCs) per WQIP:

☐ Pathogens (human sources of bacteria) ☐ Non-stormwater Discharges ☐ This site does not appear to have a high potential to contribute.

PERSON ON SITE DURING INSPECTION SIGNATURE:

INSPECTOR'S SIGNATURE: ☐ PHOTOS TAKEN

Exhibit 9.5



1 5 LANTERNS H.O.A.
2 ADMIRALTY DANA POINT
3 AMBER LANTERN H.O.A.
4 ANTIGUA H.O.A. OF MONARCH BEACH
5 BAL HARBOUR
6 BRIGHTON COURT
7 CAPE COVE H.O.A.
8 CAPISTRANO BAY DISTRICT
9 CASA DANA H.O.A.
10 CASTILLO DEL MAR H.O.A.
11 CHELSEA POINTE H.O.A.
12 CORNICHE SUR MER ASSOCIATION
13 CRYSTAL COVE H.O.A.
14 DANA BLUFFS H.O.A.
15 DANA BY THE SEA
16 DANA LIGHT H.O.A.
17 DANA POINT SEAVIEW
18 DANA TERRACE H.O.A.
19 DANA VISTA H.O.A.
20 DANA WOODS COMMUNITY ASSOCIATION
21 DEL AVION GARDENS H.O.A.
22 DIAMOND RIDGE COURT H.O.A.
23 EMERALD RIDGE H.O.A.
24 ENCANTAMAR H.O.A.
25 ESTATES AT MONARCH BEACH H.O.A.
26 ESTATES AT MONARCH COVE COMMUNITY ASSOCIATION
27 FOUNTAINS AT SEABLUFF
28 HAMPTON HILL HOA
29 HARBOR CREEK HOA
30 HARBOR WALK H.O.A.
31 HEADLANDS
32 LANTERN BAY ESTATES
33 LANTERN BAY VILLAS
34 LANTERN HILL COMMUNITY ASSOCIATION
35 LAS MARIANNAS
36 MARBELLA RAQUET CLUB
37 MARE ALTURA H.O.A
38 MARINA VISTA OWNERS ASSOCIATION
39 MARINITA H.O.A.
40 MARINITA TOWNHOMES H.O.A.
41 MARLBOROUGH SEASIDE VILLAS
42 MARLUNA HOMEOWNERS ASSOCIATION
43 MARQUESAS AT MONARCH BEACH
44 MONARCH BAY HOA
45 MONARCH BAY TERRACE H.O.A.
46 MONARCH BAY VILLAS H.O.A.
47 MONARCH BEACH POINT
48 MONARCH HILLS CONDO. ASSOC.
49 MONARCH HILLS H.O.A
50 MONTEGO AT MONARCH BEACH
51 NIGUEL BEACH TERRACE H.O.A.
52 NIGUEL SHORES COMMUNITY ASSOCIATION
53 OLD MILL POND H.O.A.
54 PACIFIC ISLAND VILLAS H.O.A.
55 PACIFIC TERRACE H.O.A.
56 POINT VISTA H.O.A.
57 POINTE MONARCH
58 REGATTA HOMES H.O.A.
59 RITZ COVE H.O.A.
60 RITZ POINTE H.O.A
61 SARATOGA COVE
62 SEA BRIGHT COVE
63 SEA RIDGE CONDO ASSOC.
64 SELVA HILLS H.O.A.
65 SILVER TIDE AT BEAR BRAND H.O.A.
66 SPINNAKER RUN COMMUNITY ASSOC.
67 STRATFORD AT THE PACIFIC H.O.A.
68 TENNIS VILLAS AT MONARCH BEACH
69 TERRAZA DEL MAR H.O.A
70 THE MERIDIAN
71 THE VILLAGE AT DANA POINT H.O.A.
72 VIA DE DAUM H.O.A.
73 VIA VERDE H.O.A.
74 VILLAS AT MONARCH BEACH APARTMENTS
75 VILLAS AT MONARCH BEACH H.O.A.
76 WATERFORD POINTE H.O.A.

City Boundary
Coastal Zone Boundary
Railroad

0 0.125 0.25 0.5 Miles
HOA_Map_12_03_09.mxd

HOMEOWNER ASSOCIATIONS

(REVISED DECEMBER 3, 2009)

Exhibit 9.6

AUTOMOBILE REPAIR AND MAINTENANCE

Residential Activity Stormwater Runoff BMP Fact Sheet

R-1

Targeted Constituents	
Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	
Pesticides	
Oil and Grease	✓
Organics	✓

"Stormwater Runoff Best Management Practices (BMPs)" – recommended activities, procedures, and structural practices designed to prevent or reduce pollutants in stormwater runoff discharges. BMPs for residential activities include, but are not limited to: 1) scheduling of activities around storm events, 2) proper use, handling, storage, and disposal of materials, and 3) preventing non-stormwater discharges.

Minimum Required BMPs

Maintenance Activities

- Perform repairs and maintenance outdoors only when the weather is dry.
- Use drip pans, plastic sheeting, etc. to capture spills, leaks, and waste material. Perform automobile maintenance and repairs over impervious surfaces, such as concrete, so spills, leaks, and waste material can be readily cleaned up.
- Minimize the use of water in daily activities and/or for cleaning.

Material Storage

- Store hazardous materials and wastes (including, but not limited to, fluids, solvents, parts containing fluids, and batteries) indoors, under cover, or in watertight containers.
- If storing vehicles, drain and properly dispose of any fluids from inoperable vehicles.

Spills and Leaks

- Have dry cleanup materials, such as absorbent, readily available.
- Immediately clean up and contain any spills. Dispose of all waste and adsorbent materials properly.
- Repair vehicle leaks promptly.

Waste Management

- Dispose of cleaning solvents at a designated hazardous waste center.
- Recycle used oil and antifreeze by taking them to service stations and other recycling centers. Never pour oil in storm drains or other areas.

ADDITIONAL RECOMMENDED BMPs

1. Perform automobile repair and maintenance activities under a covered area or inside a garage.
2. If using a chemical degreaser, use a product that is not solvent-based.
3. To find locations where you can recycle your used oil filters and automobile fluids for free, please check http://ocwatersheds.com/publiced/usedoil or www.earth911.com.
4. Dispose of all hazardous waste properly. For information on the City's curbside household hazardous waste collection program or to find a facility near you, check www.danapoint.org/department/public-works-engineering/solid-waste-recycling

The City of Dana Point thanks you for taking the time to read this short brochure to understand the water quality rules and tips to keep your car clean while preventing impacts to the creeks, beaches and ocean.

Should you have any questions, please contact the City's Water Quality Engineer at 949-248-3584.

The City of Dana Point
Harboring the Good Life

Printed on 100% Post-Consumer Recycled Paper

City of Dana Point
Public Works—Water Quality Division
33282 Golden Lantern
Dana Point, CA 92629

www.danapoint.org

PROJECT Pollution PREVENTION www.ocwatersheds.com

Car Washing Rules

Requirements to prevent water pollution & conserve water.

DANA POINT · CALIFORNIA 1989

City of Dana Point
Public Works– Water Quality Division
Protect Our Earth—Protect Our Ocean
March 2017

Frequently Asked Questions

What Are My Options?

- Go to a commercial car wash that recycles water.
- Use a waterless cleaning product.
- Hire a mobile detailer that provides own source of water & has the proper equipment to contain and dispose of wash water.
- "Do-It–Yourself", following the guidelines provided on the next page.

Why is Car Washing A Concern?

Water supplies remain a concern and water conservation measures are prudent.

Car washing activities generate pollutants, such as heavy metals, bacteria soaps and detergents, oil & grease, toxic chemicals, acids and alkalis, and sediment & also result in a non-stormwater discharge.

Without pollution prevention measures, these pollutants drain from the driveway, streets and gutters into the storm drain system, causing pollution of our creeks, beaches and ocean.

The rules are in effect to prevent water pollution of our creeks, beaches and ocean, which are vital to our quality of life & our economy & to help prevent water waste.

So, Is It Legal to Wash My Car?

Yes, it is legal to wash your car. However, you must take certain precautions to save water, prevent water pollution and comply with State law.

What Can Happen If I Don't Follow the Rules?

Fines of up to $1,000 may be issued (DPMC 15.10.040) for violations! Make sure you are in compliance by following the guidelines described in this brochure.

How Can I "Do-It-Myself" ?

The following guidelines will help you maintain compliance with regulations.

- ✓ Check with current water use guidelines to make sure car washing is allowed.
- ✓ Minimize water use. You must use a bucket and hose with an automatic shut off nozzle.
- ✓ Use cleaning products as described on their labels and dispose of them properly. Even "biodegradable" products adversely impact our waterways.
- ✓ Vacuum or shake floor mats into a trash can—not on the street or driveway.
- ✓ Wash the vehicle on a vegetated or gravel surface where wash water can soak into the ground without creating runoff; OR

  Use sand bags or another device to create a berm to contain/direct/divert the wash water. It can then be sucked up with a wet vac for disposal in a utility sink, sewer clean out, or toilet or directed to a landscaped area to be absorbed.

SPECIAL NOTES:

- Please ensure that wash water completely soaks into the vegetation/ground to alleviate vector concerns and prevent unintentional runoff.

REMEMBER!

Dirty, soapy water running into the gutter, street or storm drain is considered a violation, even from your driveway!

TIP!

Using a bucket and a hose with an automatic shut off nozzle helps you comply with water conservation rules, reduces water waste and also saves you money!

TIP! Local Places for Sand Bags:

Ganahl Lumber:
949-496-5765
Saddleback Sandbags:
1-800-286-7263
Sepulveda Building Materials:
949-347-2100
White Cap Industries:
949-493-9448

TIP!

A wet vac can be used to collect the wash water before it drains off your property. You can then dump the water in a landscaped area or down a utility sink or toilet.

Who makes these Rules?

The San Diego Regional Water Quality Control Board has mandated that the City regulate any discharges to the storm drain system. This includes polluted car wash water and even irrigation runoff! Please refer to Dana Point Municipal Code, Chapter 15, www.danapoint.org/municipalcode.

Water providers, such as South Coast Water District, Moulton Niguel Water District and San Juan Capistrano Utilities are required to implement a water conservation program to address water waste and supply.

AUTOMOBILE PARKING

Residential Activity Stormwater Runoff BMP Fact Sheet

R-3

Targeted Constituents	
Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	
Pesticides	
Oil and Grease	✓
Organics	✓

"Stormwater Runoff Best Management Practices (BMPs)" - recommended activities, procedures, and structural practices designed to prevent or reduce pollutants in stormwater runoff discharges. BMPs for residential activities include, but are not limited to: 1) scheduling of activities around storm events, 2) proper use, handling, storage, and disposal of materials, and 3) preventing non-stormwater discharges.

Minimum Required BMPs

- Before you park on the street, check for signs for designating street sweeping days and times. Street sweeping is a more effective method of removing pollutants when the entire street can be swept.
- Routinely check under your automobile for signs of leaks or drips. If you detect one, use a drip pan or absorbent pad temporarily to catch it and have repairs made as soon as possible.
- Use dry cleaning methods such as kitty litter to absorb leaks that impact pavement. Make sure to sweep up and properly dispose of the material in the trash – never use a hose to wash oil or other stains or absorbent material away.

Additional Recommended BMPs

1. Park under covered areas or inside a garage if possible.
2. Perform routine scheduled vehicle maintenance to minimize fluid leaks and maximize fuel efficiency.
3. Keeping your vehicle clean will not only keep it looking nice, but it will prevent the build-up of dust from engine, brake, and tire wear, keeping harmful pollutants out of the environment when it rains. Please refer to the City's Car Washing rules for more information.

HOME AND GARDEN CARE ACTIVITIES

Residential Activity Stormwater Runoff BMP Fact Sheet

R-4

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	
Metals	
Bacteria	✓
Pesticides	✓
Oil and Grease	
Organics	✓

"Stormwater Runoff Best Management Practices (BMPs)" - recommended activities, procedures, and structural practices designed to prevent or reduce pollutants in stormwater runoff discharges. BMPs for residential activities include, but are not limited to: 1) scheduling of activities around storm events, 2) proper use, handling, storage, and disposal of materials, and 3) preventing non-stormwater discharges.

Minimum Required BMPs

Pesticide and Fertilizer Use

- Apply following the manufacturer's guidance – do not over apply.
- Do not apply right before or on rainy days.
- Consider alternatives to traditional chemical pest control methods, such as Integrated Pest Management Approaches ((plant selection, biological controls, and habitat manipulation). The Master Gardner's of Orange County are a great resource: http://mgorange.ucanr.edu/.

Water Use

- Follow any water use restrictions in effect by water provider.
- Adjust and maintain sprinklers to prevent overspray.
- Minimize the use of water in daily activities.

Chemical Storage

- Store chemicals indoors or under cover, in closed and labeled containers.

Waste Management

- Do not sweep or blow clippings and other green waste out into the street – collect green waste and dispose in the green waste receptacle.
- Dispose of chemicals at a household hazardous waste center.
- Collect grass clippings and other green wastes and dispose of them in your green waste bin.

Waste Management Cont'd.

- Rinse off cement mixers and tools in a contained washout area. Dispose of dried concrete waste in household trash.
- Clean painting equipment in a designated utility sink. Take oil based paint to a household hazardous waste center. Never wash paint or painting equipment into the gutter, street or storm drain.

Pool and Spa Dewatering

- If a pool or spa must be emptied, water must be tested to ensure that residual chlorine levels are less than 0.1 mg/L, the pH is between 6.5 and 8.5, and the water must be free from any unusual coloration prior to discharging to the street. Ensure that the flow is controlled to not cause erosion to any property.
- Pool filter washwater CANNOT be discharged to the street or storm drain and must be contained, collected and disposed of properly.

ADDITIONAL RECOMMENDED BMPs

1. Only purchase the types and amounts of materials needed.
2. Use native and drought tolerant plant species to reduce irrigation demand and the need for fertilizers and pesticides.
3. Use a mulching lawn mower so that grass clippings remain on the lawn and do not have to be collected and disposed of.
4. Compost materials in a designated area within the yard. Properly composted materials can provide nutrients to your plants so that fertilizers may not be needed.
5. Share unused portions of products with neighbors or community programs.
6. Step on your grass. If it springs back when you lift your foot, it doesn't need water. Water your lawn only when it needs it. Set your sprinklers for more days in between watering.
7. Set lawn mower blades one notch higher. Longer grass means less evaporation.
8. Put a layer of mulch, peat moss, or gravel around trees and plants to slow down evaporation.
9. Upgrade to weather-smart irrigation controllers for your sprinkler system. They self-adjust the amount and timing of watering depending on the weather so you don't have to!
10. Don't overwater. Too much water can harm plants – as much if not more – than inadequate water.
11. Don't water the lawn on windy days. Watering in windy conditions can waste up to 300 gallons in one watering.
12. Water during the cool parts of the day. Early morning is better than dusk since it helps prevent the growth of fungus.

PET CARE

Residential Activity Stormwater Runoff BMP Fact Sheet **R-5**

Targeted Constituents	
Sediment	
Nutrients	✓
Trash	
Metals	
Bacteria	✓
Pesticides	✓
Oil and Grease	
Organics	

"Stormwater Runoff Best Management Practices (BMPs)" – recommended activities, procedures, and structural practices designed to prevent or reduce pollutants in stormwater runoff discharges. BMPs for residential activities include, but are not limited to: 1) scheduling of activities around storm events, 2) proper use, handling, storage, and disposal of materials, and 3) preventing non-stormwater discharges.

Minimum Required BMPs

- Pick up pet wastes and throw them away in the trash or flush the waste down a toilet (please do not flush plastic bags down the toilet!). Pet waste should not be thrown in the green waste bin, as special precautions are necessary to safely compost pet waste.
- Bring bags to "scoop the poop" when you go for walks or travel with your pet. Look for trash cans at public parks and other public areas or carry it home with you to throw away.
- At home, avoid hosing down pet waste. Use a scooper or bag to pick it up and throw away.
- Carefully follow instructions for use and proper disposal of flea control products (e.g., shampoo, sprays, or collars). Unwanted products must be disposed in accordance with the City's waste management programs.
- Wash your pet indoors in a bathtub or sink and use non-toxic and biodegradable pet shampoos. If you must bathe your pet outside, wash your pet on the lawn instead of on a paved driveway to prevent the wash water from draining to the streets and storm drains.

ADDITIONAL RECOMMENDED BMPs

1. When possible, have pets professionally groomed.
2. Protect your pet by obtaining required licensing and vaccinations.
   Please refer to the Natural Resources Defense Council Green Paws website for information on how to select the least toxic flea control products: www.simplesteps.org/greenpaws-products.

City of Dana Point
Residential Recycling & Reuse Guide

Need to look up your weekly trash/recycling collection day?

Please search:
My Trash and Recycling Collection Day
at **www.danapoint.org**
to search the weekly service route map.

FREE compost!

As a courtesy to Dana Point residents, **CR&R hosts free* compost giveaway events in April and November.**

*Keep an eye out for your redeemable voucher within your quarterly CR&R invoice.

Rx DISPOSAL

Safe medication drop off is available within the **Dana Point Police Services lobby.**

No appointment is needed for this safe, free and anonymous disposal of prescription and OTC medication.

BULKY ITEMS

If your household utilizes trash/recycle carts, you're entitled to two bulky item pick-up service requests per year (maximum of 4 items per pickup) at your home.

Please call CR&R at 877-728-0446 to schedule this service.

YUCK!

Got dirty and soiled trash/recycle/green waste carts?

CR&R will swap them out for clean ones once per year free of charge.

Please call 877-728-0446 to schedule this service.

CR&R will pick up Household Hazardous Waste (HHW) and E-waste from your front door.

Please call **877-728-0446** to schedule this **FREE SERVICE.**

HHW program refrigerator magnets are available to residents at City Hall or, call 949-248-3571 to have one mailed to your home.

CLEAN UP DAY!

Bulky Item Clean Up Days are held each February, May and October at DHHS and Palisades Elementary School for Dana Point residents.

Donations to Goodwill are accepted and free document shredding services are also available.

Please search: **Bulky Item Clean Up Day** at **www.danapoint.org** for upcoming dates.

Christmas Tree Collection begins the day after Christmas and extends for a two week period through January.

No need to call for special service! CR&R will pick up the trees on your regular collection day.

LEARN how to recycle your food scraps into rich compost by attending a Vermicomposting Workshop held in April, May, June and September of each year.

Dana Point residents are eligible for a $50 voucher good towards the purchase of a composting bin.

Questions?
Please call 949-248-3571

Did You Know that all waste in multi-family residence bins and public trash cans are sorted for recycling after pick up?

Please look for these courtesy signs within your residential bin enclosures.

FLAG RETIREMENT

Do you have a tattered American flag in need of disposal? Please bring your flag to Dana Point City Hall Lobby. Your flag will be given to the VFW for proper retirement of the flag.

OUTDOOR WATER CONSERVATION

Residential Activity Stormwater Runoff BMP Fact Sheet

R-8

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Pesticides	✓
Oil and Grease	✓
Organics	✓

"Non-Stormwater Runoff" – a discharge to the storm drain system from a source other than rain (common sources are sprinklers and hoses). Non-stormwater runoff is generally prohibited from entering the storm drain system and can convey a significant amount of pollutants if not controlled. All runoff which enters the storm drain system will flow untreated, directly into local creeks, lakes, and ocean beaches. Eliminating non-stormwater runoff is a critical objective of federal, state, and local regulations and water conservation is a cost-effective approach. **Irrigation Runoff is prohibited!**

"Stormwater Runoff Best Management Practices (BMPs)" - recommended activities, procedures, and structural practices designed to prevent or reduce pollutants in stormwater runoff discharges. BMPs for residential activities include, but are not limited to: 1) scheduling of activities around storm events, 2) proper use, handling, storage, and disposal of materials, and 3) preventing non-stormwater discharges.

Minimum Required BMPs

- Comply with all applicable water conservation rules and restrictions set forth by water purveyor.
- Eliminate non-stormwater runoff from cleaning activities.
- Sprinkler systems must be adjusted and managed in order to eliminate irrigation overspray and runoff.
- Use a broom instead of a hose to clean driveways and sidewalks…Save 10-15 gallons per minute.
- Repair leaking outdoor faucets and hose bibs…Save 15-20 gallons per day.

OUTDOOR WATER CONSERVATION

Residential Activity Stormwater Runoff BMP Fact Sheet

R-8

Additional Recommended BMPs

1. Before starting cleaning activities, consider using dry methods such as sweeping, vacuuming, or using absorbent material (e.g. cat litter, granular oil absorbent, pads, or rags).
2. If it is necessary to use water, divert the runoff onto landscaping or other permeable soil surfaces.
3. Consider use of automatic rain shut-off and weather-based "smart" controllers for irrigation systems. Check with your local water provider or visit www.bewaterwise.com for more information.
4. Install covers on pools and spas to reduce evaporation…Save 30 gallons per day, depending on square footage.
5. Replace high-water-using trees and plants with California-friendly plants that require about two-thirds less water to thrive than non-native plants.
6. Remind your children not to play with the garden hose. You can save 10 gallons a minute.
7. Allow children to play in the sprinklers only when you're watering the yard.
8. Step on your grass. If it springs back when you lift your foot, it doesn't need water. Water your lawn only when it needs it. Set your sprinklers for more days in between watering. You can save 750 to 1,500 gallons a month.
9. Set lawn mower blades one notch higher. Longer grass means less evaporation. You can save 500 to 1,500 gallons each month.
10. Put a layer of mulch, peat moss, or gravel around trees and plants to slow down evaporation. You can save 750 to 1,500 gallons a month.
11. Upgrade to weather-smart irrigation controllers for your sprinkler system. They self-adjust the amount and timing of watering depending on the weather so you don't have to!
12. Don't overwater. Too much water can harm plants – as much if not more – than inadequate water.
13. Don't water the lawn on windy days. Watering in windy conditions can waste up to 300 gallons in one watering.
14. Water during the cool parts of the day. Early morning is better than dusk since it helps prevent the growth of fungus. You can save 300 gallons a month.

Exhibit 10.1

Model Investigative Guidance
for the
Orange County Illegal Discharges and Illicit Connections Program

DECEMBER 2004

A cooperative project of the County of Orange,
the Orange County Flood Control District, and the cities of Orange County,

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APPENDICES

1.0 INTRODUCTION AND PURPOSE

Section 10 of the Orange County Drainage Area Management Plan (DAMP) includes a comprehensive program for detecting, responding to, investigating and eliminating illegal discharges and illicit connections (ID/IC) in an efficient and timely manner.

The objectives of the ID/IC program are to:

- Establish a program framework for effectively prohibiting and responding to discharges of non-stormwater into the municipal storm drain system;
- Provide an iterative process by which the Permittees can detect, respond to, and eliminate illegal discharges or illicit connections; and
- Provide methods to meet the municipal stormwater permit requirements.

In order to ensure that the Permittees have adequate legal authority to control the discharge of pollutants to the municipal storm drain system, they each adopted a Water Quality Ordinance (Ordinance) and collectively developed a model companion implementation document, the Enforcement Consistency Guide (ECG). The ECG allows for countywide consistency and provides guidance for identifying, documenting, responding to, and enforcing violations of the Ordinance. While the Ordinance and ECG provide the Permittees with the necessary legal authority and guidance for utilizing that authority, the Permittees do not currently have a model guidance document outlining various techniques that can be utilized in order to conduct defensible investigations.

To meet this need, the Model Investigative Guidance Manual (Manual) contained herein has been developed as a reference document for the Authorized Inspectors (Inspectors). This Manual addresses the *investigative portion* of an ID/IC response and identifies various techniques that can be used while investigating incidents including:

- Record Keeping;
- Site Entry;
- Informal Interviews;
- Environmental Sample Collection;
- Photographs;
- Record Reviews;
- Report Writing; and
- Case Development.

The objective of the Manual is to establish general guidelines that may be utilized (based on the Inspector/Responder's professional judgment) so that the procedures followed and information obtained during the investigation is defensible.

The scope of this Manual is limited to the investigation of illegal discharges where a responsible party has been identified. It does not address sewage spills or situations where a responsible party has not been identified. However, model Sewage Spill Response Procedures are presented within Section 10.3 of the DAMP and techniques used for source identification when a responsible party has not been identified are addressed in Section 10.4.1 of the DAMP.

This Manual is intended to provide general guidance for Authorized Inspectors/Spill Responders during an investigation and recognizes that their respective roles and responsibilities will vary among the Permittees. The Permittees may incorporate the Manual as necessary to ensure that it is reflective of their own internal policies and procedures. It is not the intent of this Manual to prescribe policies or procedures for implementing the Permittees' Local Implementation Plans to control illegal discharges/illicit connections.

The Manual is organized as follows:

2.0 AUTHORIZED INSPECTOR ROLES AND RESPONSIBILITIES

The municipal stormwater permits require that the Permittees effectively prohibit non-stormwater discharges from entering the storm drain system. Central to this program is the establishment of adequate legal authority to regulate the discharge of pollutants.

Even though legal authority existed for most pollutant discharges at the inception of the municipal stormwater program (1990), in 1993, the Permittees determined that a Model Water Quality Ordinance should be prepared to provide a more uniform countywide approach and to provide a legal underpinning to the entire stormwater program. This Model Ordinance was developed in 1997 and each Permittee has adopted a largely similar version.

The Model Ordinance defines the *Authorized Inspector* as *the [City Manager, City Administrator, City Engineer, Director of Public Works] and persons designated by and under his/her instruction and supervision, who are assigned to investigate compliance with, detect violations of and/or take actions pursuant to the Ordinance".*

Likewise, the Enforcement Consistency Guide identifies and further defines the roles and responsibilities of the key personnel directly involved with responding to ID/IC complaints.

The two primary roles include:

- **Authorized Inspector –** Each Permittee has designated the Authorized Inspector(s) responsible for enforcing the Ordinance within their jurisdiction

- **Spill Responder –** While these personnel may be the Authorized Inspectors, they are more typically other personnel (such as Fire Department or Orange County Flood Control District) who are trained to respond to, coordinate and oversee the clean up of unknown contaminants or hazardous materials.

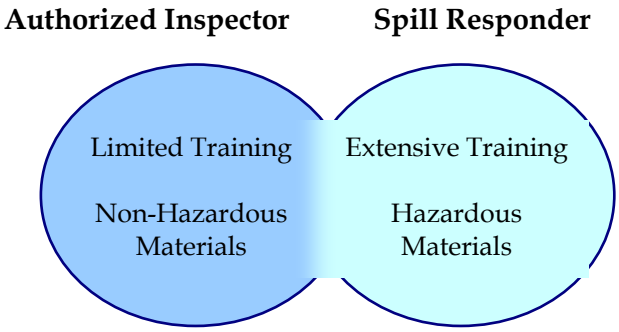
Authorized Inspector Duties
(include, but are not limited to)

- Map discharge points and outlets and collect other data;
- Sample wet and dry weather discharges;
- Conduct compliance inspections including collecting, preserving and documenting evidence;
- Identify locations of Illicit Connections;
- Identify sources of prohibited discharges;
- Review documents and records related to processes and chemicals on-site;
- Identify facilities where a local permit may be appropriate;
- Inspect structural and non-structural BMPs;
- Conduct tests, such as smoke or dye tests or physical inspections;
- Consult with Attorney;
- Issue enforcement orders;
- Consult with fire to identify imminent dangers;
- Issue citations and recommend prosecution

Spill Responder Duties
(include, but are not limited to)

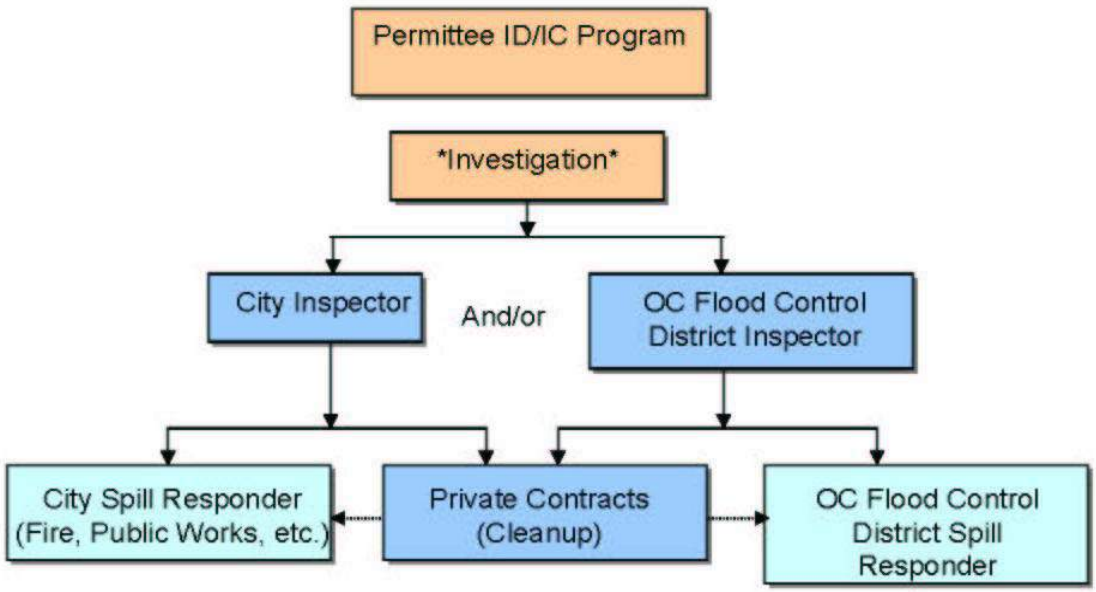
- Document the source of the spill;;
- Identify the responsible party, where possible;
- Establish evidence useful in recovery of spill response costs, where appropriate;
- Assist the Authorized Inspector in evaluating the need for emergency abatement;
- Coordinate activities for spill response with the Orange County Hazardous Materials Strike Force

The differentiation between the Authorized Inspector and Spill Responders is primarily based on the level of training received and the types of materials involved in the incidents.



Since some Permittees utilize Authorized Inspectors to fill both roles and other utilize Authorized Inspectors and Spill Responders, the specific roles and responsibilities vary from Permittee to Permittee. For example, many Inspectors receive assistance from the local Fire Department and/or Orange County Flood Control District staff (if the Permittee has entered into the Water Quality Implementation Agreement) due to their scientific and technical capabilities. **Figure 1-1** below illustrates some of the implementation options that are utilized by the Permittees.

Figure 1-1
Implementation Options



Regardless of who is designated, the Inspector's and/or Spill Responder's primary responsibilities include the following:

- Represent the agency and collect and convey factual information;
- Conduct investigations during which information of verifiable quality is gathered and organized;
- Organize observations and supporting documentation into a narrative report; and
- Report findings objectively, methodically, and without personal bias.

The personnel responding in either the Authorized Inspector or Spill Responder role may utilize the techniques outlined within the Manual in order to ensure that the guiding principles for evidence collection are followed and, thus, defensible.

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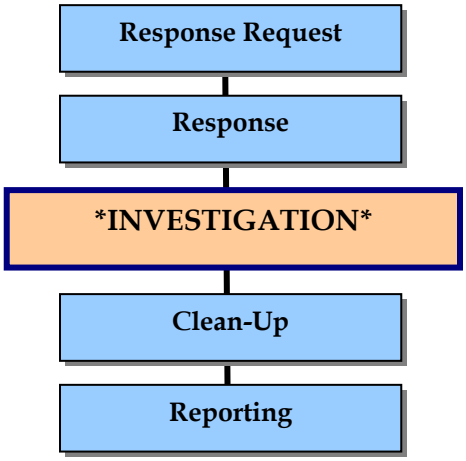
3.0 ILLEGAL DISCHARGES/ILLICIT CONNECTIONS PROGRAM OVERVIEW

The Model ID/IC stormwater program outlines and describes the key elements involved in identifying, responding to, mitigating, and enforcing the ID/IC program for the protection of public health and the environment. The key elements of the ID/IC response procedures are described within Section 10.4 of the DAMP and presented in **Figure 3-1**.

Figure 3-1
Key Elements of the ID/IC Response Procedures



Since the Manual primarily focuses on and provides guidance for the investigative portion of the response program, the other key elements are briefly described below so that the investigative portion is presented within the context of the overall program. In addition, each element indicates the typical roles and responsibilities of the Authorized Inspector and Spill Responder.

3.1 Response Requests

Authorized Inspector
- Receives response request
- Forwards to Spill Responder if hazardous material

Spill Responder
- Receives response request
- Forwards to Authorized Inspector if non-hazardous material

Response requests can come from a variety of sources, including the general public, Permittee staff such as field inspectors, other agency personnel such as Health Care inspectors or Regional Board staff, and emergency personnel such as police and fire departments. However, the Permittees need to be able to obtain information about potential or existing discharges as soon as possible. In order to facilitate the reporting of problems, the Permittees advertise the following on the public education brochures and posters (DAMP, Section 6):

- The County's 24 hour water pollution problem reporting hotline number (714-567-6363);
- The County's website reporting form (www.ocwatersheds.com); and
- The Permittee's local hotline number (if applicable)

The Permittees also coordinate with internal staff and other agency and emergency response personnel and hold various training sessions and meetings so that they understand how to identify a problem and to whom to report it. An example of this type of inter-agency coordination is the Orange County Hazardous Materials Strike Force.

3.2 Response

Each response request should be verified as soon as possible to ensure that valuable information is not lost and to minimize any potential human health and environmental impacts.

A response to a reported illegal discharge generally includes the following:

- An on-scene assessment;
- Agency notifications; and
- Containment of the materials involved.

The typical duties of the Inspector/Responder during a response are outlined below.

Authorized Inspector

- Map discharge points and outlets and collect other data;
- Conduct compliance inspections including collecting, preserving and documenting evidence;
- Identify locations of Illicit Connections;
- Identify sources of prohibited discharges;
- Review documents and records related to processes and chemicals on-site;
- Inspect structural and non-structural BMPs;
- Consult with fire to identify imminent dangers;

Spill Responder

- Document the source of the spill;
- Identify the responsible party, where possible;
- Establish evidence useful in recovery of spill response costs, where appropriate;
- Assist the Authorized Inspector in evaluating the need for emergency abatement;

3.2.1 On-Scene Assessment

It is important to conduct an on-scene assessment to verify and gather additional information since the information collected during the initial report may be inaccurate. The initial on-scene assessment should either be conducted at the same time as containment or as quickly as possible, followed by a more thorough investigation, so that the materials do not continue to discharge or flow downstream from the point of origination.

If the Inspector/Responder is not the first person on-scene, they should report to the person in charge or to the Incident Commander in order to obtain a briefing on the status of the incident. A large incident or emergency may require a multi-agency response. To reduce confusion during these types of responses, the Incident Command System is utilized.

During a large incident, the Inspector/Responder should:

- Upon arrival at the scene, report immediately to the Incident Commander (IC) – typically the Fire Department. After obtaining a briefing from the IC, perform an on-scene assessment and provide the IC with the results
- Identify the material and sample for evidence, if necessary
- Provide access to areas under the Inspector/Responder's jurisdiction
- Provide the IC with technical support on environmental protection measures
- Provide the IC with access to the Inspector/Responder's available resources

For the on-scene assessment, the Inspector/Responder should evaluate the following (*although these items are listed sequentially, it should be noted that most need to be initiated simultaneously and may not be completed until the Inspector/Responder is able to verify and/or collect additional on-scene information*):

- **Jurisdiction:** Verify jurisdictional boundaries to be sure of appropriate responsibility and authorization for enforcement and any clean-up costs.

- **Initial Containment**: Initial containment should be implemented as soon as possible. The initial containment may consist of eliminating the source, blocking storm drains, constructing berms and dams with soil or sand near the source and/or in the storm drain infrastructure, etc. (see *Containment* below). Once the initial containment steps are completed and additional information is obtained a more comprehensive containment strategy may be developed and implemented (see Develop Containment Strategy below)

- **Storm Drain Maps:** If the storm drain system has been impacted, local drainage maps should be consulted to determine the flow path as well as safe access locations so that the waste can be contained and removed to the extent possible.

- **Responsible Party:** Identify the Responsible Party (RP) and inform them that the discharge is prohibited and the impacted area will need to be cleaned up. If the RP is not immediately available, the Ordinance provides for entry on property without consent or warrant if the discharge or release constitutes an imminent danger to public safety or the environment. However, if this type of entry is deemed necessary, the Inspector/Responder should consult with local law enforcement and/or city counsel.

- **Hazard Assessment:** Conduct general assessment of immediate hazards or dangers. If doubt exists whether the condition presents a harmful situation, it may be appropriate to refer the incident to a Spill Responder, local Fire Department and/or the OC Hazardous Materials Strike Force to make the determination. In most cases, if the threat is serious, these agencies will be prepared to take emergency steps to eliminate the discharge.

- **Material Identification:** To the extent possible, identify the type and volume of waste discharged (i.e. latex paint, sediment, fuel, etc.). If the pollutant is an unknown or may be hazardous refer to a Spill Responder and/or Fire Department and safely observe any indications of pollutant reaction (fumes, smoke, bubbling, etc.) and be aware of any strange odors. Material(s) may also be identified by examining placards/labels, shipping papers, container markings, or other information from the facility operator. Spill Responders may also work with a fire department hazardous materials response team or refer to various references including Merck's Index, Sax's Properties of Industrial Materials, EPA Red Book, to identify the pollutant's hazard information.

  This information may be critical in order to identify appropriate containment and clean up strategies.

- **Develop Containment Strategies**: Since the containment strategy is highly dependent upon the type of material involved and the flow path, this step should begin in earnest after these key pieces of information are determined. Initial efforts may consist of eliminating the source, blocking storm drains, constructing berms and dams, etc. (see Initial Containment above). Once the initial containment is in place and the Inspector/Responder has the additional information, a more comprehensive strategy should be developed. The strategy should identify the:

  - Materials and resources necessary for full containment;
  - Agency/contractor who will provide the materials and resources;
  - Locations for deployment;
  - Additional agencies that may need to be contacted to provide assistance such as other Permittees, the County, sanitation districts, etc.
  - Additional resources that may assist in containment such as a pump station or low flow diversion.

- **Cause of Incident:** Conduct an initial assessment to try and determine why the incident occurred, whether the discharge or release was deliberate or accidental, and if the incident is a repeat occurrence. After completing the containment, conduct any further investigations that may be necessary prior to commencing cleanup.

- **Impacts:** Determine the extent of the impacted area and whether the discharge has entered the storm drain system. If the pollutant has entered the storm drain, assess potential downstream impacts.

- **Clean-Up:** Conduct an initial assessment of the extent of and type of cleanup that will need to occur in order to mitigate the affected area. This initial information should be provided to the RP so that the necessary resources can be assembled.

3.2.2 Agency Notifications

After conducting an initial on-scene assessment, additional agencies may need to be notified so that they can respond. Notifications may include:

- **Notification of Other Agencies:** Any agencies or entities that may be affected by or have jurisdiction over the pollutant, discharge or area should be notified. An example list of agencies and their interests is included in **Appendix A .** For incidents involving sewage, sewage spill notification procedures should be followed (DAMP, Section 10.3).

- **Assistance Requests:** If it is determined that the incident requires a multi-agency response, it may be necessary to request additional assistance from the other agencies. For example, Orange County Health Care Agency may take the lead on private property impacts while the Permittees take the lead on public right of way impacts.

3.2.3 Containment

The Inspector/Responder should work with the property/facility owner, fire department, public works, etc. to discontinue the discharge and contain it as close to the point of origination as soon as possible. This is critical in preventing further contamination or degradation downstream and will ultimately result in an easier and less expensive clean-up effort. Containment can be achieved by constructing dikes, dams or through the use of containment booms.

The order of preference for the containment is:

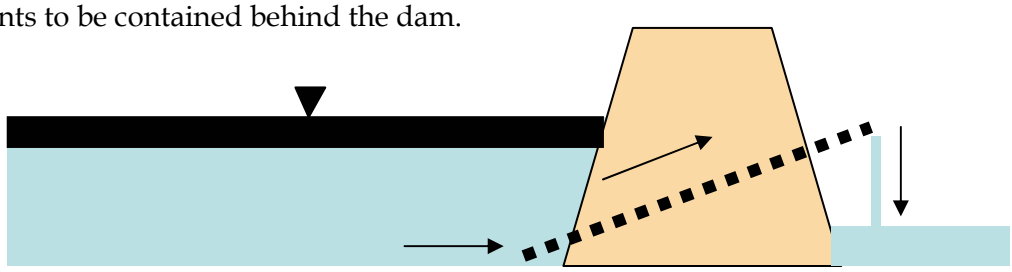
- On-site at the point of origination
  - In the curb/gutter or street
    - In the catch basin
      - In the storm drain system
        - In the channels/streams

Typical containment measures are described below:

- **Block or cover the storm drain:** The storm drain can be blocked by covering it with a heavy plastic and sand bags or by placing a bulkhead in front of it.

- **Berms and dams:** Construct a berm or dam by shoveling dirt or sand to prevent the material from flowing. For larger or high flows, the use of heavy equipment may be necessary in order to move dirt or sand for the construction of the berm or dam.

- **Underflow dam:** For spills that involve pollutants that float on water such as oil or fuel, an underflow dam may be constructed by inserting a pipe through the base of the dam that is angled at an incline. The pipe is angled so that the portion of the pipe upstream of the dam is angled downward and the portion of the pipe upstream of the dam is angled upward. This allows the water to flow from underneath the surface, and the pollutants to be contained behind the dam.



- **Containment booms:** For spills involving petroleum products, there are commercially-available hydrophobic floating devices that contain petroleum products in water. A number of these devices can be connected together to extend the width of a channel or encircle a large surface area to contain the material.

- **Diversion:** In select circumstances, the waste may be diverted to a basin or sump for subsequent removal or diverted to the sanitary sewer. However, this should only be undertaken with permission of the jurisdiction who owns the basin, sump or sewer.

After containment is achieved, a formal assessment/investigation may be completed, if necessary, and clean-up of the site may be initiated.

3.3 Investigations

The primary objectives for conducting an investigation and collecting evidence are to:

1. Determine the responsible party;
2. Assess and assign damages; and
3. Bring forth appropriate enforcement action.

All of the actions to meet these objectives should be conducted in a manner such that they are legally defensible. As a standard practice, the Inspector/Responder should conduct and document investigations so that they are defensible and would successfully stand up in a court of law if necessary. Since the information collected at each incident should be accurate and meet baseline evidentiary requirements, the Manual identifies various techniques that can be utilized.

3.3.1 What is Evidence?

Evidence is simply documentation that satisfies the "Rules of Evidence" for admissibility in a court of law. Documentation is anything that provides verifiable information used to establish, certify, prove, substantiate, or support an assertion. Photos, reports, statements, samples, diagrams, and records are all examples of documentation that may be submitted as evidence.

Foundation, authenticity, and relevance are the three criterions that form the cornerstones of credible information.

- **Foundation**: One piece of information leads to the next in a logical sequence. Foundation may be thought of as a pyramid of information with one piece building upon the other. The foundation of that pyramid consists of the facts that establish that the person providing the evidence was in a position to know the facts being testified to or has the necessary expertise to render an expert opinion. The following narrative demonstrates how one piece of information builds upon the other:

  John Doe works at ACME Dumping. Mr. Doe operates the outflow valves at the discharge pipe. As part of his job, he is aware of the types of materials flowing through the discharge pipe controlled by the outflow valves. He also knows the location of the point at which the pipe is ultimately emptied. On the third of March, Mr. Doe was at his duty station when Joseph Smith, Plant Manager, directed Mr. Doe to open a discharge valve. According to Mr. Doe, opening this particular valve causes untreated waste from the plant to be discharged into the storm drain. On the fourth of March, the Environmental Protection Agency (EPA) took samples from the pipe controlled by the outflow valve opened the previous day by John Doe. The EPA also took samples from the storm drain. Analysis of these samples by an EPA-certified laboratory yielded results that indicated levels of chromium higher than the allowable limit. Process information from the plant reveals that chromium is a waste material commonly found in ACME Dumping's untreated waste.

The foundation elements in this narrative are the facts that establish that John Doe was in a position to observe that a discharge occurred, when the discharge occurred, who was responsible for the discharge, and what type of material was discharged. That is, John Doe works at ACME Dumping, knows how to operate outflow valves, knows what type of material flows through the pipe controlled by the outflow valves, and, at the direction of the Plant Manager, opened an outflow valve on March third, the day before samples were taken by the EPA that ultimately revealed high levels of chromium at the sample points.

Foundation elements also include facts establishing that the EPA analysis was technically valid (i.e., the technician taking the tests was properly trained and the testing laboratory was certified as having specialized expertise that would allow one to conclude that the results of the tests were valid).

- **Authenticity:** The evidence must be demonstrated to be what it is claimed to be. In the case of the narrative above, a number of questions are likely to be raised regarding the authenticity of the samples that the regulator wishes to introduce into evidence. The basic question as to the authenticity of those samples is whether the samples and the results of the sample analysis being introduced into evidence accurately represent the contaminants present at the locations sampled at ACME Dumping. For example:

  - Was a sample taken from the discharge pipe at ACME Dumping truly representative of the pipe's contents?

  - Was the sample analysis conducted properly so data accurately reflect concentrations of chromium in the discharge?

  - Are the lab reports complete and accurate?

  These are all questions that lend themselves to the authenticity of material brought before the deciding official, judge, or court. The information will not be accepted into evidence if there is a perception that the information may have been compromised. Quality assurance efforts for sampling and analysis and chain-of-custody procedures are examples of practices that support the authenticity of information.

- **Relevance:** The evidence must pertain to the issue in question: "What does this have to do with what we are trying to decide today?" Although a judge determines the admissibility of evidence in court, under most circumstances, the case reviewer will make a preliminary determination if there is enough potential evidence to proceed with a case and assess a penalty (when applicable).

3.4 Clean-Up

The main objective in a clean-up operation is to restore the impacted area back to its original state (to the extent practicable) and prevent further environmental degradation. It is also important that the clean-up is completed in a timely and cost-effective manner.

During the initial site assessment, the Inspector/Responder may determine the type of clean-up necessary and coordinate with the responsible party to assemble the necessary resources.

Typical clean-up tasks and considerations are as follows:

- Before clean-up commences, make sure that any necessary samples have been collected.
- Determine ancillary impacts and refer to appropriate agencies or departments.
- In order to ensure that multiple agency concerns are considered during the clean up, coordinate with other regulatory agencies that have jurisdiction as needed to identify necessary actions.
- If the responsible party has been located and is cooperating, discuss the necessary clean-up actions. Require that the responsible party obtain the necessary resources to clean up the affected area; this may include contracting with a private clean-up company. To assist the responsible party, the Inspector/Responder may provide a list of potential clean-up companies (**Appendix A)**. *Note: the example list provided is not all-inclusive and the companies listed are not endorsed by the Permittees, nor are the Permittees affiliated with any of the companies.*
- Discuss the equipment and labor requirements to mitigate the incident with the RP, contract clean-up company, and other regulatory agencies involved.
- Re-evaluate the resources necessary to perform the clean-up throughout the operation and ensure that they are sent to the site.
- Oversee the clean-up, provide directions, and verify waste removal.
- Document the activities and waste removal (volume, disposal).

Typical clean-up measures are described below:

- **Pumping operations:** When a large volume of water needs to be removed, the most appropriate action may be removal with a vacuum, pump, or Vactor truck.

- **Absorbent booms and pads:** Absorbents can be placed directly on the liquid, picked up, and transported offsite for disposal. Many absorbents are designed for specific spill substances, such as acids, bases, oils, or solvents. Acid and base absorbents usually have neutralizing capabilities. The oil and solvent absorbents can also be hydrophobic, allowing their use for spills into waterways. Many of these absorbents are manufactured in the form booms so they can be placed across streambeds or used as containment dikes.
- **Granular absorbent:** Examples of absorbents include sand, dirt, sawdust, clay particles, and vermiculite. Absorbents are generally used for small volumes of liquid releases. Absorbents are dispersed onto liquid pollutants, allowing the pollutant to be absorbed by the absorbent so the mixture can be swept and picked up for disposal.
- **Steam cleaning/power washing:** After removing pollutants from the impacted area, the remaining residue may be removed by steam cleaning or pressure washing. Ensure that all wastes generated from this process (wash water) are contained and disposed of properly.
- **Soil removal:** If soil has been impacted in an area, it can be removed for proper treatment or disposal.

Since clean-up costs may be substantial, the responsible party should clearly accept or deny responsibility for clean-up costs. If the clean-up is extensive and the responsible party will not assume responsibility, the Inspector/Responder may need to contract with a clean-up company and seek reimbursement at a later date.

3.5 Reporting

The ID/IC program has a number of reporting requirements. The requirements include:

- **Proposition 65 Notification**. Health and Safety Code 25180.7 provides that

  "Any designated government employee who obtains information in the course of his official duties revealing the illegal discharge or threatened illegal discharge of a hazardous waste within the geographical area of his jurisdiction, and who knows that such discharge or threatened discharge is likely to cause substantial injury to public health or safety, must, within 72 hours, disclose such information to the local health officer."

  Proposition 65 notifications are generally transmitted via fax or phone:

  - FAX (714) 972-0749
  - Hotline telephone (714) 667-3765

  Although this information is typically conveyed by a local fire department, if they are not on scene the Inspector/Responder may need to complete a Proposition 65 notification. When completing a notification, the following information may be requested:

  - Date and time of incident
  - Name of employee reporting
  - Agency
  - Incident location (Name and address of business if applicable)
  - Telephone number and contact person at the incident location
  - Brief description of what, where, and how the incident happened
  - Responsible party and telephone number
  - Identification of discharged waste
  - Field data or lab results (indicate soil, groundwater, etc.)
  - Environment affected (e.g., roadway, groundwater, sewer, storm drain, lake, stream, river, bay, ocean, air, soil, flood channel, paved ground, etc.)
  - Type of locale (e.g., residential, commercial, industrial, open area, rural, etc.)
  - Public or private property
  - Extent of contamination
  - Number of injuries as a result of the release, including the number of persons receiving medical treatment and where
  - Agencies responding to the incident
  - Was the incident mitigated?
  - Person or agency to which the incident was referred
  - Agency or contractor that conducted the clean-up
  - Is the area physically accessible to the public?
  - Proximity to the public
  - Factors likely to cause substantial injury to the public health and safety

- **Regional Board Notifications**. If a spill, leak, or illegal dumping is determined to pose a threat to human or environmental health, the Permittees provide oral notification to the Regional Board followed by a written report.

  Santa Ana Regional Board

  At a minimum, the items that are reported include:

  - All sewage spills that reach surface waters and/or could impact water recreation;
  - All reportable quantities of hazardous waste spills per 40 CFR 117 and 302;
  - Oil spills that could impact wild life; and
  - Hazardous substance spills where residents are evacuated.

  The oral notifications are submitted within 24 hours to:

  Mark Smythe
  Santa Ana Regional Water Quality Control Board
  Telephone: (951) 782-4998

  The key pieces of information that are included with the oral notification include:

  a) The date and time of the incident
  b) Reporting party contact information
  c) A description of the incident
  d) The location of the incident
  e) Alleged responsible party contact information
  f) Status on actions taken

  The written reports are submitted within 5 calendar days to:

  Mark Smythe
  Santa Ana Regional Water Quality Control Board
  3737 Main Street, Suite 500
  Riverside, CA 92501

San Diego Regional Board

All discharges of non-stormwater that are prohibited must be reported to the Regional Board.

The oral notifications are submitted within 24 hours to:

Jeremy Haas
San Diego Regional Water Quality Control Board
Telephone: (858) 467-2735
E-Mail: haasj@waterboards.ca.gov

The key pieces of information that are included with the oral notification include:

a) The date and time of the incident;
b) Reporting party contact information;
c) A description of the incident including why it occurred;
d) The location;
e) Alleged responsible party contact information; and
f) Status on actions taken.

The written reports are submitted within 5 calendar days to:

Jeremy Haas
Northern Watershed Protection Unit
California Regional Water Quality Control Board, San Diego Region
9174 Sky Park Court, Suite 100
San Diego Ca 92123-4340
E-Mail: haasj@waterboards.ca.gov
Fax: (858) 571-6972

In order to comply with this requirement, a completed form is submitted to the Board with the following additional information:

a) A description of why the incident occurred.
b) The timeframe of incident occurrence, including start and end dates and times.
c) Status on actions taken. If the problem has not been corrected the written report shall include the following:
    a. How long the problem may continue; and
    b. An action plan to reduce, eliminate, and prevent reoccurrences.

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4.0 FIELD SAFETY

During the course of responding to, inspecting and investigating illegal discharges, the Inspector/Responder may come across a variety of facilities, chemicals, process machinery, equipment, structures, and conditions that can present numerous hazards. However, these hazards can be minimized with adequate knowledge, planning and personal protective equipment.

Although this section provides a basic overview of the more common types of hazards that may be encountered, at a very minimum, the Inspector/Responder may also complete an eight (8) hour First Responder Awareness training. This training is required by the Occupational Safety and Health Administration (29 CFR 1910.120 (q)) for individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release. These individuals take no further action beyond notifying the authorities of the release. This course trains Inspectors/Responders to recognize emergency situations and hazardous substances, identify the associated risks, and communicate information regarding the incidents to the proper authorities.

4.1 General Approach

When responding to an incident, the Inspector/Responder should:

- **Have a general awareness of potential facility hazards**. Highly hazardous buildings or areas should not be entered or approached without the proper training and personal protective equipment.

- **Avoid exposure:** Approach the incident in a manner that minimizes exposure to any potential contaminants (i.e., upwind, upstream, and upgrade), and position vehicles facing away from the incident. Establish a command post and a staging area for the involved parties outside of the contaminated area. The staging area should be positioned well upwind and upgrade from the incident. Do not walk into or touch any hazardous materials or unknown spilled material.

- **Isolate the hazard area and deny entry:** Secure the area from vehicle or pedestrian travel. Utilize barricades and personnel to establish outer perimeter.

4.2 Personal Protective Equipment

The Inspector/Responder should always wear the necessary personal protective equipment (PPE) in order to protect themselves from common types of hazards. The Occupational Safety & Health Administration (OSHA) provides guidelines for Hazard Assessment, Personal Protective Equipment (PPE) Selection, and PPE Training Program (29 CFR 1915 Subpart I App A)[1]. Based on the types of hazards that may be encountered, the guidelines provide assistance for hazard assessment, selection of PPE and PPE training.

[1] http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10332

4.3 Hazard Categories

Exposure to hazards during investigations can be minimized by staying informed, using common sense, and being aware of the overall environment. To prepare for potential hazards, the Inspector/Responder should try to be aware of general facility operations ahead of time (if possible) or request information from the facility regarding facility operations/processes as well as chemicals produced and/or stored at the facility, including material safety data sheets (MSDS) even if the materials involved are not hazardous materials.

In addition, it is prudent to be on the lookout for warning signs, containers (labeled or unlabeled), and particular objects and situations associated with the hazards described below. Accidental ingestion of materials can be prevented by refraining from eating, drinking, smoking, or chewing gum during investigations. Additionally, during an investigation, touching of the face, particularly the eyes, nose, and mouth, should be avoided.

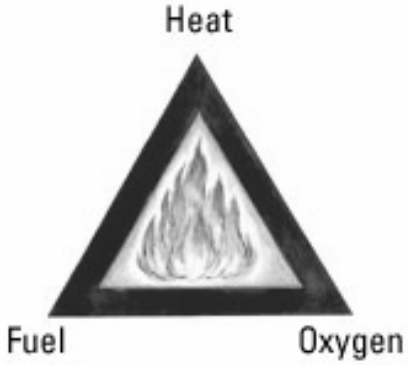
The primary hazards that the Inspector/Responder may encounter during an investigation are discussed below.

4.3.1 Chemical Hazards

Chemicals may be found in solid, liquid, or gaseous form. Chemical exposures may be either acute or chronic and can occur from direct and/or indirect exposure. Since some chemicals do not have warning properties such as a distinct odor, the Inspector/Responder must not depend upon senses alone to warn of exposure to chemical hazards. Following general preventative measures, such as wearing the proper PPE, will help prevent exposure to harmful chemicals.

4.3.2 Fire and Explosion

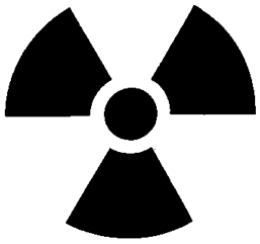
Fires or explosions may result from chemical reactions such as nitric acid with wood, sodium and water, aluminum powder and iron oxide, etc. Combustion needs three components in order to occur: fuel, an ignition source (heat), and oxygen. Since the atmosphere has sufficient oxygen for combustion, all that is generally needed is an ignition source and fuel. Ignition may occur as a result of oxygen enrichment or from shock. In addition, ignition sources may come into contact with uncontrolled off gassing, routine process vapors, etc. and can include the following:



- Cameras, flashlights, or cellular phones.
- Cigarettes. These are one of the most common accidental ignition sources in an industrial setting.

4.3.3 Radiological

Radiation sources may present external or internal danger. Generally, the greater the radiological hazard, the more likely it is to be identified through markers, labels, or detection equipment.



Some common sources of radiation include:

- Medical equipment;
- Radioactive wastes from medical facilities;
- X-ray equipment; and
- Some electronic equipment.

4.3.4 Biological

Biological hazards are among the most common and include both micro and macro sources. The primary biological hazards are:

- Microbes such as viruses, bacteria, and parasites. Inspector/Responders should be particularly cautious around food and water sources, rest rooms, and washing facilities.
- Bites or stings from guard dogs, insects, snakes, and other animals.
- Poisonous plants and allergic reactions to dust, pollen, or other allergens.

4.3.5 Physical

Common physical hazards include:

- Items that could cut or crush you;
- Items that you might trip over, fall into, fall from, or slip on;
- Extremely high or low temperatures;
- Dry or humid atmospheres;
- Poor lighting; and
- Excessive noise.

The potential for injury from physical hazards may be increased by circumstances in which your senses are impaired:

- Poor hearing because of wearing hearing protection
- An inability to talk with others because of excessive noise
- Impaired vision or mobility

Other, less obvious physical hazards include the following:

- **Oxygen Deficient Areas** may exist in confined spaces and depressions. Oxygen can be displaced by other gases or be consumed by chemical reaction. Excessive concentrations of oxygen can also be dangerous due to an increased risk of combustion or explosion.

- **Confined Spaces** can be dangerous due to oxygen deficient or toxic atmospheres which can cause explosions, poisoning or asphyxiation. The National Institute of Occupational Safety and Health (NIOSH) defines confined space as "any space which, by design, has limited openings for entry and exit; unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy.[2] Examples include sewers, casings, tanks, silos, and vaults. Additional information on confined spaces can also be found online at http://www.osha.gov/SLTC/confinedspaces/index.html .

- **Electrical Hazards** may be obvious items such as transformers, exposed wires, or electrical panels. They may also include lightning from storms or static discharges generated by high voltage electrical equipment.

- **Fatigue and Stress** reduce judgment. In order to reduce fatigue and stress the Inspector/Responders should stay comfortable and dry, avoid extremes of heat or cold, monitor fatigue, and allow adequate rest periods.

- **Loss of Peripheral Perception** can result from focusing your concentration too closely on one task. This may distract you from other dangers around you.

- **Vehicle Traffic** is a common, yet sometimes overlooked hazard associated with spill response. If traffic lanes need to be restricted and/or closed in order for the Inspector/ Responder to effectively respond to the incident, the restrictions/closures should be coordinated with and implemented by the local jurisdiction that has responsibility for the roadway which may be the local city, county or Caltrans. In addition, the local police department may also be able to provide assistance in order to ensure that the restriction/closure is adhered to.

[2] http://www.osha.gov/SLTC/confinedspaces/recognition.html

4.4 Field Safety Summary

In order to conduct successful investigations, the Inspector/Responder can have an assembled field kit prepared in advance. A list of items that can be included within the field kit is included in **Appendix B**. A field safety summary is provided below.

- Plan ahead: To the extent possible, be aware of the danger level of the facility before entering the site to conduct the investigation.

- Personal Protective Equipment (ensure that all necessary equipment in on hand) – at a minimum, the following equipment may be necessary.

  ☐ Hard Hat
  ☐ Safety Glasses
  ☐ Steel Toe or Water Proof Boots
  ☐ Gloves

- Main hazards to be aware of during an investigation:

  ☐ Chemical Hazards
  ☐ Fire and Explosion Hazards
  ☐ Radiological Hazards
  ☐ Biological Hazards
  ☐ Physical Hazards

- Additional hazards:

  ☐ Oxygen Deficient Areas
  ☐ Confined Spaces
  ☐ Electrical Hazards
  ☐ Fatigue and Stress
  ☐ Loss of Peripheral Perception

- Container Safety:

  ☐ Always consider a container hazardous until proven safe.

  ☐ Observe the shape, construction, and/or location of the container, which may indicate the nature of its contents.

  ☐ Observe the manner in which a container is being used.

  ☐ Observe signs, markings, or color, which may indicate a hazard. Placards or labels may be required but may be absent. Look for signs of old markers.

- Pay attention to the five senses. One of the greatest hazards is to focus so closely that the Inspector/Responder fails to notice an obvious smell, sound, or visual clue that the situation or site may be dangerous.

- Documentation such as signs, shipping papers, or manifests may help identify hazards.

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5.0 RECORD KEEPING

Information must be documented on an ongoing basis throughout the entire incident to provide for an accurate and defensible investigation. The documentation should identify all actions taken and information obtained as a result of the response and investigation. Depending upon the circumstances, the information can initially be collected in a draft format and then transferred to a final reporting form or logbook.

Information from an ID/IC response request must be documented in order to:

- Provide accurate information for any personnel involved in the incident;
- Allow the data to be analyzed in order to determine if there are repeat offenders, problematic areas, problematic types of businesses, etc.
- Ensure that the required regulatory notification and/or reports are completed;
- Provide the required information for any enforcement actions and/or cost recovery;
- Assist with the annual reporting and program effectiveness evaluations; and
- Allow for better decision making for program improvements.

The information may be collected by using a reporting form or a field logbook, both of which are discussed in further detail below. The documentation may also include photographs, the collection of samples, detailed notes on observations, witness interviews, discussions on decisions made, and other information relevant to the investigation. The Inspector/Responder should ensure that all information and evidence collected during an investigation is properly documented on the reporting forms and/or a field logbook.

Although one or both of the reporting formats may be used by the Inspector/Responder based on the type of incident, some of the advantages and disadvantages for the two types of reporting formats are presented below:

Reporting Form

- Identifies key pieces of information necessary for full documentation
- Records adequate information for **small** to **medium** size incidents
- No room for additional narrative
- Photo log, sample log, interview information must be attached
- Does not establish a chronological log of events – forms are independent
- Case file can be developed relatively if triplicate forms are used
- If form is lost – affects one incident

Field Logbook

- Reporting is free form – no set fields to identify information needed
- Records adequate information for **medium** to **large** size incidents
- Allows for additional narratives
- Photo log, sample log, interview information must be attached
- Establishes a chronological log of events – events are set within an overall context
- Case file can be developed – may need to photocopy relevant logbook pages
- If logbook is lost – affects other incidents

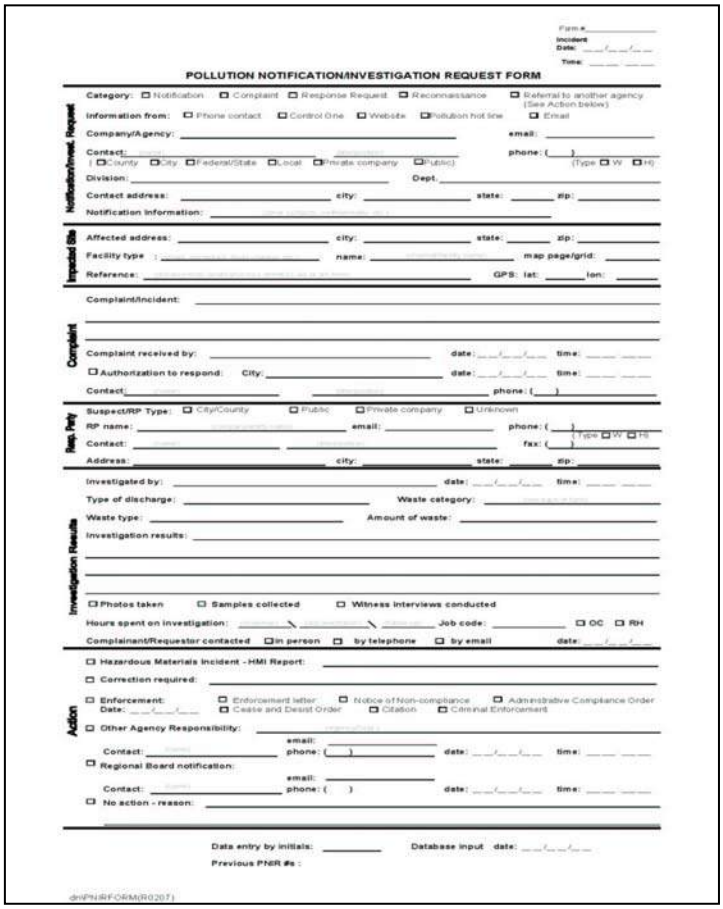
It is generally recommended that documents created or compiled during any complaint or request be retained for a minimum of five years from the date of the incident. Individual departments/agencies should check the appropriate internal document destruction policy so as to be consistent with this recommendation.

5.1 What Should Be Documented?

The short answer is: *document everything*.

There is good documentation and poor documentation, but there is seldom too much documentation. It is better to document something from several approaches than just one. Taking a sample may be good, but the same sample, combined with a thorough record and a photograph, is better. If one piece of documentation fails, the others may be enough to establish the facts. The Inspector/Responder should not assume that one piece of documentation is conclusive in and of itself. Ultimately, the quantity of evidence is important, but the quality of evidence is also pertinent. The primary types of documentation that the Inspector/Responders will use include facility observations, information interviews, samples, and photographs.

5.2 Reporting Form


POLLUTION NOTIFICATION/INVESTIGATION REQUEST FORM

To ensure that the necessary information is collected, the Inspector/Responder may use pre-established forms such as the example form included in **Appendix C**. The forms typically collect information regarding:

- Initial notification/response request;
- The location and specific details about the complaint or spill;
- Information about the alleged responsible party;
- The results of the investigation; and
- The actions that were taken

The reporting form should be:

- **Portable:** The form size should be small enough so as not to impede the normal activities of an investigation (8 ½ x 11 or 8 ½ x 14).
- **Dedicated:** Each form should be event-specific and have a unique identifier – such as a form number – so they are not duplicated.
- **Triplicate:** Triplicate forms allow the Inspector/Responder to create multiple copies. One copy may be kept in the incident file, one copy may be provided to the responsible party and one copy may be placed in a case file, if necessary.
- **Properly identified and dated:** The name of the site or event and the date should be recorded on each page of the form and all attachments.

Although the final reporting form may not be completed for days, the Inspector /Responder should begin to fill it out when the first response request is made. During the investigation, additional information can be added as it is received. Basic instructions on filling out the example form are also provided in **Appendix C**.

Depending on the incident, the reporting form may summarize the investigation information and refer to a field logbook where additional, detailed information is available.
After the information is entered on the reporting form, the information is generally entered into a database so that the data can be analyzed and reported.

5.3 Field Logbook

A field logbook may be used independently or supplement a standard reporting form (Section 5.1) by assisting in constructing a more detailed final report. The logbook should be kept as part of the investigation file since it may be used as evidence if a case should go to court. The primary factor to keep in mind when completing entries in a logbook is to list only factual information. The Inspector/Responder should indicate whether the factual information was obtained from personal observations or from a witness. Detailed information on logbooks is provided below.

The logbook should be:

- **Portable:** The logbook should be small enough so as not to impede the normal activities of an investigation. Most Inspector/Responders prefer a notebook they can store easily in a pocket or briefcase. Some notebooks are available with water resistant paper.

- **Dedicated:** Each logbook should be site- or event-specific since the logbook may become evidence. It becomes burdensome to maintain the confidentiality of the details of other sites and events that may be contained in the same logbook.

- **Paginated:** Consecutive page numbers show that nothing is missing and provide references for easy access to entries.

- **Bound:** Bound logbooks are less likely to lose pages or get out of sequence. They are also more durable for rough handling in the field.

- **Properly identified and dated:** The name of the site or event and the date should be recorded on each page.

Taking and Keeping Field Notes in the Logbook

- Many Inspectors/Responders write initial entries on only one side of the logbook. The opposite page is then used to add further details as they become available. An example logbook page is included in **Figure 5-1**.

- Be brief or abbreviate as necessary. Each Inspector/Responder usually develops a shorthand or code to streamline note taking. Field notes are intended for the Inspector/Responder's eyes, since they are the ones who will interpret and use the information.

- Entries in the logbook should be objective, factual, and without subjective conclusions. There are two exceptions:

    - Professional opinions such as an engineering analysis.

    - A subjective opinion may be written as a reminder to follow up.

        - In either case, the Inspector/Responder should identify the reasoning. For example: "Follow up to verify statements by Mr. Jones." would be an acceptable statement. "Mr. Smith is a dirty rotten liar." would be unacceptable because the logbook may need to be disclosed in the future.

- Field notes should be made as contemporaneously as possible.

- Anything given to the facility or taken from the site, including samples and documents, should be thoroughly and accurately logged.

- Clip or staple business cards in the logbook for later reference.

- Photographs and samples should be referenced within the logbook.

- The logbook should be protected from moisture. There are several types available that will shed rain and still accept pencil or ink.

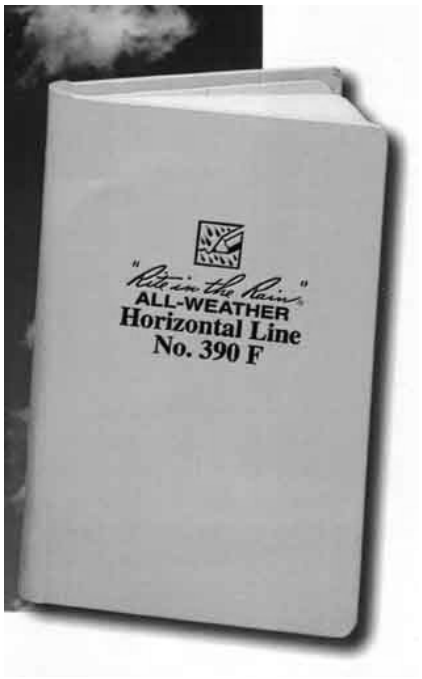
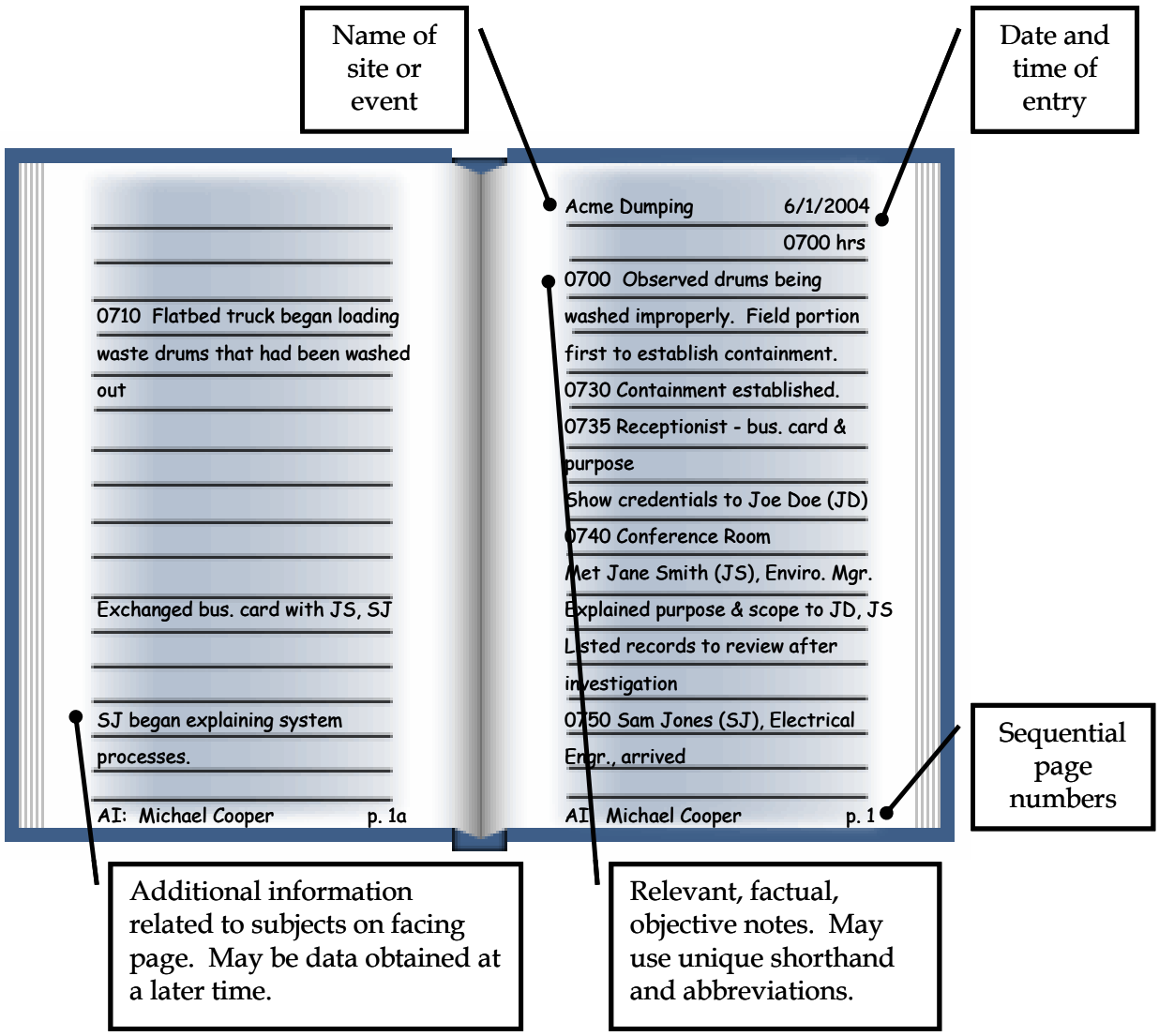


Figure 5-1
Example Logbook Entry



What Should Go into the Logbook?

Although the information will vary from incident to incident – the information entered within the logbook should be very similar to the information that is entered onto a reporting form. At a minimum the information should identify the following:

- ☐ Inspector/Responder's name
- ☐ Any information related to the site or event
- ☐ Site entry procedures, events, and contacts, especially if there were problems
- ☐ The names of site contacts. Include the person's title, phone number(s), or means of contacting him or her at a later date
- ☐ Dates and times of specific events
- ☐ Any deviations from established protocol or procedure
- ☐ Names and contact information of everyone interviewed
- ☐ Interview notes
- ☐ Discussion of unusual conditions
- ☐ All sampling information/log
- ☐ Photograph/video log
- ☐ Informal witness interview information

5.4 Incident Report

After a medium to large size investigation is completed, the Inspector/Responder may need to prepare a detailed incident report as an attachment to the reporting form or logbook entry. The incident report should include a description of the site, the processes occurring at the site, the location of each sample point, contact information of potential witnesses, the actions taken, recorded observations of physical conditions indicating possible discharge, and the findings of the investigation. The primary objective in generating the report is to organize and coordinate all documentation and potential evidence in a comprehensive, understandable, and usable manner.

Incident reports should be written as close in time to the investigation as possible so that relevant information can be documented while it is still fresh in the Inspector/Responder's memory. If the time gap between the investigation and the report is too large, the credibility of the report could be brought into question.

The narrative and supporting documentation for the incident report should be:

- **Accurate.** All information should be factual and based upon sound practices.
- **Relevant.** Information in the report should be pertinent to the subject and objectives of the investigation. Information that is not relevant should be omitted.
- **Comprehensive.** Everything that may contribute to an accurate determination of the facts or support the objective of the investigation should be included. It is better to have too much evidence than not enough.
- **Organized.** The report should be well-organized and flow in logical sequences. Readers with less technical experience or knowledge should be able reach rational conclusions based upon the narrative and supporting evidence.
- **Objective.** Factual information should be presented objectively without drawing conclusions. The narrative and logical presentation of information should allow readers to reach their own conclusions regarding the incident.
- **Clear.** The report should be written at a level for its intended audience. It should be succinct and to the point.
- **Professional in appearance.** This is a permanent record and a professional document subject to scrupulous review. Use acceptable grammar with proper spelling and punctuation. Make the document legible, neat in appearance, and organized for easy use.

Some Practical Considerations for Report Writing

1. Write in the first person. "I asked Joe what he did."

2. Write in the active voice. "Joe told me that he buried the drums behind the shop."

3. Write in logical order. Most Inspectors/Responders write their reports in the same sequence that they conducted their investigations. Attachments and supporting documents should be identified appropriately and in logical relationship with the narrative. For example: "I reviewed the waste manifests and discovered a mistake in the number of drums in section 1(a) of the manifest dated March 12, 1998."

4. Write the report so that information is easy to find. Use headings.

5. Avoid being excessively formal or technical. The Inspector/Responder should simplify information rather than make it unnecessarily complex or technical. Clarity is far more important than sounding academic.

6. Avoid the use of colloquialisms, jargon, or offensive language.

7. If the Inspector/Responder's professional credentials (engineer, chemist, scientist, etc.) and investigation objectives require a professional conclusion to be made, the Inspector/Responder should do so with a clear explanation of the logic, calculations, and supporting materials. Any other individual with similar professional credentials should be able to repeat this work and reach the same conclusion.

8. Provide supporting verifiable data for any calculations or summaries included in the report.

9. Avoid making assumptions by using absolutes such as "all", "never", or "always".

10. Write an Executive Summary if the report is long. Most managers will not have the time to read the entire report, so a summary will quickly focus them on the conclusion.

Bottom Line
A good report is so clear and so complete that if the Inspector/Responder is not involved in the future, the potential evidence would still be able to support the case to a successful completion.

Typical Headings and Information Included in Investigation Reports

- ☐ **Heading:** Include the date and type of investigation and the site or activity name.
- ☐ **Facility Address:** Address where all official correspondence should go.
- ☐ **Site Address:** Exact geographic location of the site, especially if different from the Facility Address.
- ☐ **Site Contacts:** Name, position or title, and telephone number.
- ☐ **Investigation Team:** Name, position or title, and telephone number.
- ☐ **Site History:** Include the history of facility site location, processes, ownership, and compliance. Also include a brief description of the present operations.
- ☐ **Investigation Time/Date:** The hour, day, and year of the investigation
- ☐ **Opening Conference:** To whom did the Inspector/Responder show credentials? Who was present? What were their titles or positions? What was discussed? Were specific arrangements made? Was entry granted or denied? Were there special conditions, problems, or restrictions?
- ☐ **Field Investigation:** This is a narrative of the field investigation, events and observations. Where the Inspector/Responder go, and what did the Inspector/Responder do and see?
- ☐ **Record Investigation:** What records were reviewed? What records were copied and taken? Where were the records kept and who was in charge of them? What selection method was used to review records?
- ☐ **Closing Conference:** Who was present? What was discussed? Did the Inspector/Responder request further information? If so, from whom and by what date?
- ☐ **Samples:** What samples were taken where, when, and of what? How were they packaged? Attach copies of all supporting documentation and chain-of-custody. Include the timeframe of transport to and receipt of samples at the lab.
- ☐ **Compliance Concerns:** This should be the Inspector/Responder's opinion only.
- ☐ **Attachments:** List and identify all notes, documents, photographs, notices, and documentation. This may be done in the investigation narrative itself or in an appendix of attachments.
- ☐ **Date and Signature of Inspector/Responder**

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6.0 SITE ENTRY

This section provides practical information for accessing a facility to conduct an investigation and outlines the requirements that the Inspector/Responder should follow when requesting permission to enter a facility. It also explains how an Inspector/Responder can determine if entry has been denied and suggests methods of preventing denial of entry. It should also be noted that law enforcement and/or fire departments may already be on scene for some incidents and have obtained access to the facility. If this is the case, consent should still be obtained by the Inspector/Responder.

6.1 Consent

Although the model Water Quality Ordinance authorizes the Inspector/Responder to enter property to investigate the source of any discharge to a public street, inlet, gutter, storm drain, etc., it also recognizes that, prior to conducting any investigations, the Inspector/Responder must obtain either the consent of the owner or occupant or obtain a warrant to gain access to private property. Even though agencies can obtain warrants, the policy of most agencies is to seek consent for entry.

In order to seek consent for entry, the Inspector/Responder should:

- ☐ Enter through the main gate or reception area
- ☐ Locate the proper facility official
- ☐ Provide a formal introduction by self-identification to the facility contact using proper credentials. Exchanging business cards is a good way to present identifying information and obtain information about site contacts without lengthy and redundant questioning; however, remember that a business card is not official identification. A city photo ID card is preferred over a business card.
- ☐ Explain the basis for the investigation
- ☐ Explain the scope and needs of the investigation (sampling, photographs)

After the introduction, the Inspector/Responder should determine if consent has been provided. Consent must be voluntary, obtained without misrepresentation and can be withdrawn at any time. In addition, consent may be explicitly or implicitly implied. Examples include the following:

- Facility official verbally states that permission is granted (explicit); or
- Although the facility official does not verbally state that permission is granted, they lead the Inspector/Responder through the facility for the inspection (implicit).

If consent is provided, the investigation on the private property may continue. However, the Inspector/Responder should only conduct the investigation with the facility owner and operator present in order to ensure that the areas accessed, samples collected, photographs taken, etc., are done so with the consent of the facility contact.

6.2 Denial

The Inspector/Responder can also be denied entry to a facility either explicitly or implicitly, since the facility can essentially deny entry by placing conditions on activities that would prevent the Inspector/Responder from fully carrying out and documenting the intended purpose of the investigation.

Determining if entry has been denied:

- ☐ **The Inspector/Responder was explicitly denied consent upon entry.** The Inspector/Responder may explicitly be denied entry by anyone on site; however, the denial should be stated by someone with actual authority.

- ☐ **The Inspector/Responder was confronted with unreasonable delays.** If the Inspector/Responder is confronted with unreasonable delays, these concerns should be relayed to the facility contact (e.g., "I have been waiting 45 minutes. My time and resources are limited, and I can only wait another half hour. If I cannot begin by then, I will have to consider this a denial of entry."). During this time, the Inspector/Responder may call the office for guidance and to request assistance if a warrant seems appropriate.

- ☐ **The facility imposed unreasonable conditions on the Inspector/Responder.** Conditions for the inspection which were agreed to during the formal introduction may be altered by the company or facility contact such that it compromises the ability of the Inspector/Responder to complete or document the investigation. Such conditions might include restricted access or limitations on photography or sampling. While some limitations can be adjusted to, others may be too restrictive.

- ☐ **The Inspector/Responder's safety was deliberately threatened.** Some facilities may verbally threaten or suggest that intentional harm may be inflicted. In addition, a facility may implicitly threaten by failing to remove a threat such as a guard dog. If the Inspector/Responder encounters hostile or dangerous behavior, they should leave the facility immediately.

If the Inspector/Responder is denied entry:

- ☐ Try to find out the reasons for the denial and explain the reason for the investigation
- ☐ Always maintain a professional and fair attitude.
- ☐ If denial is clear and nonnegotiable, leave immediately and adjust the plan of action.

If denied entry, the Inspector/Responder should call the appropriate official (possibly a Supervisor) and discuss the next course of action, which may include contacting law enforcement if the discharge is hazardous or potentially hazardous. The agency may also choose to obtain a warrant, which requires probable cause (see next section). In the meantime, observations may be made from any public areas, such as the street.

6.3 Warrants

If the facility denies the Inspector/Responder entry, the agency may request that the court issue a civil administrative warrant so that the Inspector/Responder may execute the warrant and enter the facility to obtain the necessary information, objects, or documents.

A civil administrative warrant may be issued if there is a reasonable cause to believe that a violation has occurred, is occurring, or is about to occur at the facility. If this type of warrant is issued, the Inspector/Responder is then strictly limited to the tasks identified in the warrant.

Criminal arrest warrants are granted for "probable cause" that a crime has been or is being committed, or that evidence of crime is present. The Inspector/Responder will need to set forth facts that support the conclusion that an ID/IC exists (e.g., evidence of discharge). The District Attorney may then seek a search warrant and/or arrest warrant from the court.

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7.0 PRE-INVESTIGATION DISCUSSION

During the pre-investigation discussion, the Inspector/Responder and facility contact should review the scope of the investigation, the facility operations, materials/wastes on site, and potential safety issues. Further exchange of information may occur as time allows.

NOTE: Once an Inspector/Responder's presence is known, site operations tend to cease. If a potential ID/IC was obvious during the site reconnaissance, the Inspector/Responder should forego the pre-investigation discussion and attend to the immediate needs in the field. In addition, if containment of an ID/IC is a priority, the facility site investigation should also occur later.

The pre-investigation discussion is the Inspector/Responder's opportunity to:

- ☐ Inform the facility of the scope of the investigation and how it will be documented (e.g., making copies of records, drawing diagrams, taking samples, talking to employees, taking notes on paper or tape recorder, and taking photographs or using video);
- ☐ Identify who oversees/implements the operations that are being investigated;
- ☐ Learn more about the facility operation, plant layout, management structure, plant processes, plant safety, and other information relevant to the investigation;
- ☐ Learn about the safety concerns and policies at the plant; and
- ☐ Learn what specific kinds of personal protection equipment (PPE) are used.

If the facility contact does not allow any method of documentation, the Inspector/Responder should attempt to negotiate a method that is acceptable to the facility contact in order to document the incident with accurate information. Depending on the circumstances, denial of these documentation techniques could be considered a denial of entry. The Inspector/Responder should note that the facility did not allow specific documentation methods. It is important that documentation of first-hand observations is as complete and accurate as possible.

If a facility contact asks the Inspector/Responder not to take pictures or samples, the Inspector/Responder should offer to provide duplicates of the photographs and split the samples (if possible) so that the facility will have access to the results. The facility may also have specific concerns about photographs that may be accommodated while still allowing photographic documentation to occur.

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8.0 OBSERVATIONS AND INFORMAL INTERVIEWS

One of the primary objectives during the investigation is to determine if the discharge was the result of an accident, negligence or deliberate actions. Although some incidents are purely accidental and occur as the result of traffic collisions, weather, etc., others are the result of negligence such as poor housekeeping or maintenance and/or criminal activity.

Human error is often cause of illegal discharges. Poor housekeeping or maintenance may lead to the occurrence of an incident. Facility maintenance problems may include broken valves on tanks, leaking tanks or pipes, lack of system alarms, container overfill and subsequent overflow, unacceptable BMPs such as hosing down a spill, lack of a contingency plan, or general circumstances where normal industry procedures are violated.

However, criminal activity is more severe than negligence and may include activities such as:

- Knowingly dumping hazardous materials where they will enter the storm drain or waterway to avoid the costs of disposal; or
- Conspiracy to dump materials with the intention of misrepresenting the discharge as accidental.

One of the ways to assist in making these determinations is to conduct a review of the facility operations and conduct informal interviews with facility workers, managers and operators.

8.1 Observation of Facility Operations

The most common method of investigating the operational aspects of a facility include conducting a facility tour and investigating the processes, materials and procedures that are implemented on site.

During the investigation, the Inspector/Responder should:

- ☐ Conduct a walk-through tour of the facility with the facility contact.
  - Utilize a site map to ensure that important areas are not missed.
  - Take notes and mark the places on the map which should be investigated in greater detail.
- ☐ Conduct a process-oriented investigation.
  - Observe the processes conducted on-site.
  - Observe collection and material management areas at each process stage.
- ☐ Take notes, photographs, and samples.
- ☐ Conduct interviews and create diagrams.
- ☐ Record each site or event with more than one method of documentation.
- ☐ Maintain a methodical pace and demeanor throughout the investigation.
- ☐ Confirm critical aspects of observations and processes with site personnel.

8.2 Informal Interviews

The informal interview is one of the most useful tools for gathering information. While the investigation may consist of a simple exchange of information through a series of questions about the facility operations that can be summarized on a standardized reporting form, the following section outlines the basic procedures that can be followed when conducting and recording informal interviews.

NOTE: Formal interviews, especially those where criminal activities may have been involved, should be conducted by trained law enforcement personnel, not the Inspector/Responder.

Informal interviews should be conducted as soon as possible after arrival at the site to assist in determining the cause of the discharge or incident as well as the extent of the pollutants involved. Interviews should be conducted with a variety of facility staff, including workers, management, and the owner/operator. Results of the informal interview should be recorded in the Field Notebook or on an interview log sheet as soon as possible (**Appendix D**). Key information includes who the Inspector/Responder spoke with, what was asked, and how they responded.

Separate interviews should be conducted with persons on the site who are responsible for facilities management or who may otherwise have information relevant to the potential of the operations/facilities to contribute pollutants to the municipal storm drain system. Interview techniques and example questions are illustrated below.

Before the Interview

- ☐ Identify what information the Inspector/Responder seeks to obtain from the interviewee
- ☐ Plan the questions to ask and how to ask them. What are the major topics to be discussed and in what order?
  - Avoid questions that may be answered with a simple yes or no.
  - Keep questions clear and uncomplicated by asking one question at a time.
- ☐ If possible, hold the interview in a private location.

Beginning the Interview

- ☐ Smile, shake hands and briefly explain the reason for the interview
- ☐ Allow subject to introduce him/herself
- ☐ Obtain the subject's necessary personal information (i.e., name, job title and/or position, job duties, contact information)
- ☐ Explain that an investigation is being conducted and that information is being sought to clarify what occurred at the facility
- ☐ Don't make promises of confidentiality or protection that can't be kept.

During the Interview

- ☐ Maintain control, listen to the answers, and pay attention to body language.
- ☐ Avoid negative or accusatory statements.
- ☐ Don't overemphasize note-taking.
- ☐ Listening attentively ensures that information is not missed.
- ☐ Show concern for the subject's comfort and situation. Empathize with the difficulty the subject may have in revealing information.
- ☐ Keep the time sequencing consistent. Work backward or forward in time.
- ☐ Start with non-threatening topics such as general background information. For example: "What do you do here at Acme Dumping? Oh, then would you know how wastes are handled in the plant?" Such questions may be followed by more specific questioning, since the subject knows that the Inspector/Responder is aware of their knowledge.
- ☐ Ask follow-up questions to verify assertions (e.g., "Why do you say that? How do you know that?"). Repeat or rephrase information to verify that the subject's statements are understood accurately and completely.
- ☐ Evaluate the completeness and reliability of the answers. If the Inspector/Responder feels the subject is compromising their response, the topic may need to be approached from a new direction, or the rapport may need to be improved
- ☐ Use simple acknowledgments and pauses to motivate the subject to continue their narrative. Let the silence stretch out. For example, "Uh huh," followed by silence, or "Yes, and then what?" followed by silence. This tactic will often motivate the subject to fill in the silence with further information.

Concluding the Interview

- ☐ Summarize and verify the important information that was noted.
- ☐ Ask and provide opportunities for additional information and/or clarification.
- ☐ Express appreciation for their time and effort.
- ☐ Provide the subject with contact information if they remember something or wish to provide further information.

Good Questions Lead to Good Answers

How a question is asked can be more important than the question itself. For example, one common mistake is to ask a question that includes the answer. In these cases the subject will usually agree with the answer given in the question.

Following are some examples of poorly-phrased questions:

Q: "You don't have any toxic materials around here, do you?"
A: "No, sir."

Q: "There aren't any buried drums on your property, are there?"
A: "I don't think so."

Q: "You have all the necessary records, don't you?"
A: "Sure."

Q: "Your Spill Prevention and Control plan is up to date, isn't it?"
A: "Yup."

Instead, the following questions ask for the same information but will encourage the subject to provide more information:

Q: "What chemicals do you handle?"

Q: "Do you know of anything buried on the property?"

Q: "Where do you keep the _____records?"

Q: "Do you have a Spill Prevention and Control plan?"

The last two questions require a follow-up. The Inspector/Responder should verify important assertions made by facility personnel. A statement that something exists is not the same as verifying by the Inspector/Responder's own sight or measurement. Questions are also generally more effective if you structure the questions to address the more general issues to the more specific. An example line of questioning is provided below.

Line of Questioning: General to Specific

The following example shows a line of questioning that leads from the general to the specific:

Q: "Whom do you work for?"
A: "Acme Polluters."

Q: "How long have you worked for them?"
A: "About six years."

Q: "What do you do there?"
A: "I open bungs on drums from Mega Chemical Corp. Then I pump them dry."

Q: "After you pump the drums, what do you do with the contents?"
A: "I pump it into a tanker truck."

Q: "Then what happens?"
A: "The truck takes it to the landfill."

Q: "Which landfill is that?"
A: "The County landfill mostly."

Q: "Anywhere else?"
A: "The old quarry near the water tower."

Q: "What's in these drums?"
A: "Usually solvents like trichlor that MegaCorp collects from print shops."

Q: "Are there labels on these drums?"
A: "Sometimes."

Q: "Uh huh?" (Note: Sometimes a simple affirmation followed by silence will stimulate the subject to offer more information than another question would.)
A: "There are Hazardous Waste labels and sometimes there are company labels that show what the stuff is and how to dispose of it."

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9.0 ENVIRONMENTAL SAMPLES

The collection and analysis of water and/or soil samples may be necessary to document noncompliance. However, since sample analysis can be expensive, samples should only be collected when deemed necessary.

Sample collection and documentation should address four primary issues:

- **Ensuring that the sample is representative:** Was the sample representative of what the agency wishes to evaluate for compliance? Did it represent a specific waste stream, site, event, or time period?

- **Using proper sampling and analytical methods:** Were appropriate methods used to (a) ensure that the sample was taken properly for the substance and matrix in question, and (b) conduct an accurate and precise evaluation of compliance? To ensure validity of analytical results, samples must be analyzed within the maximum allowable holding time specified by the analytical methods.

- **Reporting data in usable form:** Were all quality assurance and quality control measures reported and within acceptance limitations? Data should be reported using appropriate detection limits (low enough to determine compliance).

- **Sample chain of custody**: Can the agency provide chain of custody for the sample? That is, can proof be provided regarding where the sample came from, where it went, and what was done to it? Providing this chain of custody will ensure that there was not an opportunity to compromise the sample along the way.

In addition, safety is a primary consideration in the collection of samples; therefore, the Inspector/Responder should use appropriate personal protective equipment (PPE) to prevent exposure to hazardous pollutants if they are involved in collecting samples.

Although sampling procedures will vary based upon the site configurations and the constituents being analyzed, general procedures are provided in this section as guidelines for the Inspector/Responders. Specialized training in sampling, shipping, analytical methods, quality assurance, and data quality are offered by some analytical laboratories or outside consultants.

Sampling Preparation

☐ Samples should be representative of the material and/or event.

☐ Check the appropriate analytical methods and/or consult with the laboratory that will analyze samples obtained to determine if any special handling or sampling preservation techniques will be required for the types of samples expected to be obtained.

☐ Verify that all containers used for sample collection are of appropriate size and material, are clean or have been properly cleaned, and contain the proper preservatives.

☐ Assign an identification number to each sample and note the identification number on the sample container.

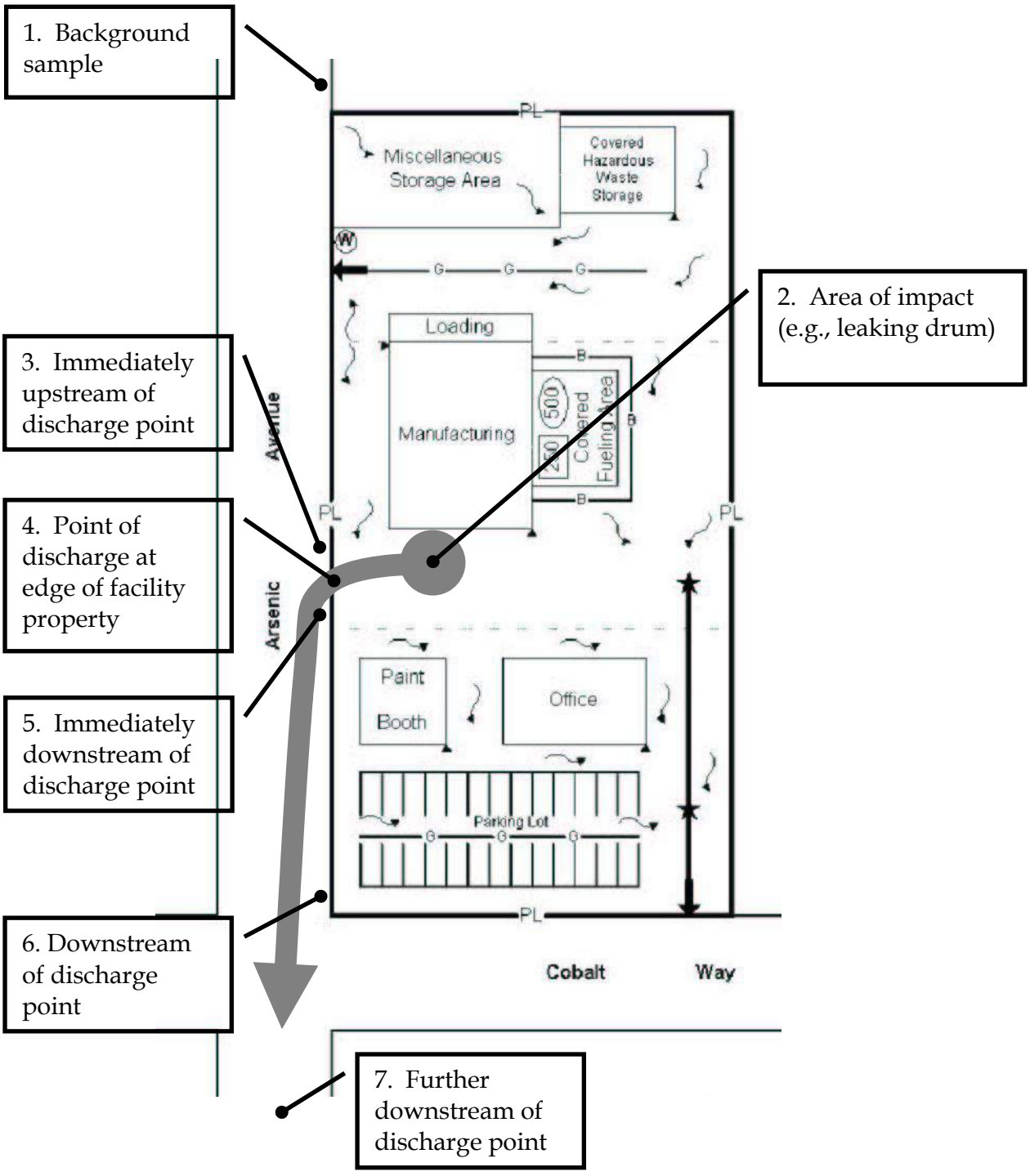
☐ Verify with the laboratory that the sample, once collected, will be analyzed within the accepted holding time.

Sampling Strategy

☐ In general, the sampling strategy used to identify the facility as the responsible party of the incident includes monitoring of up gradient, point of discharge, and down gradient sites. This strategy is illustrated in **Figure 9-1** and described below.

- Background Sample – Site #1. The background sample will provide a baseline value for comparative purposes.
- Impacted Area – Site #2. This site will provide concentrations for the initial point of discharge.
- Immediately Upstream – Site #3. Sites 3 through 5 will identify what the pollutant concentration was once it entered the public right of way and potentially co-mingled with other upstream waters.
- At Point of Discharge – Site #4 (See Site #3)
- Immediately Downstream – Site #5 (See Site #3)
- Further Downstream – Site #6 and 7. Sites 6 and 7 will allow the Inspector/Responder to track the pollutant as it flows downstream and continues to co-mingle with other waters. The addition of downstream samples will vary on a case by case basis.

Figure 9-1
Sampling Strategy



After Sampling:

- ☐ Note both the identification number and the location from which the sample was obtained in the sample log (**Appendix E**).
- ☐ Preserve all samples as required by the analytical method(s) (**Appendix E**).
- ☐ Seal the sample container with evidence tape and store the sample on ice in a secure area until delivered to the laboratory for analysis.
- ☐ Photograph all sample containers and the location of sampling.
- ☐ Upon request, and if possible, the discharger should be provided with a split sample of each sample obtained.
- ☐ Follow chain of custody requirements for the collection, retention, and analysis of samples (see discussion on following page and **Appendix E**).
- ☐ Request that the laboratory return the sample when the analyses are completed.
- ☐ Retain the sample in a secured, refrigerated area until the incident is no longer pending.

Chain of Custody Form:

Although the Chain of Custody forms vary from lab to lab, they generally require the following information:

- **Sampling Location:** Identify the exact sampling location.
- **Contact Person:** This individual is the person the laboratory can contact for further direction. In most cases, the contact person will be the Inspector or Responder.
- **Phone #:** The direct line of the contact person.
- **Sampled By:** This individual is the person that physically collected the samples and is responsible for the integrity of the samples until they are properly relinquished.
- **Case #:** Enter the case or equivalent (PNIR) identifying number
- **Contract Lab:** List the contract laboratory, which should be a state certified analytical laboratory.
- **Contract Lab Log Number:** The lab personnel fill this in.

- **Sample Number:** Same as sample ID on label.

- **Date and Time Sampled:** Fill out the date and time that the sample was collected.

- **No. of Containers:** Enter the number of sample containers with the same sample number.

- **Sample Matrix:** Describe the sample matrix (aqueous, sediment, etc.)

- **Sample Description:** Depth, color, odor, and other pertinent characteristics should be noted.

- **Analysis Required:** Either designate a US EPA analytical method or designate particular compounds for which the sample needs to be analyzed. The contract laboratory can be consulted for assistance with this.

- **Remarks:** Any pertinent information the lab will require should be entered here. Examples include the designation of diesel or gasoline for the US EPA modified 8015 method; safety precautions for laboratory personnel; and a note to ensure the return of the sample evidence to the Agency for use during trial, if necessary.

The bottom half of the form is typically reserved for custody changes. Each time the custody of the samples changes (i.e., a change in responsibility for the samples), two signatures should be provided: one from the person relinquishing the sample, and one from the recipient. As a rule, the number of custody changes should be minimized.

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10.0 PHOTOGRAPHS

Although photography is one of the best tools for documenting incidents, it is also one underutilized by Inspectors/Responders. Photographic documentation can occur with a variety of processes, including film, video, and digital imagery. Photographic evidence has been known to have more real and subjective influence on a case than solid technical data because of its ability to tie things together and add perspective. When the Inspector/Responder uses photographic documentation properly, it is possible to generate an accurate image of events that occurred. During the course of an investigation, it may be necessary to take photographs to record visual observations and to document evidence for possible future enforcement action.

Correcting Common Misconceptions About Photography

- **Each photograph does not require burdensome information** about camera, film, lens, aperture, shutter speed, photographer, and weather to be recorded with every shot. This information may be helpful, but it is usually not critical unless your photographs will be compared with the photography of others.

- **The facility does not have the right to process your film.** The Inspector/Responder can process the film and provide the facility with duplicate copies for their records. If the facility has concerns about confidentiality of processes, they can communicate these concerns to the Inspector/Responder.

- **Some facilities may believe that denial of photography is not denial of entry.** This is up to the Inspector/Responder. If the Inspector/Responder cannot properly document the investigation, then it may in fact be construed as a denial of entry.

Common Problems with Photographic Images

- **Too few photographs:** Enough photographs should be taken so that outside parties can understand what occurred since they may not have been present when the investigation took place.

- **Poor quality photographs:** It is important that the critical issues that occurred on site are clearly presented in the photographs.

- **Failure to identify the subject in a photograph:** Be mindful of the photograph's contents while taking it. What needs to be shown? Make the photographs tell the story. Log what each photograph is intended to show.

- **Failure to secure the original:** Original photographs should be in controlled custody (negatives, video tapes, and original digital images). Original digital images can also be saved to alternate storage media to create an "archival original" that is labeled as such and kept secure. Any enhancements needed should only be made to a copy. Never edit the original or archival original.

Photographic Medium

- **Polaroids** can be messy and time consuming. In addition, readily available Polaroid films do not provide a negative for future prints, rendering them minimally useful.

- **35 mm Prints** can be processed quickly at many one-hour processing facilities. Intentional over- or underexposure can be completely eliminated by commercial print processing. The advantage of 35 mm film is that the prints are easy to view when reviewing the report. Prints can also be enlarged; however, they are difficult to make into slides, and care must be taken with the negatives.

- **Slides** are easy to store in a small area and can be made into prints. They also offer the finest grain for detailed enlargements and can easily be shown to large numbers of people.

- **Digital stills and videography** are rapidly gaining popularity. They provide instantly accessible color images and are easily viewed on common television monitors. Some of the newest video models offer resolution beyond broadcast quality and many have the capability to take single images with the sharpness of a film camera.

  The digital format allows the Inspector/Responder to download video clips and still images directly to their computer for entry into reports or for transmittal by the Internet. Digital still cameras are approaching the resolution of color film and offer wider shadow and light tolerance. Another consideration is the lower operating cost of digital photography. The initial cost of a medium quality digital still camera is slightly more than that of a medium quality film camera; however, this is quickly changing. Over time, the cost of film becomes a serious consideration. Digital media may be downloaded into a "conformed CD archive" that takes little space and will remain uncorrupted for many decades. The original tape or disk may be used over and over again.

- **Video photography** offers the Inspector/Responder the ability to record motion; however, excessive motion is the most common problem encountered with video. The camera should be held steady, with "panning" and "zooms" kept to a minimum. Rather than making the camera move, the images in the frame should move. Only use a "pan" or "zoom" when the relationship of the subject to its surroundings is critical. When zooming or panning is necessary, keep the movement slow and steady. The optimal ratio of "still" camera shots to pan or zoom shots is 10 (or more) to 1.

  Although digital video has some of the highest quality sound recording capability available, this capability also has its drawbacks. The microphone will detect most every sound, including comments the Inspector/Responder may not want recorded. Prior to recording, the Inspector/Responder should think about what should be recorded. One method of avoiding unwanted background noise is to keep the lens

cap on and narrate what the next scene is about to show, then turn the sound recording off and record only the video portion.

When taking photographs the Inspector/Responder should:

- Photograph the areas pertinent to the investigation.
- Choose the appropriate photographic medium. Slides, prints, digital, or video all have their place and applications (see previous discussion). The most important factor is to learn to be expertly proficient with whatever media is chosen. A sharp, clearly lit photograph is often only second to the Inspector/Responder's personal observations of a subject when it comes to evidence.
- The first and last photo taken of any series of documentation or evidence should be a poster or paper indicating the date and the case name.
- Document photographs with a written narrative in the photograph log sheet (**Appendix F**) or Field Notebook indicating:
    - Location where photograph is taken;
    - Date and time of photograph; if possible, use the camera's date/time stamp option;
    - Name of photographer; and
    - Description of contents of the photo, including buildings, markers, and items depicted in the photograph

The goal in preparation of a written narrative is to allow someone not present at the scene to match the photographer's description to the photographs. This step assists in verifying that the Inspector/Responder did, in fact, take the picture, and they can accurately testify as to what it shows. The written narrative should be prepared as near in time as possible to taking the photograph.

The Basic 35 mm or Digital Photo Documentation Kit

- ☐ Camera and normal lens in good working order
- ☐ A haze filter to protect the lens
- ☐ Extra battery for camera
- ☐ Extra batteries for flash
- ☐ Extra film or digital memory cards (3 or 4 times what you think you will need)
- ☐ Post-it® notes to identify the subject while it is being photographed
- ☐ Waterproof notebook and pen
- ☐ Small 6-inch ruler for size reference
- ☐ Compass to note orientation of the photograph
- ☐ Convenient carrying case
- ☐ **Optional equipment** might include:
    - o A polarizing filter to subdue reflections and allow for the easier capture of images through glass.
    - o A wide-angle lens for interior photography and confined spaces.
    - o Telephoto lenses for open fields, surveillance at a distance, or in situations where safety issues might prevent the Inspector/Responder from getting closer to the subject.

Photo Documentation Should Tell a Story

When photographing an incident, the documentation should tell a story by using three basic kinds of photographs: the establishing shot, the medium or subject shot, and the close-up.

A. Establishing shot: Shows a wide area that includes the subject and a fixed landmark to establish location and help the viewer understand where the subject is located.

B. Medium or subject shot: Shows the entire object or special area of an event that the photographer wants to emphasize to the viewer.

C. Tight or detail shot: Shows details of the object or event that makes it unique and different from other similar objects that may be in the same area.

The Importance of Perspective

A photograph can have only one perspective at a time. Altering the perspective requires more than one photograph. Each of the categories of photographs described above may require shots taken from several different perspectives to fully document what the photographer needs to illustrate. For example:

- It may be important to show the subject from all sides if the absence of marking or labels is significant to compliance.
- If it is important to show that an object is near a waterway, the Inspector/Responder may choose to take several establishing shots from both upstream and downstream as well as from both sides of the waterway.
- If there are many similar objects nearby, the Inspector/Responder should take as many perspectives and close-up photographs as necessary to document the unique markings, position, and characteristics of the subject.
- The three photographs below depict the "subject" (drum) from several perspectives. They also show that only the drum was leaking, and the liquid was flowing from the drum onto the concrete pad and from the pad to the soil. Each of these photographs shows a specific "element" of proof.

11.0 REVIEWING RECORDS

In addition to the authorization for the Inspector/Responders to obtain samples and photographs, the Model Water Quality Ordinance authorizes the Inspector/Responder to review facility records as a part of an investigation to:

- Determine if the records required are present and maintained;
- Determine if the records are accurate and authentic; and
- Assist in substantiating compliance.

The records that may be useful to the Inspector/Responder during the investigation include, but are not limited to, the following:

- Annual Reports
- Monitoring Reports
- Training Records
- Stormwater Pollution Prevention Plans
- Manifests
- Water Quality Management Plans
- Spill Reports

Although the Inspector/Responder should review original records, this may be complicated since many records are kept as databases on computer systems. When reviewing hard copy documents, the Inspector/Responder should identify records that need to be copied.

Reviewing Records

- ☐ Cross-check summary reports with the original data whenever possible.
- ☐ Check for completeness and accuracy of records and reports.
- ☐ Determine if records are kept for the required length of time and reporting periods.
- ☐ Compare information contained in the records and databases with firsthand observations.
- ☐ Compare current reports with past reports.
- ☐ In the field logbook, note:
    - o Method of record review (e.g., complete audit, random sampling, peak production months, every other record, specific dates or topics, outgoing shipments, or discharge monitoring report exceedances);
    - o What the document is;
    - o Physical location of original document;
    - o Who was responsible for keeping the records;
    - o Who presented the document; and
    - o Whether records were kept in computer databases or in hardcopy.
- ☐ Request copies of all documents that are relevant to potential noncompliance.
- ☐ On each document, note:
    - o Inspector/Responder's initials; and
    - o Date the document was taken.

12.0 CLOSING CONFERENCE

The closing conference presents an opportunity to confirm observations, review preliminary findings, and discuss the clean-up requirements (when applicable) with the facility contact.

Review Observations/Request Clarification

During the closing conference the Inspector/Responder should review observations and request clarification for particular observations or issues. Requesting clarification during the investigation is especially important if new materials are provided by the facility at a later time or if they claim that the Inspector/Responder never requested the relevant information.

If litigation takes place at some later date it is not uncommon for opposing counsel to argue impropriety, negligence, or even incompetence. They may make accusations like, "…you did not indicate that anything was a problem", or, "… if you had, my client would have provided the information." The closing conference is the Inspector/Responder's chance to review and verify all significant observations and request clarification or further documentation. Note what was reviewed, what requests were made and to whom (if further documentation was requested), and when that documentation was to be provided.

Review Preliminary Findings

There is a fine line between informing the facility that there "may be serious issues of noncompliance" and telling them that there were specific violations. There are similar cautions not to conclude that, "There were no violations." The Inspector/Responder should temper observations with phrases like this: "In my experience, this appears to be a violation of *(a particular citation in the Water Quality Ordinance)*." This way, the Inspector/Responder points out the issue but clarifies that the Agency must make the final determination. The Inspector/Responder has not compromised any options the Agency may have nor confirmed absolutely that a violation has or has not taken place.

On-Site Compliance Determinations
Unless there is a specific authority or City policy to make on-site compliance determinations, the Inspector/Responder should not make them. It is not the Inspector/Responder's role to unilaterally circumvent the City's review and compliance options. There are some cases where small issues or even penalties may be issued by the Inspector/Responder. This would be similar to a policeman writing a ticket. Larger issues with greater liability usually have more extensive checks and balances required "due Process" before making a final compliance determination.

Often, a facility manager may seek the Inspector/Responder's advice on improvements or actions they must take to come into compliance. The Inspector/Responder should carefully discuss the matter with the appropriate Agency staff beforehand regarding the type and extent of advice that should be given. Simple, straightforward advice is usually fine, but the Inspector/Responder's role may become unclear if they act as a consultant to the facility. The Agency may serve this role, but they should use other personnel so as not to jeopardize the Inspector/Responder's role.

Clean-Up Requirements

During the closing conference, the Inspector/Responder should review the clean-up requirements with the facility to ensure they secure the appropriate resources and conduct an adequate clean-up so the impacted area is restored.

Emergency Funds
In certain situations, clean-ups that exceed $25,000 may be eligible for State and Federal emergency funds. Additional information may be obtained by contacting the State Water Resources Control Board or Coast Guard, respectively.

Since clean-up costs may be substantial, the Inspector/Responder should determine how clean-up costs will be paid. Prior to initiating spill clean-up, it is essential that the responsible party clearly accepts or denies responsibility for clean-up and response costs. If the responsible party does not accept responsibility for the clean-up, the Inspector/Responder's Agency may need to contract with a clean-up company. To prepare for this situation, the Inspector/Responder should be authorized to expend funds to initiate clean-ups. This authorization usually states that the individual has signature authority for contracting private clean-up companies to conduct clean-up without the usual purchasing procedure. The Inspector/Responder may oversee the clean-up to ensure it is done correctly and to protect the responsible party from excessive and/or unnecessary charges.

After the clean-up is completed, a follow-up inspection is conducted to ensure that the clean-up was adequate. The follow up investigation tasks may include the following:

- Verify that the problem has been mitigated.
- Checking for any residues in the street curbside, storm drain, or channel.
- Monitoring (using applicable field instrumentation) for pH, conductivity, or hydrocarbons at random locations which may have been affected by the incident.
- Collecting and analyzing random samples to verify pollutant removal.
- Requesting additional clean-up of areas (as needed).

13.0 ENFORCEMENT

As discussed earlier, investigations are part of the response process. The purpose of the investigative procedure is to obtain legally defensible documentation to prepare for the possibility of court action. Incidents vary in terms of severity, and during the course of the investigation, the type of enforcement action necessary – administrative or criminal – may become clear. Regardless of the Inspector/Responder's conclusions and choice of enforcement action, the investigation should provide quality evidence and create an accurate and complete record of the incident that should be, if required, admissible in court.

The Enforcement Consistency Guide provides a framework for the Inspector/Responders to select the type of enforcement that may be pursued (see **Figure 13-1**). Some of the factors that influence this decision include the duration and significance of the violation, the cooperation and willingness of the responsible party to remedy the conditions, whether the incident is isolated or recurring, and whether the violation or potential impacts will have a detrimental effect on human health or the environment.

Although the Enforcement Consistency Guide is the primary reference for enforcement procedures and processes, each Inspector/Responder reserves the right to determine, by their own discretion, how to enforce each violation.

The Inspector/Responders essentially have two types of enforcement tools available to them, administrative and criminal remedies.

13.1 Administrative Remedies

An administrative response is warranted for minor incidents that are isolated or infrequent and occurred without willful intent. The administrative remedies generally include the following:

- **Notices of Non-compliance.** This is the least onerous enforcement tool and constitutes a basic written request that the responsible party rectify the condition causing or threatening to cause non-compliance with the Ordinance.

- **Administrative Compliance Orders.** This is an appropriate enforcement tool when an actual condition of non-compliance exists, but the condition can not be remedied within a relatively short period of time.

- **Cease and Desist Orders.** This is appropriate when immediate action by the responsible party is necessary to stop an existing discharge occurring in violation of the Ordinance. The cease and desist order may also be appropriately issued as a first step in ordering the removal of nuisance conditions threatening to cause an unauthorized discharge of pollutants if exposed to rain or surface water runoff.

- **Educational Letters.** Although the Inspector/Responders primarily rely on the administrative remedies described above, there are still a few occasions when an educational letter is appropriate.

Prior to the issuance of either an Administrative Compliance Order or a Cease and Desist Order to a responsible party, the Inspector/Responder may consider issuing a Notice of Non-compliance, which states the act or acts constituting the violation and directs that the violation be corrected. The Notice of Non-compliance should provide the responsible party with a reasonable time period to correct the violation before further proceedings are brought against them. However, a Notice of Non-compliance should not be the first enforcement method used if circumstances indicate that a more stringent enforcement method is appropriate.

13.2 Criminal Remedies

Criminal enforcement is appropriate when evidence indicates that the responsible party has acted willfully with intent to cause, allow to continue, or conceal a discharge in violation of the Ordinance.

The criminal remedies generally include the following:

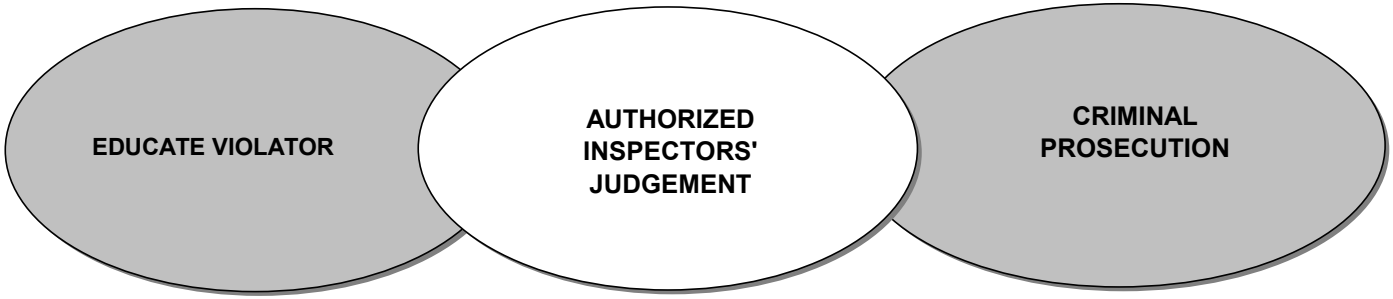
- **Issuance of Citation.** Where criminal enforcement is indicated, and the Inspector /Responder witnesses the violation, the Inspector/Responder may cause issuance of a citation to the responsible party.

- **Infractions.** At the discretion of the Enforcing Attorney, misdemeanor acts may be treated as infractions. An infraction is punishable by a fine of not more than $100 for the first violation, $200 for a second violation, and a fine not exceeding $500 for each additional violation occurring within one year.

- **Misdemeanors.** Criminal enforcement is appropriate when the evidence indicates that the violator of the Ordinance has acted willfully with intent to cause, allow to continue, or conceal a discharge in violation of the Ordinance.

If the case is packaged, more severe remedies may be implemented (e.g., fines, imprisonment). The Ordinance also provides for appeals of the Inspector/Responder's decisions to a designated Hearing Officer. The final decisions of Hearing Officers (or city counsel, if a hearing officer's decision is not final or is appealed to the city counsel) are allowed to be appealed to the court with proper jurisdiction under statutory review procedures. For further information on the administrative hearing process, see the Enforcement Consistency Guide.

Figure 13-1
Enforcement Options

ENFORCEMENT OPTIONS	ADMINISTRATIVE ACTIONS			CRIMINAL ACTIONS
	NOTICE OF NON-COMPLIANCE	ADMINISTRATIVE COMPLIANCE ORDER	CEASE & DESIST ORDER	INFRACTIONS AND MISDEMEANORS
COMPLIANCE STRATEGY				
Threat Level	Insignificant	Not Significant	Might be Significant	Significant
Environmental Harm	None	Not Immediate	Potential/Immediate	Actual/Immediate
Event Duration	Short	Short	Long/Continuous	Long/Continuous
Event Frequency	Isolated	Infrequent	Frequent/Ongoing	Frequent/Ongoing
Cooperation	Readily Complies	Working to Comply	Uncooperative/Slow to Comply	Non-Responsive
Intent	Unknowingly	Not Wilfull	Possible Willful	Willful

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13.3 Case Packaging

If, after the investigation, the Inspector/Responder believes that the incident should be prosecuted, the case should be packaged for review by City Counsel or the District Attorney. An example case template is included in **Appendix G** to assist in this process. The packaging of the case should follow the same philosophy as the investigative report and be thorough so that it includes all necessary exhibits.

What to include in the Case Package

- ☐ The **case package** should be in 1" three-ring binder with labeled tab dividers.
- ☐ **Cover page.** Include the agency contact information, the name of the business that was investigated, the name(s) of the suspects, specific violations, and all relevant reporting forms, logbook sheets, etc.
- ☐ **Synopsis**. A summary of the illegal activity, the specific codes violated, and a description of how they were violated. Indicate how the Agency verified that the laws were violated (i.e., surveillance, monitoring, etc.).
- ☐ **Background.** A chronological explanation of past incidents. Refer to old reporting forms, logbooks and include them in the Exhibits List. Other key pieces of information the Agency has regarding the history of the individuals or business should be referenced and their supporting documents included with the other exhibits.
- ☐ **Narrative**. A personal witness account by the Inspector/Responder. Key pieces of information include the Inspector/Responder's name, position, employment location, investigation experience, how the investigation was conducted (including specific time, date, and references to Exhibit information), and a conclusion.
- ☐ **Environmental Impacts**. A one-page description of what occurs when this type of material is introduced in the environment and the human health issues associated with the material. Discuss the sample results. All sources of information should be referenced.
- ☐ **Witness List.** Include the contact information and interview notes from all witnesses interviewed.
- ☐ **Recommendations.** The Inspector/Responder should recommend that the case be filed through the Orange County District Attorney's office for criminal or civil prosecution. A copy of this case should also be forwarded to the Attorney General's Office for disciplinary action against all licensees involved.

☐ **Exhibits.** The specific exhibits should be separated into sections and labeled with their exhibit number and name. Any piece of evidence that has relevance to the case should be included within the proper exhibit. All photographic evidence should be one exhibit, all sample information should be one exhibit, etc.. The following list is just an idea of likely exhibits; not all cases will contain these exhibits.

- Case Chronology
- Reporting form/logbook
- Photographs
    - Give description of what each photo is showing
- Samples
    - Include everything from chain of custody to laboratory results
- Maps/Diagrams
- Witness Interviews and Statements
- Past problems related to the subject
- Past Letters sent to the subject
- Material Safety Data Sheets for the materials involved

14.0 MULTI-AGENCY INVESTIGATIONS

Multi-agency investigations are agency-level activities, rather than individual media or program activities, which have high visibility because they capture the extent of facility compliance under several regulatory authorities at one time. Although multi-agency investigations require all of the methods used in a single agency investigation, they typically utilize more surveillance and require a fair amount of coordination among the various agencies in order to be effective.

Within Orange County, the Orange County Hazardous Materials Strike Force (Strike Force) assists regulatory agencies in targeting facilities that potentially have multi-agency violations. The Strike Force provides *teamwork*; critical *coordination*; ensures rapid, accurate and clear *communication*; maintains *a chain of command*; and protects *confidentiality*.

1. *Teamwork* is the cornerstone to any work involving more than a single person. Members of the team must respect the work required of other team members. The team leader or lead agency should serve as the central focus of critical information and encourage team members to share information within the bounds of the team and its objectives. If a single member begins to act alone and without consideration to other members, the entire effort may be placed in jeopardy.

2. *Coordination* and planning are critical to the smooth execution of any exercise. It is especially important where there is a potential for an enforcement action.

3. *Communication* must be maintained through all phases of the planning, preparation, and execution of the investigation, as well as case development and potential referral.

4. A *chain-of-command* is necessary for coordination. This will assist in dealing with issues affecting two or more team members or problems that arise between the facility and the team. Facility staff quickly learn that they can disrupt an investigation by dividing team members and creating confusion.

5. *Confidentiality* must be maintained throughout the entire exercise, from planning to enforcement referral. This applies to all activities and communications outside the team.

Since many members of the regulated community are affected by multi-agency investigations, such investigative methods may provide a foundation for establishing more efficient and innovative routes to compliance. The typical planning phases and investigative operations of a multi-agency investigation are summarized below.

Typical Early Planning Phases of a Multi-Agency Investigation

- **Targeting** the facility through a neutral investigation scheme by the cooperative input of regulatory agencies.
- **"Need to Know"** distribution of information to agency managers.
- **Deciding which media or regulatory programs** should be covered at each targeted site.
- **Selection of specific Inspector/Responders** for each site investigation.
- **Scheduling** by those responsible for coordinating and conducting the investigations.
    - The sequence in which specific activities are conducted will vary based upon investigation priorities. If the specific media investigation is broad in scope, will be complex because of an extensive permit, or involves sampling, it will usually be scheduled toward the beginning of the multimedia investigation period to allow extra time.
    - Placing the broader based investigations first also allows an early overview of the entire facility, operations, and processes, which can be shared with other investigation team members. Every site requires continual adjustment and modification of the team schedule and methodologies. Each step must be justified and defensible through Quality Assurance/Quality Control documentation. Not doing this could negate the viability of the entire effort.
- **Logistics and planning** for each site. It is imperative that confidentiality be maintained throughout investigation planning and scheduling. Even the most casual mention of a targeted site can leak out and create frustrating and unnecessary damage control. Communication should be limited to face to face contact, controlled telephone access, or written communication stamped "Confidential".

Example Multi-Agency Investigation Activities

☐ **History and Liaison Work.** Facility history, processes, and potential concerns

☐ **Surveillance of Facility**
- Includes outside movement of trucks, drums, dumpsters
- Financial check and corporation status of company
- Mass balance of product and waste stream
- Photograph facility and outside operations
- Evaluate target by covert sewer monitoring
- Check exterior of target facility property
  - Dumping wastes to back lot soils
  - Pumping wastes to street storm drains
  - Pouring wastes into trenches/crushing drums/burying

☐ **Build Foundation of Case**
- Observations and surveillance results
- Photographs
- Informants' accounts
- Establish probable cause for search warrant

☐ **Operation Planning**
- Facility photographs/plans
- Photographs of grounds from all sides of facility
- Aerial photos of large target facilities (for briefing)
- Obtain floor plan of building if possible

☐ **Location of Hazardous Materials Storage and Processing Areas**

☐ **Pre-Operation Briefing**
- Full briefing with all team members on scene
  - Objectives and goals of operation
  - Ensure all safety equipment is on scene
  - Time frame and team entrance order and timing
  - If target facility employees leave, they will not be allowed to return
  - Control plan: Who may enter while service of warrant is occurring
  - Advise all team members who provides press and media information
  - Assign press information officer
  - Establish radio communications with all team members and leaders
  - Request that team leaders give periodic updates

☐ **Post-Operation Debriefing**
- Full debriefing with all team members on scene
  - Complete evaluation/discussion of operation
  - Collect film for processing
  - Appropriate agency transports chemical samples to laboratory
  - Evidence transported to evidence lockers
  - Teams disband

☐ **Packaging of Case**

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15.0 TRAINING OPPORTUNITIES

In addition to the general guidance that is provided within the Manual, various outside agency training opportunities were identified as having potential benefit for the Inspector/Responders. The training sessions are provided by several agencies and organizations, including the:

- California Air Resources Board (ARB)
- California Environmental Protection Agency (Cal/EPA)
- California Water Environment Association (CWEA)
- United States Environmental Protection Agency's National Enforcement Training Institute
- Western States Project (WSP)

The training opportunities available from the agencies/organizations listed above are detailed on the following pages. For each agency/organization, the following information is provided:

- Name of the organization;
- Website address;
- Contact information (contact person, postal service address, phone number, and email address);
- Type of training offered;
- When the training is typically offered; and
- A short description of the training session content.

CALIFORNIA AIR RESOURCES BOARD (ARB)

Website: http://www.arb.ca.gov/Training/enfsym.htm

Contact Information:

Jacqueline Wilson
Air Resources Board, Stationary Source Division
P.O. Box 2815, Sacramento, CA 95812

Phone: (916) 322-8272

Email: arbtrain@arb.ca.gov

Training Offered: Cal/EPA Environmental Cross Media Enforcement Symposium

When Offered: Annually

Description:

The course objective is to provide a forum where participants can gain knowledge about advanced enforcement techniques.

The Symposium focuses on enforcement subjects involving each program/media (air, water, waste, toxics, and pesticides) and possible cross media, and cross program impacts. This interdisciplinary approach recognizes that many environmental issues cannot be fully addressed without the involvement of more than one environmental regulatory entity.

Participants meet with top enforcement professionals and learn proven techniques to improve the effectiveness of inspection, investigation, and administrative, civil, and criminal enforcement practices. Participants learn how to identify different violations encountered in each media, determine what agencies may need notification after violations are identified, whether violations may be administrative, civil, or criminal offenses, and what follow-up enforcement actions need to be taken.

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY (CAL/EPA)

Website: http://www.calepa.ca.gov/Enforcement/Training/

Contact Information:

Cal/EPA Inspector Certification Program
Nancy Thompson, Program Coordinator

Phone: (916) 322-2227

Email: nthompso@arb.ca.gov

Training Offered: Course 310: The Cal/EPA Basic Inspector Academy

When Offered: Location, Dates vary

Description:

The Basic Inspector Academy (BIA) is designed to teach environmental agency inspectors and other compliance professionals core knowledge and skills and to encourage cross-media awareness needed to conduct quality inspections. The objective of the program is to ensure consistent, effective, and coordinated compliance and enforcement actions to protect public health and the environment.

The BIA is taught by a multi-disciplinary team of instructors, environmental professionals, and attorneys, encompassing a cross-media approach to environmental issues. The course is approximately 40 hours of classroom instruction for training environmental agency inspectors and enforcement personnel. The following topics are covered through lecture, interactive exercises, and a mock inspection:

- Roles and Responsibilities of the Cal/EPA Agencies
- Role of the Inspector
- Environmental Law
- Environmental Chemistry
- Inspection Overview
- Personal Safety in the Field
- Interviewing Skills
- Evidence and Sample Collection
- Elements of a Violation
- Resolving Violations
- Working with Task Forces
- Report Writing
- Report Analysis
- Testimony Skills

CALIFORNIA WATER ENVIRONMENT ASSOCIATION (CWEA)

Website: http://www.cwea.org, http://www.cwea.org/et_attendees_conferences.shtml

Contact Information: http://www.cwea.org

Training Offered: Pretreatment Pollution Prevention & Stormwater Conference

When Offered: Annually

Description:

Environmental Compliance Inspector Training. This one-day training is geared toward both new and seasoned inspectors. Topics covered will include an overview of regulatory agencies and pretreatment programs, conducting compliance inspections, GIS as a tool for inspectors, environmental crimes investigation, criminal environmental enforcement, privatization, and flow measurement.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL ENFORCEMENT TRAINING INSTITUTE

Website: http://www.netionline.com/

Contact Information:
For registration information and assistance, call 202-564-2430

Training Offered: Various courses

When Offered: Location, Dates vary.

Description:

CST109: Basic Inspector Course: Classroom
This 4-day introductory course is designed for new federal, state, local, and tribal environmental inspectors. The course provides an overview of all aspects of inspection preparation, conduct, and follow-up. The course also introduces various federal environmental laws and regulations.

Course Contact: Jeffrey Day, ranger@wampanoagtribe.net, 508-645-9265

CRM110: Environmental Crimes Awareness and Evidence Collection
This 1-day workshop is designed to train civil enforcement personnel and local law enforcement to recognize environmental crime and respond appropriately. Topics include a review of federal statutes for air, water, and hazardous waste and the collection and safeguarding of chemical and other physical evidence found at potential environmental crime scenes.

Contact: Steven Drielak, drielak.steven@epamail.epa.gov, 631-965-3910

WESTERN STATES PROJECT (WSP)

Website: www.regionalassociations.org

Contact Information: Andrea Frausto

Phone: (602) 542-8511

Email: andreafrausto@earthlink.net

Training Offered: Introduction to Environmental Criminal Investigations; Introduction to Environmental Enforcement

When Offered: Location, Dates vary.

Description:

CRM108: Introduction to Environmental Criminal Investigations (WSP)
This 3-day course is designed to cross-train environmental regulators and criminal investigators in the methods and the techniques of investigating environmental crimes. The course offers joint presentations on topics of benefit to both disciplines but also includes breakout sessions for specific investigator or regulator topics. The course emphasizes a team approach to environmental crime enforcement.

CRM205: Introduction to Environmental Enforcement (WSP)
This 2-day course consists of two sessions provided in a parallel session format. One session trains regulatory personnel in enforcement techniques and the legal aspects surrounding environmental cases, while the other trains public sector environmental attorneys in scientific and technical disciplines associated with environmental cases. This course emphasizes administrative and civil enforcement methods and includes sessions on negotiations, pollution prevention, bankruptcy, and other topics of current interest in civil enforcement.

16.0 REFERENCES

California Certified Unified Program Agencies (CUPA). Basic Hazardous Waste Inspector Training. Proceedings of Conference, February 2-5, 2004.

County of Orange. 2003 Drainage Area Management Plan.

Jensen & Associates, LLP and ESCI EnviroSciences, Inc. Preparing for and Managing Regulatory Agency Inspections: Understanding Rights of Entry and Managing the Process.

Kinnings, Kip. Environmental Crime Unit, Orange County District Attorney. Presentation on Environmental Investigations.

United States. Environmental Protection Agency. Conducting Environmental Compliance Inspections. Inspector's Manual. International Edition. August 2002.

Various authors. Proceedings of Conference, Environmental Crime Scene Investigation: Tools and Techniques, Riverside, CA; University of California Riverside, Extension: Riverside, CA, 2002.

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Appendix A

- Example Agency Notification List
- Example List of Local Emergency Response Clean-up Companies

Example Agency Notification List

Agency Notification List	
Situation	**Notify**
Emergency	Local Fire Dept. – 911 State Office of Emergency Services (800) 852-7550 Orange County Control One – (714) 628-7000 National Response Center – (800) 424-8802
NPDES Notification/Reporting Regional Water Quality Control Boards	Jeremy Haas San Diego Regional Water Quality Control Board 9174 Sky Park Court, Suite 100 San Diego Ca 92123-4340 E-Mail: haasj@waterboards.ca.gov Telephone: (858) 467-2735 Fax: (858) 571-6972 Mark Smythe Santa Ana Regional Water Quality Control Board 3737 Main Street, Suite 500 Riverside, CA 92501 Telephone: (951) 782-4998
County Storm drain/Flood channels	County/RDMD (714) 567-6363
Creeks & Streams	California Department of Fish & Game (310) 590-5412
Bay, harbor, ocean	United States Coast Guard (562) 980-4444
Hazardous waste/Private Property Impacts	County of Orange Health Care Agency (714) 667-3700
Proposition 65 Notifications	County of Orange Health Care Agency (714) 667-3765
Air Impacts	Air Quality Management District (909) 396-2360
Soil Impacts	Department of Toxic Substances Control (714) 484-5396
Sewage Spills	Local Sanitation District
Criminal Offense	Orange County District Attorney (714) 347-8716

EXAMPLE LIST OF
LOCAL EMERGENCY RESPONSE CLEAN-UP COMPANIES

MAJOR CLEAN-UP	SPECIALTY/COMMENTS
ADVANCED CLEANUP TECHNOLOGIES, INC. (A.C.T.I) 18414 S Santa Fe Ave. Rancho Dominguez, Ca 90221 (800)334-ACTI (2284) or (310)763-1423	Complete service/24 hrs
ANCON MARINE 2250 E. Dominguez St., Carson, Ca 90810 (310)522-5110	
CLEAN COASTAL WATERS, INC. 190 S. Pico Avenue Long Beach, CA 90802-1097 (562)432-1415 (562)437-1510 – fax	Marine spills/24 hrs
ECOLOGY CONTROL INDUSTRIES 19500 Normandy Avenue Torrance, CA 90502 (800)236-7324 – 24 hr #	Complete service/24 hrs
FOSS ENVIRONMENTAL Pier D, Berth 47, Long Beach, CA 90802 (562)432-1304 John T. Holmes 077	
OCEAN BLUE ENVIRONMENTAL SERVICES 925 West Esther St. Long Beach, CA 90813 (562)624-4120 (562)624-4127 – fax	Complete service/24 hrs contact Scott Tracy, GM

SMALL TO MEDIUM SIZED CLEAN-UP

ADVANCED ENVIRONMENTAL 13579 Whittram Avenue Fontana, CA 92335-2950 (909)356-9025	Complete service24 hrs
CAL HAZARDOUS SERVICE 1431 E. St. Andrew Place Santa Ana, CA 92705 (714)434-9995	Complete service/24 hrs 7 man crew handle small spills
CONSOLIDATED WASTE INDUSTRIES, INC. 145315 S Avalon Blvd. Gardenia Ca 90248 (800)233-3748 or (310) 527-6250	Complete service/24 hrs drug labs
ENVIRONMENTAL DYNAMICS 22222 S. Wilmington Avenue Carson, CA 90745 (310)952-9812	Complete service/24 hrs
ENVIRONMENTAL TRANSLOADING SERVICES 3015 Leones Blvd Vermont Ca, 90058 (213)628-8000 or (800)628-8000 (213)628-0106 fax	Complete service/24 hrs

Note: this list is not all-inclusive and the companies listed are not endorsed by the Permittees, nor are the Permittees affiliated with any of the companies.

SMALL TO MEDIUM SIZED CLEAN-UP (CONT'D)

ENVIRONMENTAL SERVICES 9201 Reading Ave. Westminster Ca 92683 (800)49-WASTE or (714)569-0909	Complete service/24hrs
GRAY, THOMAS & ASSOCIATES, INC. 1205 W. Barclay Avenue Orange, CA 92668 (714)997-8090 (714)997-3561 – fax	Radioactive and chemical waste 24 hr service
HAZPAK, INC. 9980 Cherry Avenue Fontana, CA 92335 (800)326-1011 (909)822-7552 – fax	Complete service/24 hrs
INDUSTRY WASTE UTILIZATION 5601 State Street Montclair, CA 91763 (909)984-9984 (909)984-1510 – fax	
MARTIN ENVIRONMENTAL SERVICES P. O. Box 1128 Santa Clarita, CA 91386-1920 (800)624-9136 (714)212-2048 Judy Weston/pager	Complete service/24 hrs
NEITO AND SONS 1281 Brea Canyon Road Brea, CA 92821 (714)990-6855 (714)990-4862 – fax	Pumping/24 hrs
OILFIELD TRUCKING & TRANSPORTATION 1300 N. Lakeview Anaheim, CA 92807 (714)693-7088	Vacuum truck & high pressure steam cleaning 24 hrs – transport only
ORANGE COUNTY SEPTIC SERVICE & SANITATION CO. P.O. Box 10415 Santa Ana, CA 92711 (714)540-5181 or (714)505-9662 (714)505-9610 – fax	Pumping 24 hr emergency only with permission to dump from sanitation department
PHILIP WEST INDUSTRIAL SERVICE 2222 E. Sepulveda Blvd. Carson, CA 90810-1941 (562)595-1000 (800)275-3660	Complete service/24 hrs
PORT- A-POTTIE (800)638-1233 x302	Pumping regular business hrs M-F, 6-6. For emergency service – dial Ext. to page sales/service rep.
UNITED PUMPING SERVICE 14000 E. Valley Blvd. Industry, CA 91746 (626)961-9326	Complete service/24 hrs

Note: this list is not all-inclusive and the companies listed are not endorsed by the Permittees, nor are the Permittees affiliated with any of the companies.

REGISTERED TRAUMA SCENE MANAGEMENT PRACTITIONERS

CLEAN SCENE SERVICES, INC.
3939 E. First Street Los Angeles, CA 90063
(323)264-8711 Michael Nicholson 003

CCECO
130 McCormick Ave. #113, Costa Mesa, CA 92626
(714)557-7977 Claudia Manavi 014

OCEAN BLUE ENVIRONMENTAL
925 W. Esther St. Long Beach, CA 90812
(562)624-4120 Edward Long 066

SOUTH COAST RESTORATION
2284 N. Glassell, Suites D&E, Orange, CA 92865
(714) 974-0196 Charles Monroe 068

FOSS ENVIRONMENTAL
Pier D, Berth 47, Long Beach, CA 90802
(562)432-1304 John T. Holmes 077

BIOLOGIX, LLC
1016 Las Posas, San Clemente, CA 92673
(888)798-1777 Michael Slaby 099

STATEWIDE TRAUMA SCENE CLEANERS
6406 San Martin Way Buena Park, CA 90620
(800)541-4493 Stephan Wimberly 113

BIOSAFE
4793 Grace Av., Cypress, CA 90630
(714)826-3766 Edward Evans 134

SQUAD 841
1076 Calle Del Cerro # 1914, San Clemente, 92672
(949)291-7502 Paul Reed 148

TRI-TECH RESTORATION
715 Ruberta Ave., Glendale, CA 91201
(818)551-4575 William Gandsey 152

ECOLOGY CONTROL INDUSTRIES, INC.
19500 Normandie Avenue, Torrance, CA 90502
(800)236-7324 Ron Flury 171

PROFESSIONAL CRIME CLEAN-UP SERVICES
12840 Canyon Wind Rd., Riverside, Ca 92503
(909)3520394 Antonio Cappellano

A-1 CLEAN THE SCENE
6185 Magnolia Ave. #198 Riverside, Ca 92506
(888)477-0384

ADVANCED RESTORATION SPECIALIST
2548 Strozier St, South El Monte, Ca 921733
(626)442-7700 Patricia Garcia

CRIME SCENE CLEANERS, RIVERSIDE
11231 Doheny Dr. Riverside, Ca 92505
(800)357-6731 Neal Smither

ANCON MARINE
2250 E. Dominguez St., Carson, Ca 90810
(310)522-5110 Kirk Hansen

UNITED PUMPING SERVICE
14000 E. Valley Blvd.
Industry, CA 91746
(626)961-9326

Note: this list is not all-inclusive and the companies listed are not endorsed by the Permittees, nor are the Permittees affiliated with any of the companies.

Appendix B

- Example List of Field Kit Items

Example List of Field Kit Items

FIELD INVESTIGATION EQUIPMENT AND SUPPLIES			
Activity	**Equipment/Supplies**	**# of Items**	**Location**
Safety	Latex and leather gloves Protective eyeglasses or goggles Rubber boots Elbow length nitrite gloves First aid kit Steel toed boots Drinking water Hat, sunglasses, and sunscreen Cell Phone/Radio		
Field Equipment	Measuring tape Tool kit with nuts, bolts, screws, tie wraps Paper towels Duct tape, cellophane tape Folding ruler (measure flow depth) Stop watch Plastic bucket and rope Sampling rod to collect samples Extra batteries for all meters Manhole cover puller		
Field Screening	Portable field kits: colorimeters, spectrophometer, and all reagents kit Waste disposal bottles pH paper Sample bottles Multi-parameter or individual probes for temperature, conductivity, and pH Deionized water		
Laboratory Analysis	Sample bottles with labels and preservatives Cooler with ice or cold packs Chain of custody forms		
Documentation	Camera (digital preferred) Field notebook and pens Enforcement forms Educational materials Clipboard		
Reference Materials	Municipal Storm Drain System map Street map Emergency contact phone numbers		

Appendix C

- Example Pollution Notification and Investigation Request Form

Identify the type of request:

- Notification – No response necessary – information only
- Complaint – Response necessary – within 2 business days
- Response Request – Response necessary – immediate
- Reconnaissance – Follow up from previous response
- Referral – Provided to agency with jurisdiction

Each form should have a unique, pre-established/printed ID.

Date/time incident occurred

(W) – work #
(H) – home #

i.e. street, storm drain, flood channel

i.e. F01P02, San Diego Creek

i.e. upstream, downstream, cross streets

Briefly describe the incident being reported

Complete if a request is made to have OCFCD respond on behalf of the City

Complete section if information is available

i.e. illegal discharge, fire suppression runoff, etc.

See categories on back of reporting form

Check if completed and fill out accompanying form(s)

Document hours for Response, Documentation and Follow Up

County codes – RH regular hours, OC on call hours

Complete a full report if formal enforcement may occur

Complete if the request was forwarded to the appropriate agency/city with jurisdiction

Form # ____________
Incident Date: ___/___/___
Time: ____:____

POLLUTION NOTIFICATION/INVESTIGATION REQUEST FORM

Notification/Invest. Request

Category: ☐ Notification ☐ Complaint ☐ Response Request ☐ Reconnaissance ☐ Referral to another agency (See Action below)

Information from: ☐ Phone contact ☐ Control One ☐ Website ☐ Pollution hot line ☐ Email

Company/Agency: ____________ email: ____________

Contact: (name) (title/position) phone: (___) ____
(☐County ☐City ☐Federal/State ☐Local ☐Private company ☐Public) (Type ☐ W ☐ H)

Division: ____________ Dept. ____________

Contact address: ____________ city: ____________ state: ______ zip: ______

Notification Information: (other contacts, confidentiality, etc.)

Impacted Site

Affected address: ____________ city: ____________ state: ______ zip: ______

Facility type: (street, storm drain, flood channel, etc.) name: (channel/facility name) map page/grid: ______

Reference: (distance from landmark/cross streets, u/s or d/s from) GPS: lat: ______ lon: ______

Complaint

Complaint/Incident: ____________

Complaint received by: ____________ date: ___/___/___ time: ____:____

☐ Authorization to respond: City: ____________ date: ___/___/___ time: ____:____

Contact: (name) (title/position) phone: (___) ____

Resp. Party

Suspect/RP Type: ☐ City/County ☐ Public ☐ Private company ☐ Unknown

RP name: (company/entity name) email: ____________ phone: (___) ____ (Type ☐ W ☐ H)

Contact: (name) (title/position) fax: (___) ____

Address: ____________ city: ____________ state: ______ zip: ______

Investigation Results

Investigated by: ____________ date: ___/___/___ time: ____:____

Type of discharge: ____________ Waste category: (see back of form)

Waste type: ____________ Amount of waste: ____________

Investigation results: ____________

☐ Photos taken ☐ Samples collected ☐ Witness interviews conducted

Hours spent on investigation: (response) \ (documentation) \ (follow-up) Job code: ______ ☐ OC ☐ RH

Complainant/Requestor contacted ☐ in person ☐ by telephone ☐ by email date: ___/___/___

Action

☐ Hazardous Materials Incident - HMI Report: ____________

☐ Correction required: ____________

☐ Enforcement: ☐ Enforcement letter ☐ Notice of Non-compliance ☐ Administrative Compliance Order
Date: ___/___/___ ☐ Cease and Desist Order ☐ Citation ☐ Criminal Enforcement

☐ Other Agency Responsibility: (Agency/Dept.)
Contact: (name) email: ______ phone: (___) date: ___/___/___ time: ____:____

☐ Regional Board notification:
Contact: (name) email: ______ phone: (___) date: ___/___/___ time: ____:____

☐ No action - reason: ____________

Data entry by initials: ______ Database input date: ___/___/___

Previous PNIR #s :

dn\PNIRFORM(R0207)

Form #_____

Incident Date: __ __ /__ __ /__ __

Time: __ __ : __ __

POLLUTION NOTIFICATION/INVESTIGATION REQUEST FORM

Notification/Invest. Request

Category: ☐ Notification ☐ Complaint ☐ Response Request ☐ Reconnaissance ☐ Referral to another agency (See Action below)

Information from: ☐ Phone contact ☐ Control One ☐ Website ☐Pollution hot line ☐ Email

Company/Agency: _____ **email:** _____

Contact: (name) _____ (title/position) _____ **phone: (** **)** _____

(☐County ☐City ☐Federal/State ☐Local ☐Private company ☐Public) (Type ☐ W ☐ H)

Division: _____ **Dept.** _____

Contact address: _____ **city:** _____ **state:** _____ **zip:** _____

Notification Information: (other contacts; confidentiality, etc.) _____

Impacted Site

Affected address: _____ **city:** _____ **state:** _____ **zip:** _____

Facility type : (street, stormdrain, flood channel, etc.) _____ **name:** (channel\facility name) _____ **map page/grid:** _____

Reference: (distance from landmark/cross street(s); u/s or d/s from) _____ **GPS: lat:** _____ **lon:** _____

Complaint

Complaint/Incident: _____

_____

_____

Complaint received by: _____ **date:** __ __ /__ __ /__ __ **time:** __ __ : __ __

☐ **Authorization to respond:** **City:** _____ **date:** __ __ /__ __ /__ __ **time:** __ __ : __ __

Contact: (name) _____ (title/position) _____ **phone: (** **)** _____

Resp. Party

Suspect/RP Type: ☐ City/County ☐ Public ☐ Private company ☐ Unknown

RP name: (company/entity name) _____ **email:** _____ **phone: (** **)** _____

(Type ☐ W ☐ H)

Contact: (name) _____ (title/position) _____ **fax: (** **)** _____

Address: _____ **city:** _____ **state:** _____ **zip:** _____

Investigation Results

Investigated by: _____ **date:** __ __ /__ __ /__ __ **time:** __ __ : __ __

Type of discharge: _____ **Waste category:** (see back of form) _____

Waste type: _____ **Amount of waste:** _____

Investigation results: _____

_____

_____

_____

☐ **Photos taken** ☐ **Samples collected** ☐ **Witness interviews conducted**

Hours spent on investigation: (response) \ (documentation) \ (follow-up) **Job code:** _____ ☐ **OC** ☐ **RH**

Complainant/Requestor contacted ☐ **in person** ☐ **by telephone** ☐ **by email** **date:** __ __ /__ __ /__ __

Action

☐ **Hazardous Materials Incident - HMI Report:** _____

☐ **Correction required:** _____

☐ **Enforcement:** ☐ Enforcement letter ☐ Notice of Non-compliance ☐ Adminstrative Compliance Order
Date: __ __ /__ __ /__ __ ☐ Cease and Desist Order ☐ Citation ☐ Criminal Enforcement

☐ **Other Agency Responsibility:** (Agency/Dept.) _____

email: _____

Contact: (name) _____ **phone: (** **)** _____ **date:** __ __ /__ __ /__ __ **time:** __ __ : __ __

☐ **Regional Board notification:**

email: _____

Contact: (name) _____ **phone: (** **)** **date:** __ __ /__ __ /__ __ **time:** __ __ : __ __

☐ **No action - reason:** _____

_____

Data entry by initials: _____ **Database input date:** __ __ /__ __ /__ __

Previous PNIR #s :

PNIR Waste Categories					
Inorganic	**Paint**	**Petroleum Products**	**Sewage**	**Misc**	**Unidentified**
Acids	Dry Scrapings/Residuals	Automotive Fluids	Greywater/Sewage	Animal Waste/Remains	Liquid
Bases	Latex	Crude Oil	Odor	Carpet Cleaning Washwater	Material
Chemicals	Mixtures	Degreasers		Chemicals	Residue
Metals	Oil Based	Diesel		Construction Runoff	Solid
Process Solutions/Wastewater	Wastewater	Gasoline		Dye	Did Not Observe
		Hydraulic Fluid		Ethlyene Glycol	
		Jet Fuel		Fire Supression Runoff	
		Misc		Food Process Wastewater	
		Odor		Grease	
		Sheen		Green Waste/Material	
		Waste Oil/Mixture		Misc.	
				Odor	
				Pool Wastewater	
				Process Wastewater	
				Detergents/Washwater	
				Trash/Debris	
				Silt/Mud	
				Surface/Ground Wate	

Appendix D

- Example Witness Interview Form

Fill out the key pieces of information for each witness who is informally interviewed.

This form should reference the same unique number from the investigation request form so that they are linked.

Example Witness Interview Form

Form#: ☐☐☐☐

Sheet of

Request information about the incident. For example –

Who was involved/ directed the actions? **What** occurred? **When** did it occur? **Where** did the incident occur? **Why** did it occur?

WITNESS INTERVIEW FORM

1. Last Name: _____ **First Name:** _____ **Middle:** _____

Home Address: _____ **City:** _____ **State/Zip:** _____

Home Phone: _____ **Business Phone:** _____ **Cellular/Pager:** _____

Witness Statement: _____

_____

_____

_____

_____

_____

_____

Interviewed by: _____ **Date:** _____ **Time:** _____

---

2. Last Name: _____ **First Name:** _____ **Middle:** _____

Home Address: _____ **City:** _____ **State/Zip:** _____

Home Phone: _____ **Business Phone:** _____ **Cellular/Pager:** _____

Witness Statement: _____

_____

_____

_____

_____

_____

Interviewed by: _____ **Date:** _____ **Time:** _____

Example Witness Interview Form

Form#: ☐☐☐☐

Sheet of

WITNESS INTERVIEW FORM

1. Last Name: _____ **First Name:** _____ **Middle:** _____

Home Address: _____ **City:** _____ **State/Zip:** _____

Home Phone: _____ **Business Phone:** _____ **Cellular/Pager:** _____

Witness Statement: _____

_____

_____

_____

_____

_____

_____

Interviewed by: _____ **Date:** _____ **Time:** _____

2. Last Name: _____ **First Name:** _____ **Middle:** _____

Home Address: _____ **City:** _____ **State/Zip:** _____

Home Phone: _____ **Business Phone:** _____ **Cellular/Pager:** _____

Witness Statement: _____

_____

_____

_____

_____

_____

Interviewed by: _____ **Date:** _____ **Time:** _____

Appendix E

- Example Sample Collection Log Sheet
- Analytical Guidelines
- Chain of Custody

Fill out the key pieces of information for each sample that is collected.

This form should reference the same unique number from the investigation request form so that they are linked.

EXAMPLE SAMPLE COLLECTION LOG SHEET

Identify the date and time that each sample was collected.

Identify the location where each sample was collected.

Identify who collected the sample.

Form#: ☐☐☐☐

Sheet of

Identify what the sample will be analyzed for – pH, metals, etc

Sample	Time / Date	Location / Notes	Sampler	Test Method	Sample Log Book Number
1					WR
2					WR
3					WR
4					WR
5					WR
6					WR
7					WR
8					WR
9					WR
10					WR

If the sample will be logged into an agency sample logbook, identify the appropriate numbers

EXAMPLE SAMPLE COLLECTION LOG SHEET

Form#: | | | | |

Sheet of

Sample	Time / Date	Location / Notes	Sampler	Test Method	Sample Log Book Number
1					WR
2					WR
3					WR
4					WR
5					WR
6					WR
7					WR
8					WR
9					WR
10					WR

Analytical Guidelines

Analytical Parameter	Maximum Holding Time	Container Type[1]	Preservative[1]	Customary Amount[1]
Physical (Field Collected Parameters)				
Dissolved Oxygen (DO)	Immediately	Field Measurement	-	-
pH	Immediately	Plastic / Glass	4°C	250 mL
Conductivity (EC/SC)	28 days	Plastic / Glass	4°C	250 mL
Temperature	Immediately	Field Measurement	-	-
Turbidity	48 hours	Plastic / Glass	4°C	250 mL
Nutrients				
Ammonia (NH_3)	28 days	Plastic / Glass	H_2SO_4 + 4°C	500 mL
Nitrate (NO_3) or Nitrite (NO_2)	48 hours	Plastic / Glass	4°C	250 mL
Nitrate+Nitrite as N (NO_3+N_2-N)	28 days	Plastic / Glass	H_2SO_4 + 4°C	250 mL
Nitrogen, Total Kjeldahl (TKN)	28 days	Plastic / Glass	H_2SO_4 + 4°C	500 mL
Nitrogen, Total Organic (TON)	28 days	Plastic / Glass	H_2SO_4 + 4°C	500 mL
Phosphate, Ortho	48 hours	Plastic / Glass	4°C	250 mL
Phosphate, Total (PO_4)	28 days	Plastic/ Glass	H_2SO_4 + 4°C	250 mL
Metals				
Chromium, Hexavalent (CrVI)	24 hours	Plastic / Glass	4°C	500 mL
Metals, Dissolved[2]	Filter Immediately, 180 days	Plastic / Glass	Filter then add HNO_3	500 mL
Metals, Total	180 days	Plastic / Glass	HNO_3	500 mL
Organics				
Pyrethroids by GCMS-SIM	7 days, Aqueous	Glass Amber Liter	4°C	2 x 1000 mL
Chlorinated Pesticides & PCBs EPA 608/8081/8082	7 days, Aqueous	Glass Amber Liter	4°C	2 x 1000 mL
Polynuclear Aromatic Hydrocarbons (PAH's) EPA 610/8310	7 days, Aqueous	Glass Amber Liter	4°C	2 x 1000 mL
Organophosphorus Pesticides EPA 614/8141	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter	4°C	2 x 1000 mL
Chlorinated Herbicides EPA 615/8151	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter	4°C	2 x 1000 mL
Semivolatile Organics EPA 625/8270	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter	4°C	2 x 1000 mL
Volatile Organics EPA 624	7 days, Aqueous 14 days, Sludge or Solid	Glass VOA vial[3]	HCl + 4°C	6 x 40 mL
TPH Diesel/Motor Oil	14 days	Glass Amber Liter	4°C	2 x 1000 mL
TPH Gas/BTEX/MTBE	14 days, preserved	Glass VOA vial[3]	HCl + 4°C	3 x 40 mL
Phenols EPA 420.2	28 days	Glass Amber Liter	H_2SO_4 + 4°C	200 mL
Conventionals				
Alkalinity	14 days	Plastic / Glass	4°C	250 mL
Biochemical Oxygen Demand (BOD)	48 hours	Plastic / Glass	4°C	500 mL
Chloride (Cl)	28 days	Plastic / Glass	4°C	250 mL
Chlorine, residual	Immediately	Field Measurement	-	-
Chemical Oxygen Demand (COD)	7 days	Plastic / Glass	H_2SO_4 + 4°C	250 mL
Coliform, Total/Fecal	6 hours	Plastic (sterile)	$Na_2S_20_3$ + 4°C	100 mL
Color	48 hours	Plastic / Glass	4°C	250 mL
Dissolved Organic Carbon (DOC)	Filter Immediately, 28 days	Glass VOA vial[3]	Filter then add H2SO4 or HCl + 4°C	2 x 40 mL
Fluoride (F-)	28 days	Plastic / Glass	4°C	250 mL
Hardness by Titration	180 days	Plastic / Glass	HNO_3 + 4°C	500 mL
Odor	6 hours	Glass only	4°C	500 mL
Oil & Grease	28 days	Glass only	HCl + 4°C	100 mL
Solids, Settable	48 hours	Plastic / Glass	4°C	1000 mL
Solids, total (% Solids)	7 days	Plastic / Glass	4°C	250 mL
Solids, Total Dissolved (TDS)	7 days	Plastic / Glass	4°C	250 mL
Solids, Total Suspended (TSS)	7 days	Plastic / Glass	4°C	500 mL
Solids, Volatile Suspended (VSS)	7 days	Plastic / Glass	4°C	500 mL
Sulfate (SO_4)	28 days	Plastic / Glass	4°C	250 mL
Sulfide, Dissolved	7 days	Glass BOD Bottle	$AlCl_3$ + NaOH + 4°C	300 mL
Sulfide, Total	7 days	Glass BOD Bottle	NaOH + ZnOAC + 4°C	300 mL
Sulfite (SO_3)	24 hours (Recommended)	Glass VOA vial[3]	EDTA + 4°C	2 x 40 mL
Surfactants (MBAS)	48 hours	Plastic / Glass	4°C	500 mL
Total Organic Carbon (TOC)	28 days	Glass VOA vial[3]	H_2SO_4 or HCl + 4°C	3 x 40 mL

[1]Container Type, Preservative and Customary Amount may vary by laboratory. Contact the laboratory for more information.

[2]Dissolved metals require field or lab filtration through 0.45 micorn filter prior to preservation.

[3]Volatile organic samples need to be filled without air bubbles or headspace

Note: Multiple analyses may be run from the same container, provided that the type, volume and preservation are appropriate.

This form should reference the same unique number from the investigation request form so that they are linked.

Identify the project name i.e. Magnolia spill, 123 Jones Street, etc.

Agency contact person

Provide instructions to the lab – either when to dispose of the samples or that the agency would like the samples returned after they are analyzed.

CHAIN OF CUSTODY

City of _____

Address

PHONE FAX

PAGE of

LOCATION:

CONTACT: (714) -

PNR #

Analyzed samples disposed of after days.

Analyzed samples returned to OC/PFRD.

CONTRACT LAB:

PA #

JOB #

Lab name

Purchase Agreement or Job # - if applicable

SAMPLE #	DATE & TIME	# CONTAINERS	MATRIX	DESCRIPTION	ANALYSES REQUIRED	REMARKS

Unique sample ID number.

Date and time sample was collected.

Number of containers submitted

See below

Identify the types of analyses that the lab should run – hardness, pH, metals, nutrients, etc.

SIGNATURE	PRINT NAME	ORGANIZATION	DATE	TIME
Relinquished by			/ /	:
Received by			/ /	:
Relinquished by			/ /	:
Received by			/ /	:
Relinquished by			/ /	:
Received by			/ /	:
Relinquished by			/ /	:
Received by			/ /	:

Complete one set of signatures every time the samples exchange hands.

MATRIX

AQ	Aqueous	GW	Groundwater
SW	Seawater	RW	Rainwater
SO	Soil	SD	Sediment

DESCRIPTION

SF	Surface	C	Composite
BT	Bottom	ID	Integrated Depth
G	Grab		

CHAIN OF CUSTODY

PAGE of

City of _____

Address

PHONE FAX

LOCATION:	
CONTACT: (714) -	
PNIR #	

	Analyzed samples disposed of after days.
	Analyzed samples returned to OC/PFRD.
CONTRACT LAB:	
PA #	
JOB #	

SAMPLE #	DATE & TIME	# CONTAINERS	MATRIX	DESCRIPTION	ANALYSES REQUIRED	REMARKS

SIGNATURE	PRINT NAME	ORGANIZATION	DATE	TIME
Relinquished by			/ /	:
Received by			/ /	:
Relinquished by			/ /	:
Received by			/ /	:
Relinquished by			/ /	:
Received by			/ /	:
Relinquished by			/ /	:
Received by			/ /	:

MATRIX

AQ	Aqueous	**GW**	Groundwater
SW	Seawater	**RW**	Rainwater
SO	Soil	**SD**	Sediment

DESCRIPTION

SF	Surface	**C**	Composite
BT	Bottom	**ID**	Integrated Depth
G	Grab		

Appendix F

- Example Photographic Log Sheet

Fill out the key pieces of information for each photograph that is taken.

This form should reference the same unique number from the investigation request form so that they are linked.

Identify the date and time that each photo was taken.

Identify the type of photo taken.

EXAMPLE PHOTOGRAPHIC LOG SHEET

Form#: ☐☐☐☐

Sheet of

Inspector(s):

Photo	Time	Date	35MM, Digital, or Polaroid	Location/Description
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

Identify the location where each photo was taken and what it shows.

EXAMPLE PHOTOGRAPHIC LOG SHEET

Form#: ☐☐☐☐

Sheet of

Inspector(s):

Photo	Time	Date	35MM, Digital, or Polaroid	Location/Description
1				
2				
3				
4				
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25				

Appendix G

- Case Template

<Edit the case template below as needed based on how the city submits cases for prosecution>

(Case Transmittal must be in 1" three-ring binder, with labeled tabs)

INSERT CITY LOGO HERE

NAME OF DEPARTMENT
Address Line 1
Address Line 2
City, State ZIP

SUBJECT: *Name of Business*

SUSPECT(S): *Name of Suspect*
Name of Suspect

VIOLATIONS: *Examples - Clean Water Act, Section 13387(a)(1-7), Fish and Game Code Section 5650, Penal Code Section 374.7(a), (b), etc…*

PNIR #: *List all relevant Pollution Notification and Investigation Request forms (PNIRs)*

<Edit the case template below as needed based on how the city submits cases for prosecution>

INSERT CITY LOGO HERE

NAME OF DEPARTMENT
Address Line 1
Address Line 2
City, State ZIP

INVESTIGATIVE REPORT

SUBJECT #1: *Name of Business*
DBA:
Business Address: *Street Address*
City, State Zip
Business Telephone #:

Contractor License #: *List State Contractor License if applicable*

Business License #: *List State Business License if applicable*
(Other important identifying information)
Owner of Record: *Owner of business*

SUSPECT #1:

Full name:

Address:

Phone Number:

Physical Description
Height: *X' XX"*
Weight: *XXX lbs.*
Eyes: *color* Hair: *color*

Licenses
Driver's License #: *AXXXXX* State: *XX*
Type: *Commercial, Class A, B, C, etc.*
DOB: *XX/XX/XXXX*
Contractor License: *Trade licenses* State: *XX*

SUSPECT #2:

Full name:

Address:

Phone Number:

Physical Description
Height: *X' XX"*
Weight: *XXX lbs.*
Eyes: *color* Hair: *color*

Licenses
Driver's License #: *AXXXXX* State: *XX*
Type: *Commercial, Class A, B, C, etc.*
DOB: *XX/XX/XXXX*
Contractor License: *Trade licenses* State: *XX*

SYNOPSIS

The Synopsis section should include a summary of the illegal activity and the specific codes violated. Key information would be the laws and regulations that were violated as well as a description of how they were violated. Indicate how we verified that the laws were violated (i.e.: surveillance, monitoring, etc).

In committing these acts, the aforementioned named subjects and suspects violated the following laws and regulations: *(list sections and a brief description of violation)*

Federal Clean Water Act

Section: *13387(a)(1-7), 13350(a), 13350(b), etc.*
Violation: *Describe violation*

Department of Fish and Game Code

Section: *5650, 5650.1, 5652, etc.*
Violation: *Describe violation*

California State Penal Code

Section: *374.7(a),(b), 374.8, etc.*
Violation: *Describe violation*

County of Orange Water Quality Ordinance

Section: *4-13-40, 4-13-50, 4-13-52, 4-13-73, 4-13-80, etc.*
Violation: *Describe violation*

BACKGROUND:

The Background section should include a detailed summary of the process(es) and activities that were utilized by the suspect and what occurred to cause the violations.

HISTORY

This section of the background is a chronological explanation of past incidents. Make reference to old PNIR's and include them in the Exhibits List. Any other key pieces of information you have regarding the history of the individuals or business should be made reference to and their supporting documents included with the other exhibits. Information from the Hazardous Material Incident Report would also be useful in this section.

NARRATIVE:

The Narrative is a personal witness account by the investigator. Key pieces of information include the investigator's name, position, employment location, investigation experience, how the investigation was conducted (including specific time, date and references to Exhibit information), and a conclusion. Try to look at how the violations have impacted the bigger picture.

Format:
- *Key Info*
- *Narrative – if possible, use narrative from HMI*

ENVIRONMENTAL IMPACTS:

A one-page description of what occurs when this type of material is introduced in the environment and the human health issues surrounding the material should be included. Talk about what the sample results mean. A good place to begin your research would be the EPA Standards for handling the material. All sources of information should be referenced.

Based on the evidence presented, there are clear violations of the regulations and laws of the State of California. *List which violations occurred.*

WITNESS LIST

1. Last Name: First Name: Middle:

   Home Address: City: State/Zip:

   Home Phone: Business Phone: Cellular/Pager:

   Brief Summary of Witness Statement:

2. Last Name: First Name: Middle:

   Home Address: City: State/Zip:

   Home Phone: Business Phone: Cellular/Pager:

   Brief Summary of Witness Statement:

3. Last Name: First Name: Middle:

   Home Address: City: State/Zip:

   Home Phone: Business Phone: Cellular/Pager:

   Brief Summary of Witness Statement:

RECOMMENDATIONS

We recommend that this case be filed through the Orange County District Attorney's office for [criminal or civil] prosecution. A copy of this case should also be forwarded to the Attorney General's Office for disciplinary action against all licensees involved.

Submitted By: Signature: _____

Authorized Inspector

Report Reviewed By:

Signature: _____

Authorized Inspector

Signature: _____

Program Manager

EXHIBITS

These are the specific exhibits separated into sections and labeled with their exhibit number and name. Any piece of evidence that has relevance to the case should be included within the proper exhibit. All photographic evidence should be one exhibit, all sample information should be one exhibit, etc. The following list is just an idea of likely exhibits. Not all cases may contain these exhibits.

Exhibit 1 *Case Chronology (list all events in chronological order)*

Exhibit 2 *Hazardous Material Incident Report*

Exhibit 3 *Photographs (give description of what each photo is showing, include a map or diagram)*

Exhibit 4 *Samples (include everything from chain of custody to lab results)*

Exhibit 5 *Maps/Diagrams (use detailed maps and diagrams, utilize graph paper if necessary)*

Exhibit 6 *Witness Interviews (this is where any statements taken from witnesses will be)*

Exhibit 7 *Past PNIR's (any past PNIR's related to the subject will go here)*

Exhibit 8 *Past Letters (letters and communication sent to the subject in the past)*

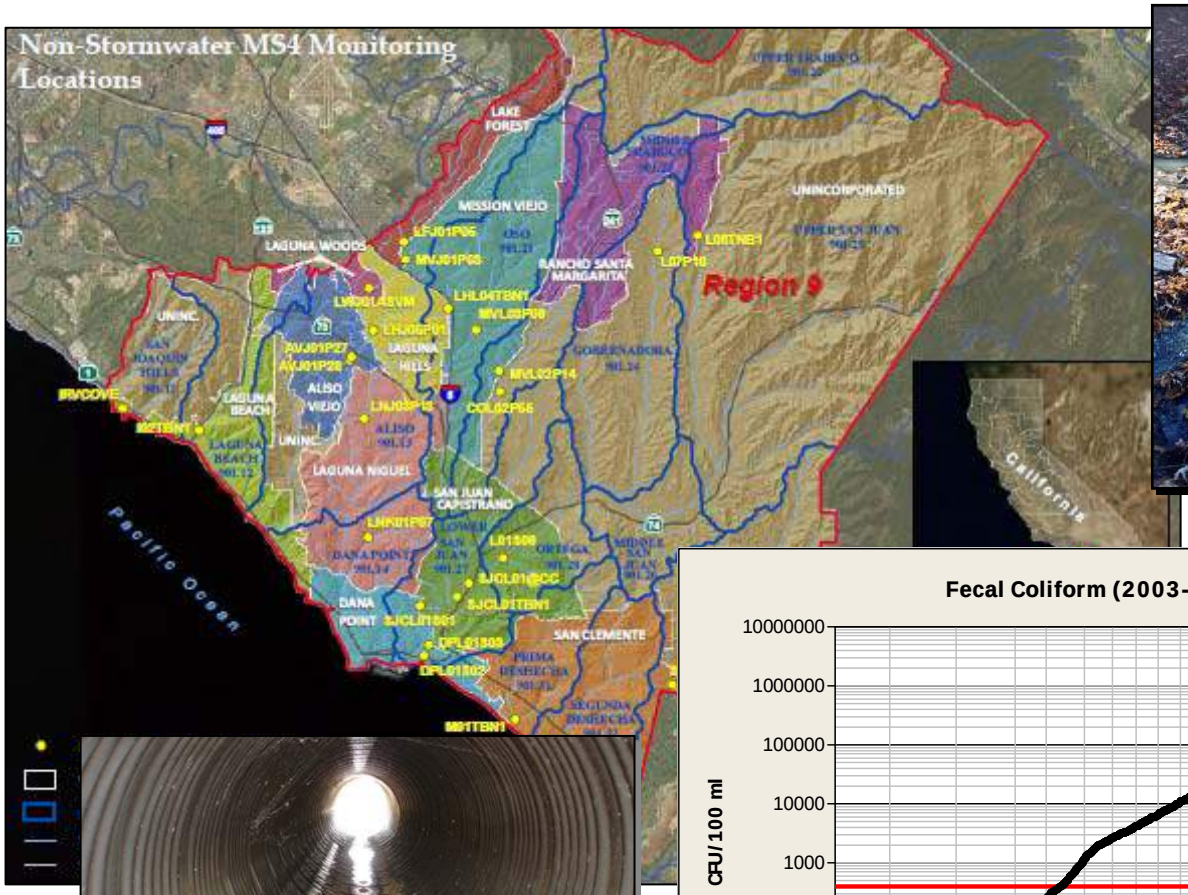
Exhibit 9 *Material Safety Data Sheets (if possible include MSDS' for the materials involved)*

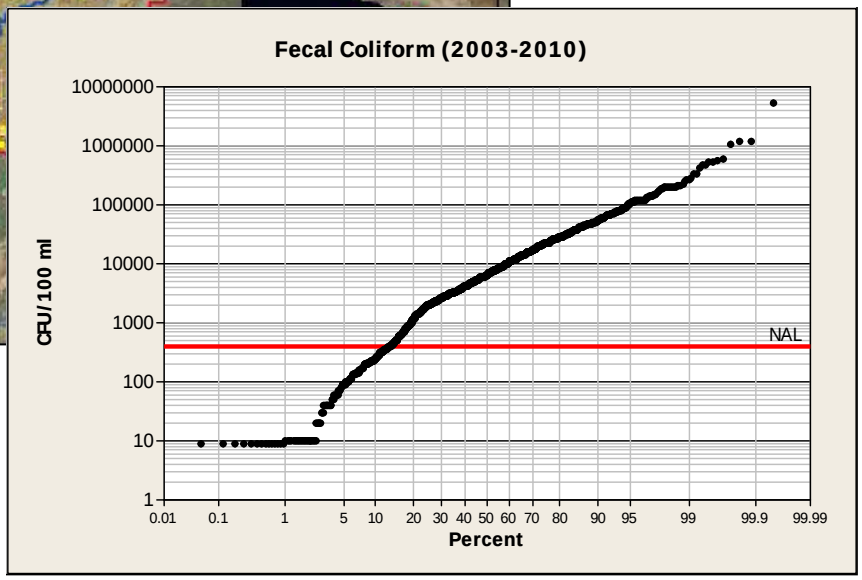
Exhibit 10 *Property Value (provide the current value of the property if applicable)*

Exhibit 11 *Newspaper Articles (include any articles past or present related to the case)*

Exhibit 10.2

San Diego Region
Dry Weather Numeric Action Level (NAL) Source Identification Guidance





DECEMBER 2011

A cooperative project of the County of Orange,
the Orange County Flood Control District, and the cities of Orange County,

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TABLE OF CONTENTS

ATTACHMENTS

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1.0 INTRODUCTION AND PURPOSE

The Permittees have developed this *Dry Weather Numeric Action Level (NAL) Source Identification Guidance Manual* (Manual) as a reference document for the Authorized Inspectors (Inspectors) (or other field staff as appropriate) to assist them in conducting defensible source identification (ID) investigations and identifying potential sources (or endpoints). The Manual provides general guidance only and should be supplemented by the Inspector's best professional judgment based on site specific conditions in the field.

The municipal stormwater permit, Order No. R9-2009-0002 (Permit) issued by the San Diego Regional Water Quality Control Board (Regional Board) requires the Permittees to investigate any exceedence(s) of the dry weather numeric action levels (NALs) established in the Permit. The NALs were established for discharges to inland surface waters; bays, harbors, lagoons, and estuaries; and/or the surf zone. The constituents of concern for which NALs were established include:

- pH
- Dissolved oxygen
- MBAS
- Turbidity
- Fecal indicator bacteria
- Nutrients (Total Nitrogen and Total Phosphorus)
- Priority Pollutants (metals)

Once an NAL is exceeded, the Permittees are required to conduct a source ID investigation to determine the potential source of the discharge. As a part of the investigation, the Permittees are required to identify the source(s) of the exceedence(s) and to report these findings, and any corrective measures taken, to the Regional Board.

The Permit identifies five potential endpoints[1] for the source investigations:

A. Natural in origin and conveyance;
B. Illegal discharge or illicit connection (illegal discharge/illicit connection);
C. Exempt category of non-stormwater discharges;
D. Violation of a separate NPDES/WDR permit; or
E. Unidentified.

The objective of this Manual is to establish general investigative guidelines and techniques that are a) consistent; b) in compliance with the municipal stormwater permit; and c) provide the information to reasonably identify one of the five endpoints as the potential source of the discharge.

This Manual is intended to provide general guidance for Inspectors and recognizes that their respective roles and responsibilities may vary among the Permittees. The Permittees may modify this Manual as necessary to ensure that it is reflective of their own internal policies and procedures. It is not the intent of this Manual to prescribe policies or procedures for implementing the Permittees' Local Implementation Plans.

[1] As specified in Section C.2.a-e of Order R9-2009-002.

This Manual is organized into the following sections:

- Section 1 – Introduction and Purpose
- Section 2 – Source Identification Guidance

This Manual also has a number of supporting Attachments to provide the Inspectors with the resources and tools that they may need in order to effectively conduct their source identification and investigation activities. The attachments include the following:

- *Attachment A – Dry Weather Numeric Action Level Monitoring Reporting Form*

  The outfall monitoring reporting form is used by field staff to record all of the information gathered at the outfall as a part of the dry weather monitoring program. This form allows staff to holistically evaluate all of the field and laboratory data in order to identify and support the source investigation endpoint determination.

- *Attachment B – Source Identification Methodologies*

  This attachment identifies the methodologies that may be used by field staff to conduct above and/or below ground investigations in order to try to determine the source of the discharge. These methodologies will be utilized as needed based on the circumstances for each discharge.

- *Attachment C – Endpoint Determination Guidance*

  This attachment includes a series of tables, based on the five potential endpoints, so that staff can evaluate multiple constituents/characteristics of the discharge when trying to determine the source of the discharge.

- *Attachment D – San Diego Region Reporting Requirements*

  This attachment identifies the reporting requirements, based on the endpoint determination. This will assist staff in ensuring that the necessary reporting is completed.

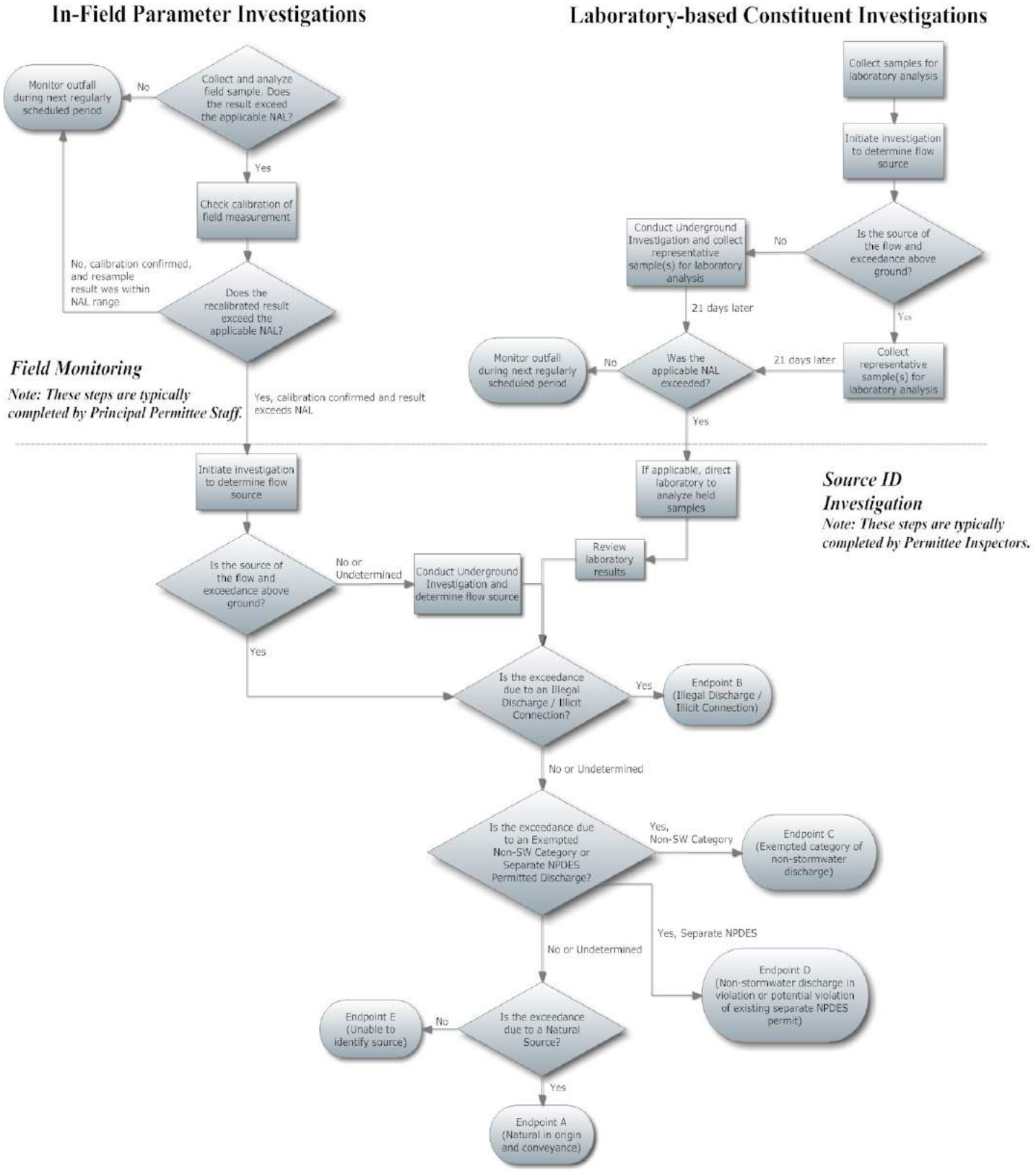
- *Attachment E – Regional Assessments*

  This attachment summarizes the approach and prioritization that may be used for NAL exceedences that occur within a region and are likely from similar sources.

2.0 SOURCE IDENTIFCATION GUIDANCE

This section identifies the procedures that are recommended in order to determine which outfalls have exceedances of the NALs and the investigative techniques that may be used to try to determine the source of the discharge.

The general source identification procedures are summarized followed by the constituent specific procedures. Procedures have been developed for each of the constituents that have NALs including pH, DO, turbidity, MBAS, fecal indicator bacteria, nutrients (nitrogen and phosphorus), and the priority pollutants (metals). Although each of the procedures are constituent-specific, the discharge at each outfall should be evaluated by analyzing all of the information and data available prior to determining the source of the discharge (see Attachment C).



Note: For additional guidance regarding potential endpoints, refer to **Attachment C**.
For reporting requirements once an endpoint has been determined, refer to **Attachment B.**

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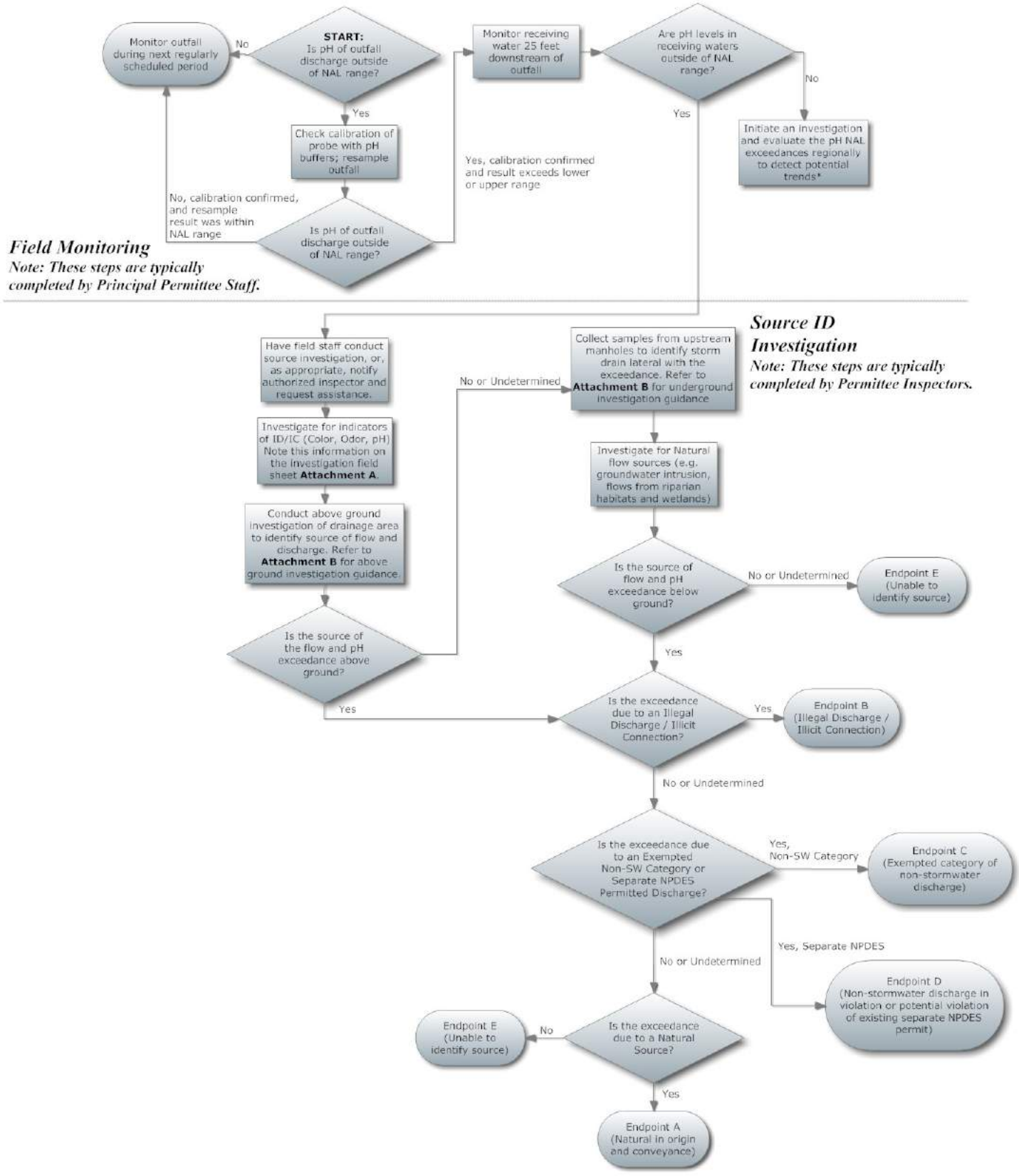
pH Source ID Procedures and Endpoint Determination



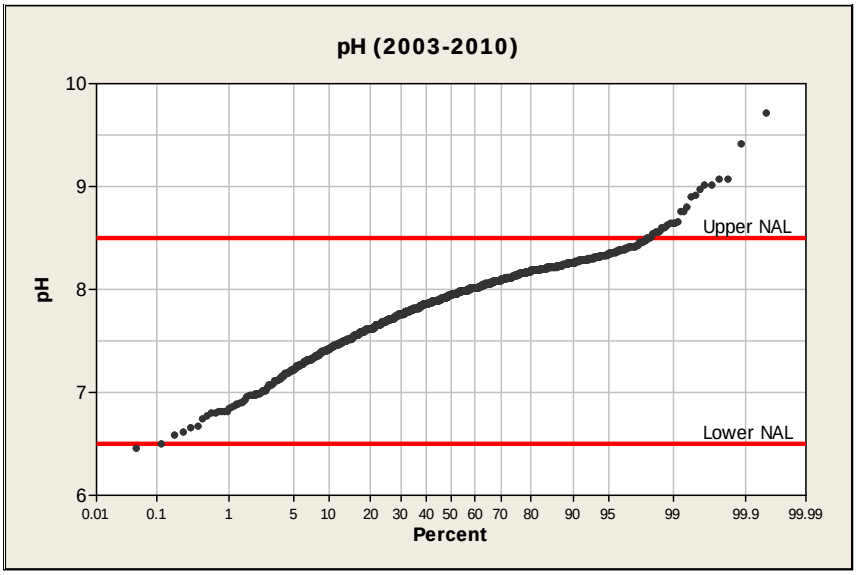
Note: For additional guidance regarding potential endpoints, refer to **Attachment C**.
For reporting requirements once an endpoint has been determined, refer to **Attachment B.**
*For additional guidance regarding regional assessments, refer to **Attachment E.**

APPLICABLE NON-STORMWATER ACTION LEVELS (NAL)

Discharge to Inland Surface Waters	Discharge to Bays, Harbors, and Lagoons
pH is required to be within **6.5** to **8.5** at all times.	pH is required to be within **6.0** to **9.0** at all times.

BACKGROUND

pH is the measurement of free hydrogen ions in a solution. Low and high pH negatively affects the growth, mobility, motility, and feeding habits of fish and plant species. pH levels also affect the distribution of chemicals within the waters, causing either an enhancement of toxic effects (synergism) or a muting of toxic effects (antagonism).



PROBABILITY OF AN NAL EXCEEDANCE

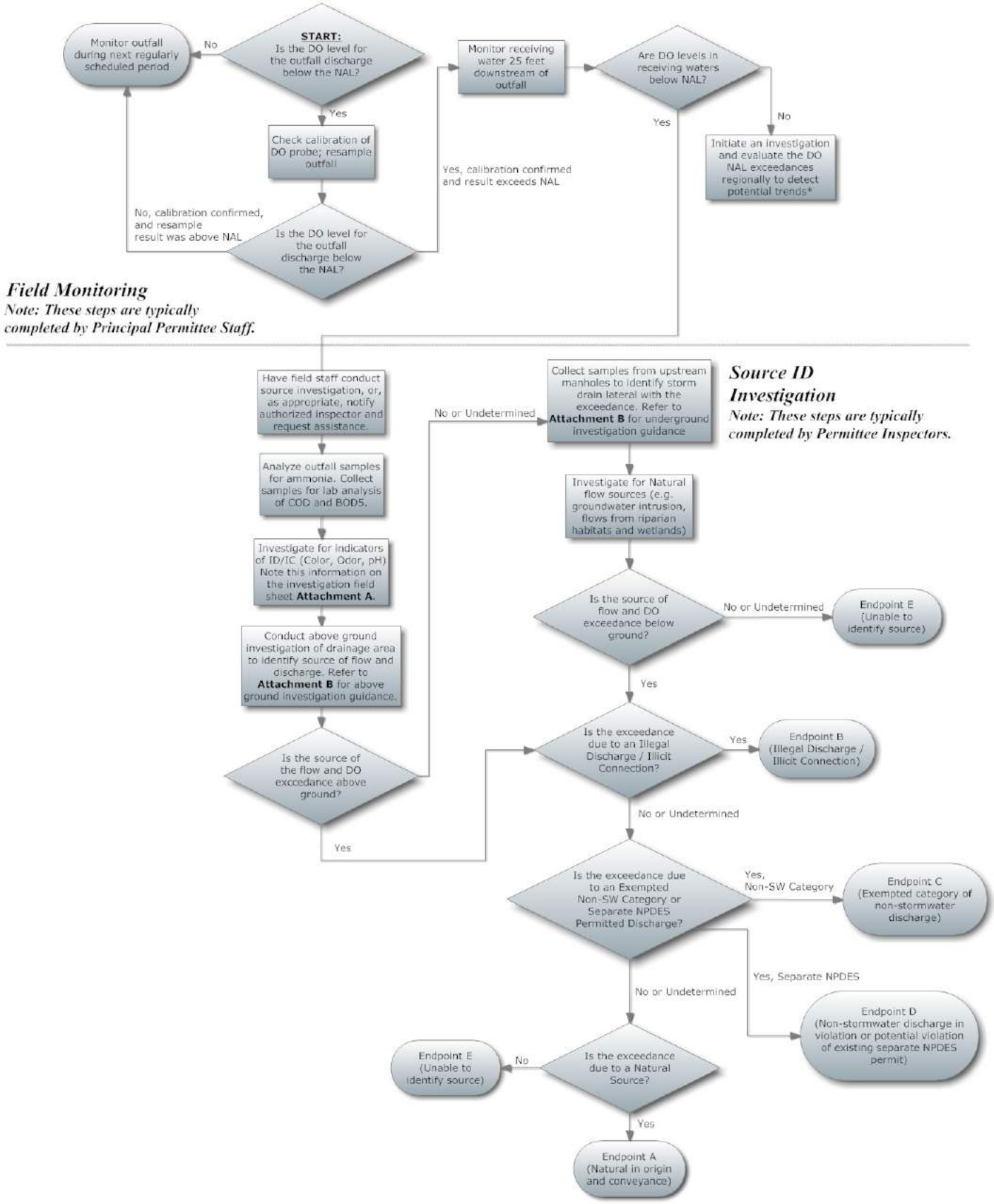
Based on the San Diego Region Dry Weather Reconnaissance data, there is less than a 5% chance that the pH value will exceed the NAL.

SOURCE IDENTIFICATION AND ENDPOINT DETERMINATIONS

The San Diego Region municipal stormwater permit identifies five endpoint determinations that are possible as a result of each NAL source identification effort. The five endpoints and the likelihood of a pH exceedance meeting the criteria for each endpoint determination are outlined in the table below.

Endpoint	Likelihood of Exceedance	pH Characteristics	Potential Source
A - Natural in Origin and Conveyance	Not Likely	---	---
B – Illegal Discharge / Illicit Connection	Likely	• High pH • Low pH	• Concrete waste, ZEP degreaser, etc. • Circuit board waste, pool acid, etc.
C - Exempt Category of Non-SW Discharge	Not Likely	---	---
D - Discharge Violation of a Permit	Possible	• High or low pH	• A non-stormwater discharge that is in violation of a different state-issued permit (See Endpoint B for examples).
E - Unidentified	Likely	---	---

DO Source ID Procedures and Endpoint Determination



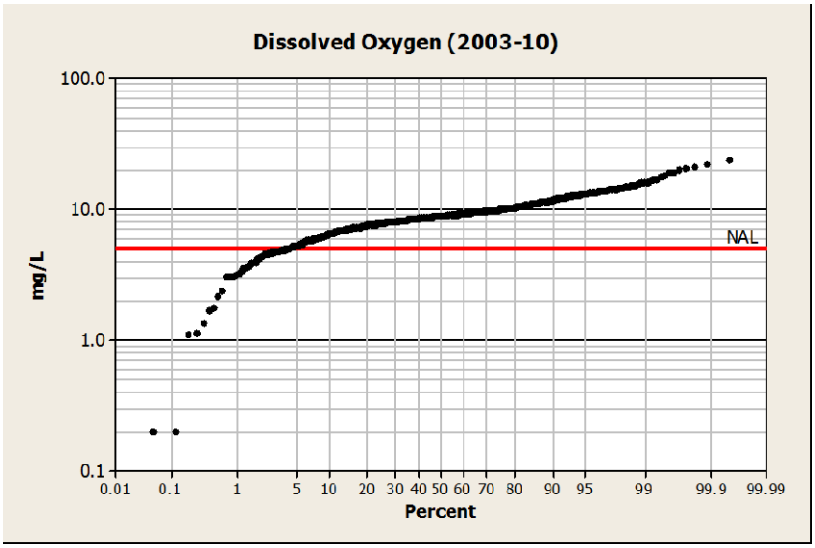
Note: For additional guidance regarding potential endpoints, refer to **Attachment C**.
For reporting requirements once an endpoint has been determined, refer to **Attachment B.**
*For additional guidance regarding regional assessments, refer to **Attachment E.**

APPLICABLE NON-STORMWATER ACTION LEVELS (NAL)

Discharge to Inland Surface Waters – WARM waters	Discharge to Inland Surface Waters – COLD waters
Not less than **5.0 mg/L**	Not less than **6.0 mg/L**

BACKGROUND

Dissolved oxygen (DO) levels are highly dependent on the turbulence of the water. High turbulence encourages oxygen enrichment. Alternatively, oxygen demanding substances (e.g. respiration, natural decomposition of deciduous materials) consume available DO in the water. DO levels are temperature dependent, with colder water having a higher DO content.



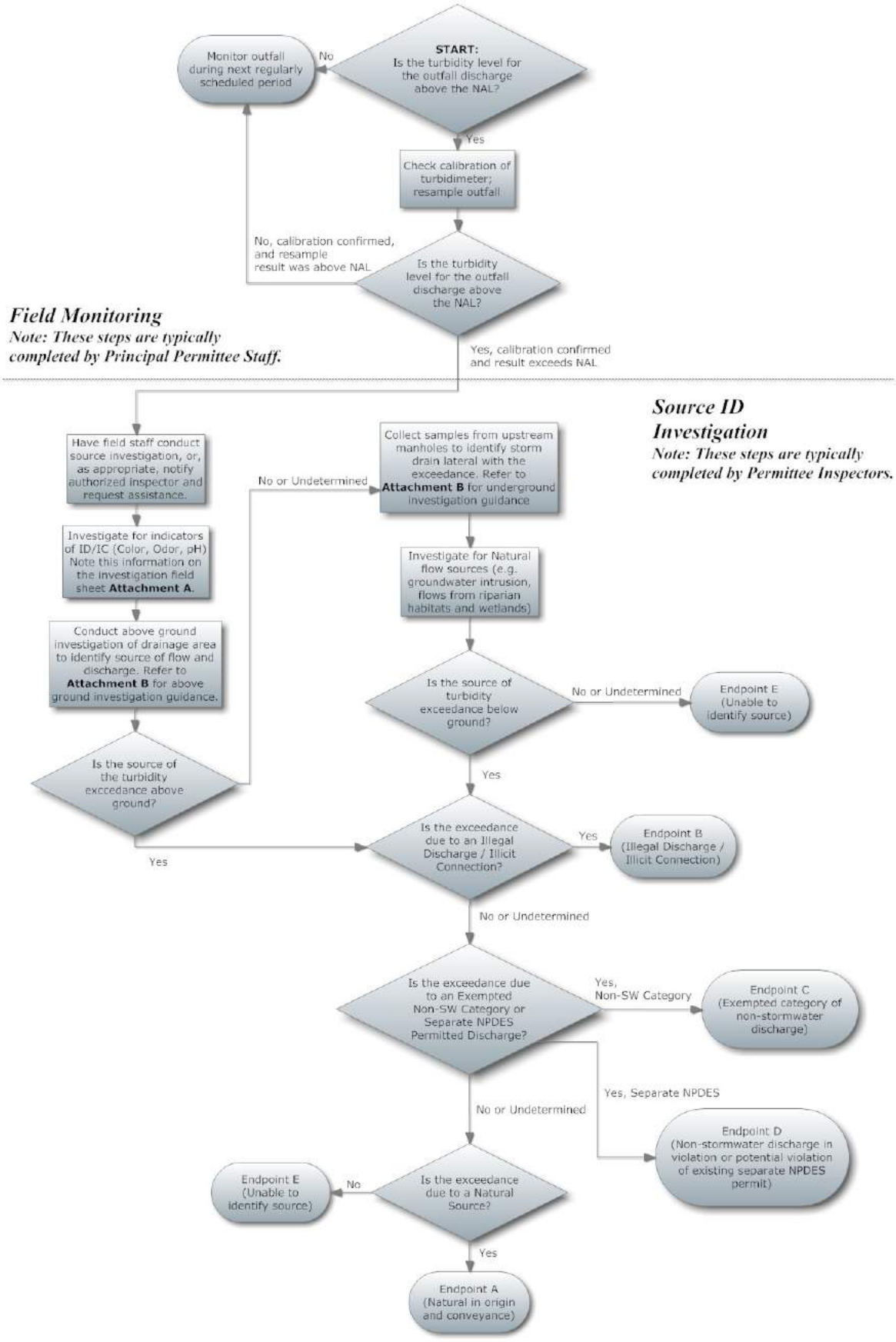
PROBABILITY OF AN NAL EXCEEDANCE

Based on the San Diego Region Dry Weather Reconnaissance data, there is roughly a 5% chance that the DO level will be below the NAL.

SOURCE IDENTIFICATION AND ENDPOINT DETERMINATIONS

The San Diego Region municipal stormwater permit identifies five endpoint determinations that are possible as a result of each NAL source identification effort. The five endpoints and the likelihood of a DO exceedance meeting the criteria for each endpoint determination are outlined in the table below.

Endpoint	Likelihood of Exceedance	DO Characteristics	Potential Source
A - Natural in Origin and Conveyance	Likely	• Lower DO	• Groundwater or spring seepage
B – Illegal Discharge / Illicit Connection	Likely	• Low DO	• Various discharges
C - Exempt Category of Non-SW Discharge	Possible	• Lower DO	• Groundwater or spring seepage • Other various discharges
D - Discharge Violation of a Permit	Possible	• Low DO	• A non-stormwater discharge that is in violation of a different state-issued permit (See Endpoint B for examples).
E - Unidentified	Likely	---	---



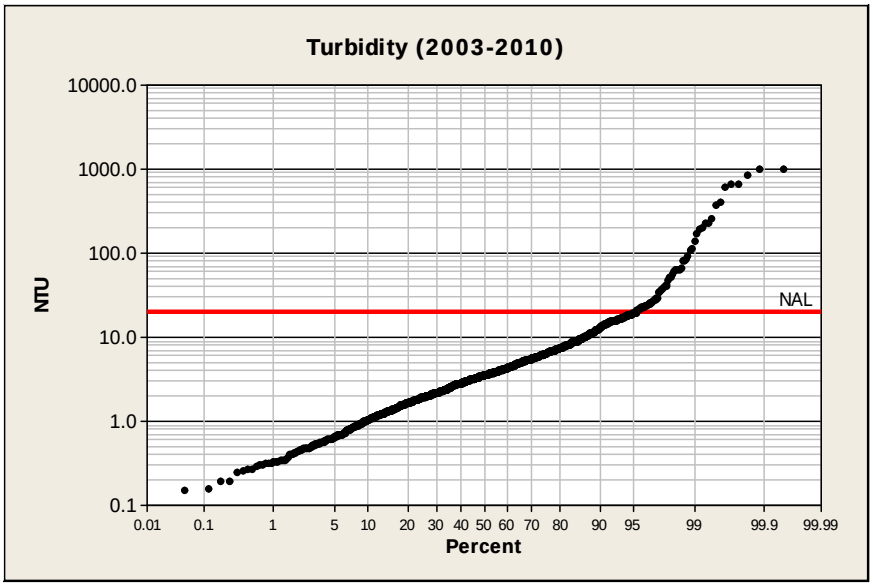
Note: For additional guidance regarding potential endpoints, refer to **Attachment C**.
For reporting requirements once an endpoint has been determined, refer to **Attachment B.**

APPLICABLE NON-SW ACTION LEVELS

Inland Surface Waters	Bays, Harbors, and Lagoons
20 NTU (Maximum Daily)	75 NTU (Average Monthly) & 225 NTU (Instantaneous Max.)

BACKGROUND

Turbidity measures the "clarity" of water by determining how light is scattered by the aqueous medium. High light scatter correlates with higher suspended solids in the medium. High turbidity does not necessarily indicate that a water body is affected negatively. Turbid waters are ideal for some fish species (e.g., delta smelt), which rely on the turbidity to avoid predation.



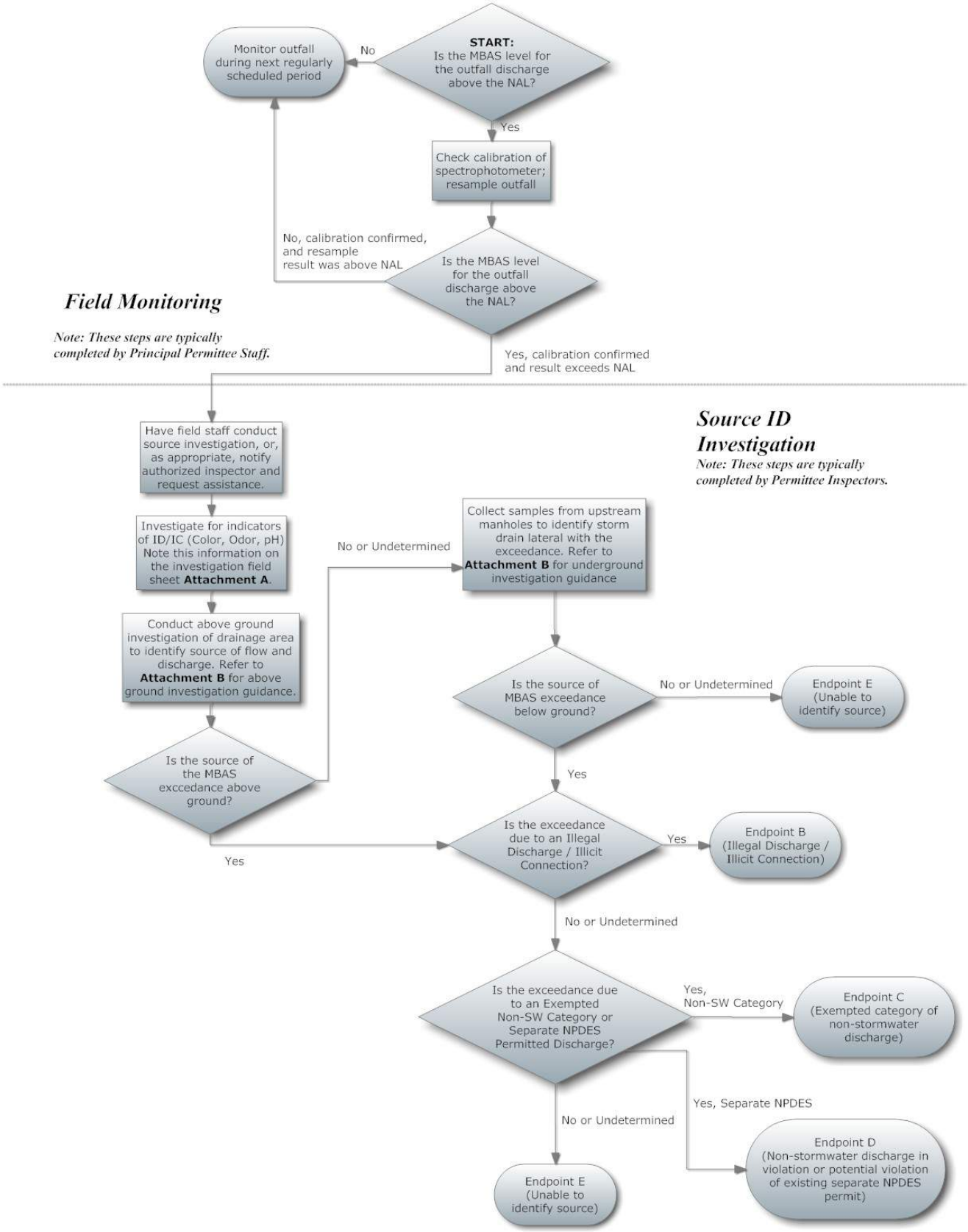
PROBABILITY OF AN NAL EXCEEDANCE

Based on the San Diego Region Dry Weather Reconnaissance data, there is roughly a 5% chance that the turbidity value will exceed the NAL.

SOURCE IDENTIFICATION AND ENDPOINT DETERMINATIONS

The San Diego Region municipal stormwater permit identifies five endpoint determinations that are possible as a result of each NAL source identification effort. The five endpoints and the likelihood of a turbidity exceedance meeting the criteria for each endpoint determination are outlined in the table below.

Endpoint	Likelihood of Exceedance	Turbidity Characteristics	Potential Source
A - Natural in Origin and Conveyance	Not Likely	---	---
B – Illegal Discharge / Illicit Connection	Possible	• High turbidity	• Erosion, sediment discharge
C - Exempt Category of Non-SW Discharge	Possible	• High turbidity	• Erosion, sediment discharge
D - Discharge Violation of a Permit	Likely	• High turbidity	• A non-stormwater discharge that is in violation of a different state-issued permit (See Endpoint B for examples).
E - Unidentified	Likely	---	---



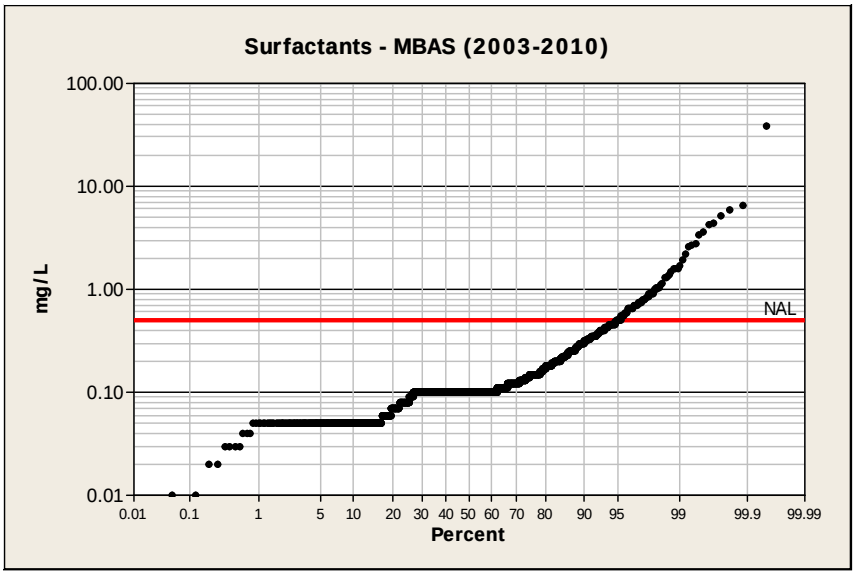
Note: For additional guidance regarding potential endpoints, refer to **Attachment C**.
For reporting requirements once an endpoint has been determined, refer to **Attachment B.**

APPLICABLE NON-SW ACTION LEVELS

Inland Surface Waters
0.5 mg/L (Maximum Daily)

BACKGROUND

Methylene blue active substances (MBAS) are anionic surface active chemicals (e.g., surfactants). Surfactants disrupt the surface ionic charge of oils and other chemicals, which allow for them to be suspended away from the cleaning surface. MBAS is most commonly associated with cleaning activities.



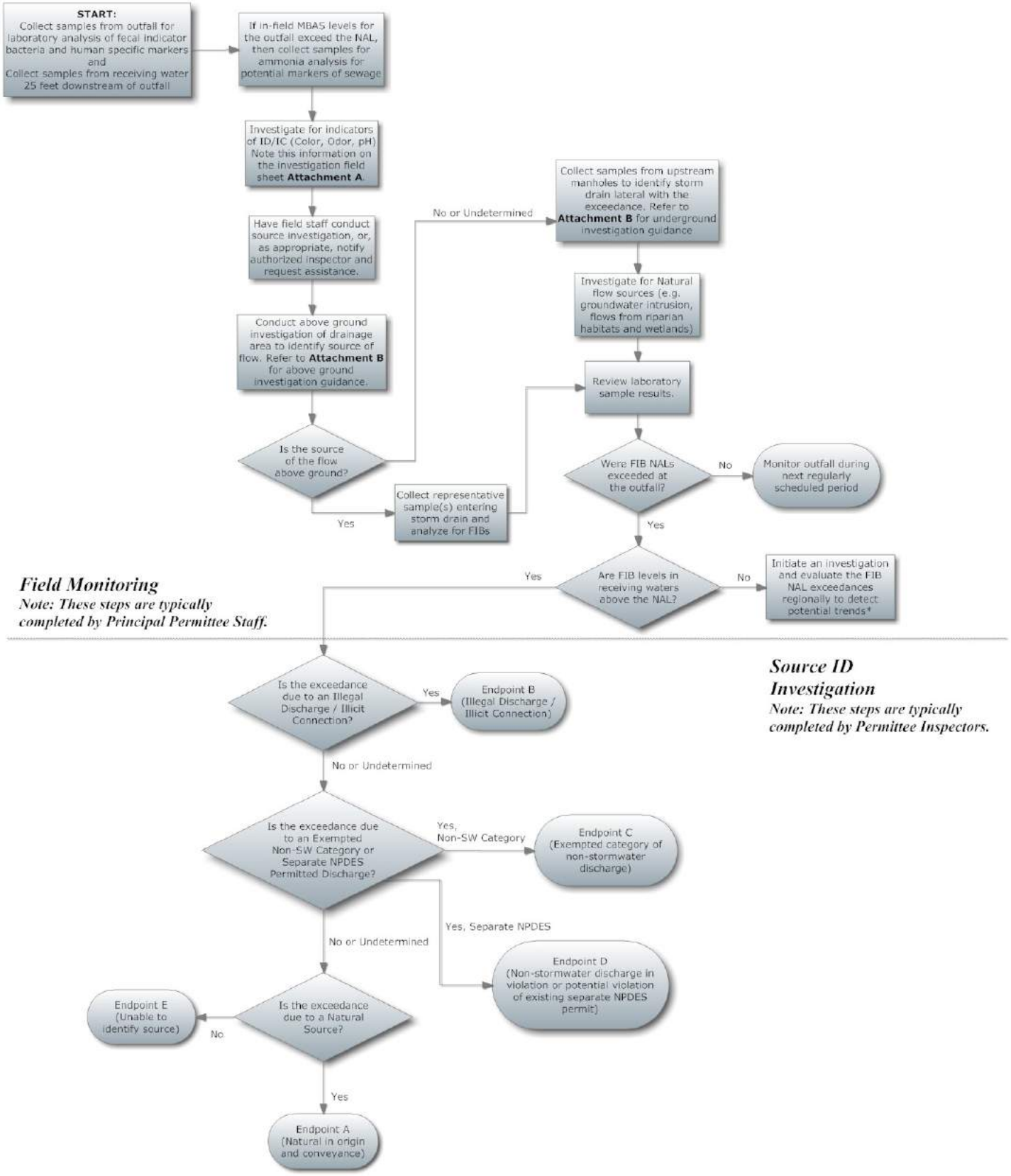
PROBABILITY OF AN NAL EXCEEDANCE

Based on the San Diego Region Dry Weather Reconnaissance data, there is roughly a 5% chance that the MBAS value will exceed the NAL.

SOURCE IDENTIFICATION AND ENDPOINT DETERMINATIONS

The San Diego Region municipal stormwater permit identifies five endpoint determinations that are possible as a result of each NAL source identification effort. The five endpoints and the likelihood of an MBAS exceedance meeting the criteria for each endpoint determination are outlined in the table below.

Endpoint	Likelihood of Exceedance	MBAS Characteristics	Potential Source
A - Natural in Origin and Conveyance	Not Likely	---	---
B – Illegal Discharge / Illicit Connection	Likely	• High MBAS	• Surface cleaning, grey water, car washing, SSO, detergents, etc.
C - Exempt Category of Non-SW Discharge	Possible	• High MBAS	• Residential car washing
D - Discharge Violation of a Permit	Likely	• High MBAS	• A non-stormwater discharge that is in violation of a different state-issued permit (See Endpoint B for examples).
E - Unidentified	Likely	---	---



Note: For additional guidance regarding potential endpoints, refer to **Attachment C**.
For reporting requirements once an endpoint has been determined, refer to **Attachment B.**
*For additional guidance regarding regional assessments, refer to **Attachment E.**

APPLICABLE NON-STORMWATER ACTION LEVELS

Inland Surface Waters (per 100 mL)	Bays, Harbors, and Lagoons (per 100 mL)
Fecal Coliform: 200 MPN[1,2], 400 MPN[1,3]	**Fecal Coliform:** 200 MPN[1,2], 400 MPN[1,3]
Enterococci: 33 MPN[1],104 MPN/100mL[4,5]	**Enterococci:** 35 MPN[1], 104 MPN[4,5]
	Total Coliform: 1,000 MPN[1], 10,000 MPN[4]

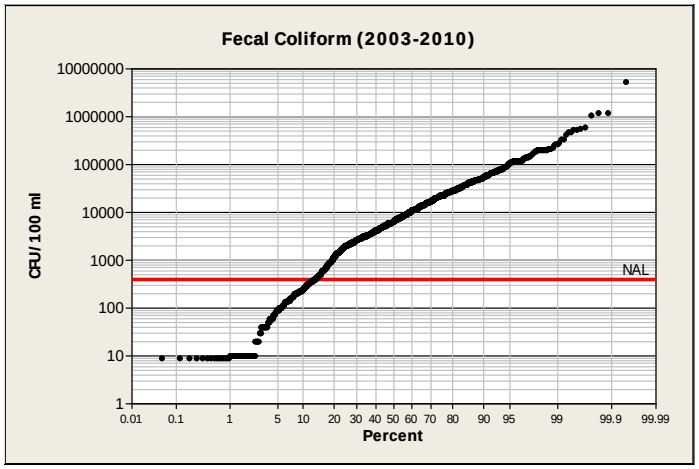
[1] Average monthly action level
[2] Based on at least 5 samples for any 30-day period
[3] No more than 10% of total samples may exceed this level during any 30-day period
[4] Instantaneous Max
[5] Designated Beach Areas

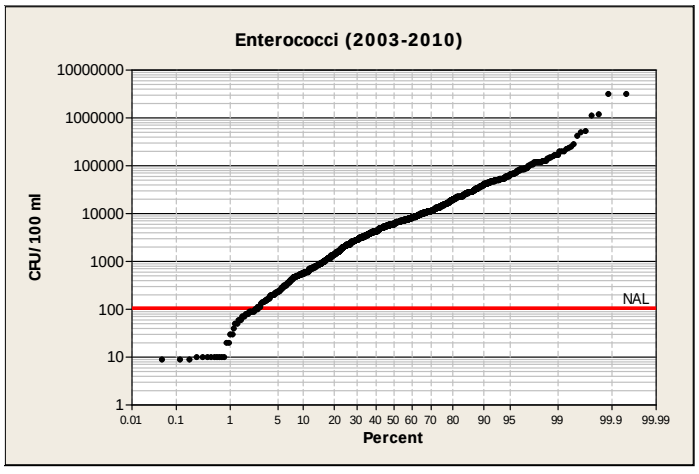
Surf Zone
Fecal Coliform: 200 MPN[1,2],400 MPN[3]
Enterococci: 35 MPN[1], 104 MPN[4]
Total Coliform: 1,000 MPN[1], 10,000 MPN[3], 1000 MPN[3,5]

[1] Average monthly action level
[2] During any 30 day period
[3] Instantaneous Max
[4] Designated Beach Areas
[5] Total coliform shall not exceed 1,000 per 100mL when the ratio of fecal/total coliform exceeds 0.1

BACKGROUND

Fecal bacteria indicators (FIBs) are used as a surrogate measurement to the disease-causing pathogens in water, which naturally occur at low levels. Human sources of these bacteria are prioritized over animal sources because they are more accurate indicators for human infection. Both natural and anthropogenic sources can contribute to FIB levels.





PROBABILITY OF AN NAL EXCEEDANCE

Based on the San Diego Region Dry Weather Reconnaissance data, there is roughly a 95% chance (or greater) that the FIB levels will be above the NAL.

SOURCE IDENTIFICATION AND ENDPOINT DETERMINATIONS

The San Diego Region municipal stormwater permit identifies five endpoint determinations that are possible as a result of each NAL source identification effort. The five endpoints and the likelihood of a FIB exceedance meeting the criteria for each endpoint determination are outlined in the table below.

Endpoint	Likelihood of Exceedance	Characteristics	Potential Source
A - Natural in Origin and Conveyance	Possible	• Presence of FIB	• Wildlife droppings
B – Illegal Discharge / Illicit Connection	Likely	• Elevated FIB level	• Sewer overflow, pets, wildlife, septic tanks
C - Exempt Category of Non-SW Discharge	Possible	• Presence of FIB	• Other various discharges
D - Discharge Violation of a Permit	Possible	• Elevated FIB level	• A non-stormwater discharge that is in violation of a different state-issued permit (See Endpoint B for examples).
E - Unidentified	Likely	---	---

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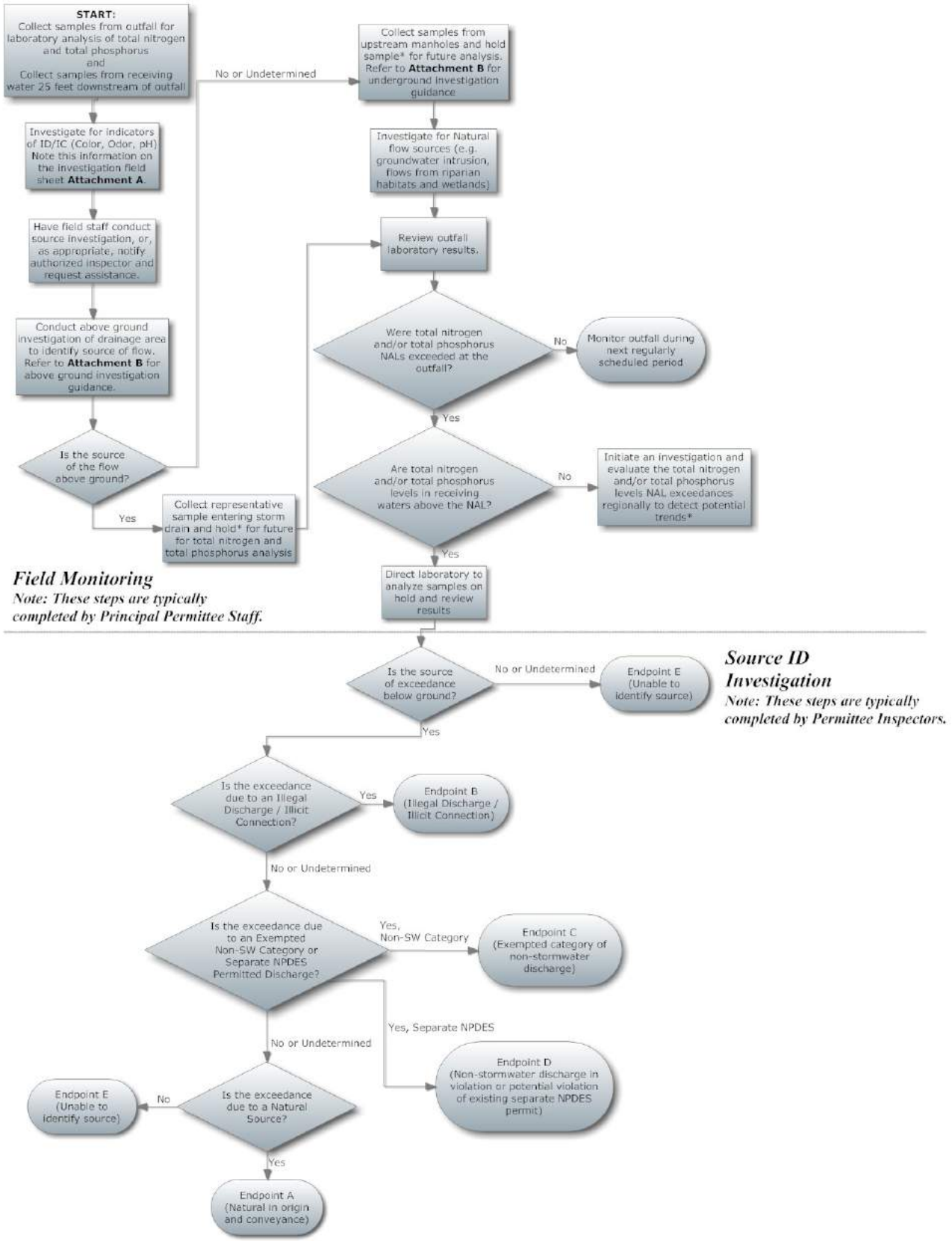


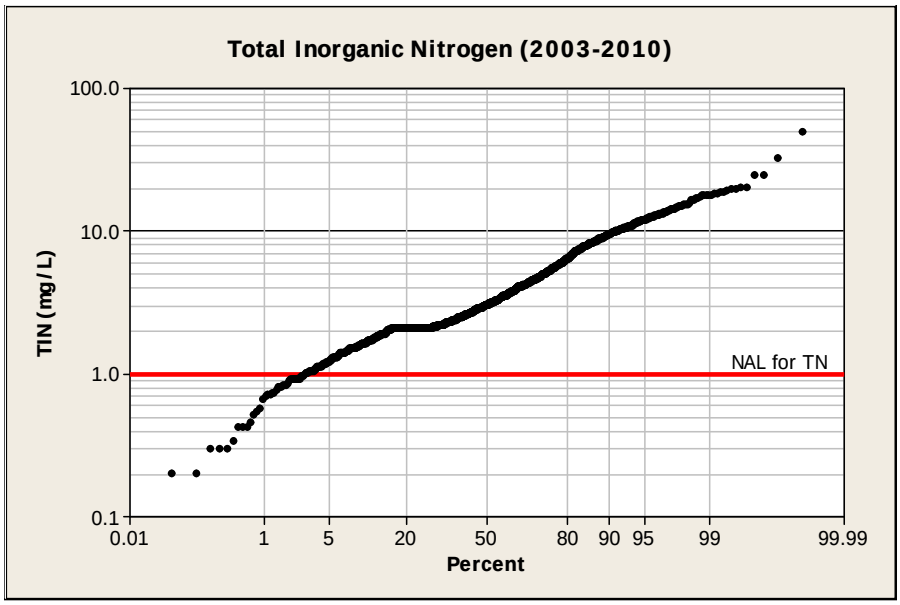
Note: For additional guidance regarding potential endpoints, refer to **Attachment C.**
For reporting requirements once an endpoint has been determined, refer to **Attachment B.**
Field staff should submit "HOLD" samples to laboratory for proper perseveration, but no analysis should occur until explicitly requested.
*For additional guidance regarding regional assessments, refer to **Attachment E.**

APPLICABLE NON-STORMWATER ACTION LEVELS (NAL)

Discharge to Inland Surface Waters (Maximum Daily)	
Total Nitrogen: 1.0 mg/L	Total Phosphorus: 0.1 mg/L

BACKGROUND

Excessive total nitrogen and/or phosphorous levels may be indicative of an overabundance of nutrients. High levels of either or both constituent have been shown to cause a biostimulatory affect in local microorganisms (esp. algae).



PROBABILITY OF AN NAL EXCEEDANCE

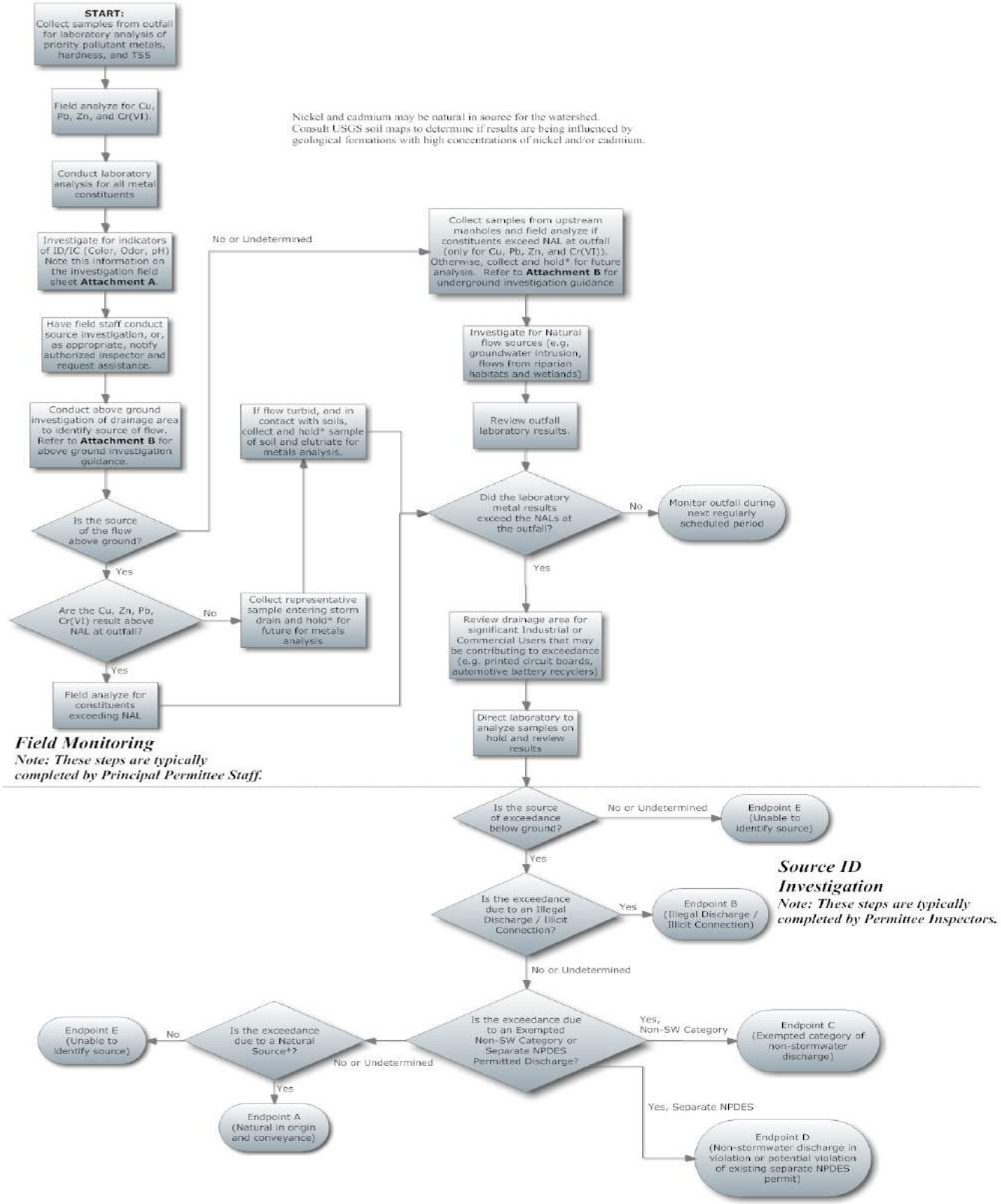
Based on the San Diego Region Dry Weather Reconnaissance data, there is roughly a 95% chance that the total nitrogen and/or total phosphorus levels will be above the NAL.

SOURCE IDENTIFICATION AND ENDPOINT DETERMINATIONS

The San Diego Region municipal stormwater permit identifies five endpoint determinations that are possible as a result of each NAL source identification effort. The five endpoints and the likelihood of a nutrient exceedance meeting the criteria for each endpoint determination are outlined in the table below.

Endpoint	Likelihood of Exceedance	Characteristics	Potential Source
A - Natural in Origin and Conveyance	Possible	• Presence of TN and/or TP	• Groundwater or spring seepage (plant debris, animal droppings)
B – Illegal Discharge / Illicit Connection	Likely	• Elevated TN and/or TP	• Fertilizers, septic tanks, reclaimed water, lubricants, detergents
C - Exempt Category of Non-SW Discharge	Possible	• Presence of TN and/or TP	• Groundwater or spring seepage • Other various discharges
D - Discharge Violation of a Permit	Possible	• Elevated TN and/or TP	• A non-stormwater discharge that is in violation of a different state-issued permit (See Endpoint B for examples).
E - Unidentified	Likely	---	---

Priority Pollutant Metals Source ID Procedures and Endpoint Determination



Note: For additional guidance regarding potential endpoints, refer to **Attachment C**.
For reporting requirements once an endpoint has been determined, refer to **Attachment B.**
Field staff should submit "HOLD" samples to laboratory for proper perseveration, but no analysis should occur until explicitly requested.

Priority Pollutant Source Identification Guidance

The priority pollutants are comprised of seven (7) metals as listed below. This Guidance Fact Sheet provides information specific to each of the priority pollutants.

APPLICABLE NON-STORMWATER ACTION LEVELS

Parameter	Units	Freshwater (CTR)		Saltwater (CTR)	
		MDAL	AMAL	MDAL	AMAL
Cadmium	ug/L	*	*	16	8
Copper	ug/L	*	*	5.8	2.9
Chromium III	ug/L	*	*	-	-
Chromium VI (hexavalent)	ug/L	16	8.1	83	41
Lead	ug/L	*	*	14	2.9
Nickel	ug/L	*	*	14	6.8
Silver	ug/L	*	*	2.2	1.1
Zinc	ug/L	*	*	95	47

** These action levels will be developed on a case by case basis using these formulas (based on Hardness as $CaCO_3$)*

Cadmium (Total Recoverable)	=exp(0.7852[ln(hardness)]-2.715)
Chromium III (Total Recoverable)	=exp(0.8190[ln(hardness)]+1.561)
Copper (Total Recoverable)	=exp(0.8545[ln(hardness)]-1.702)
Lead (Total Recoverable)	=exp(1.273[ln(hardness)]-4.705)
Nickel (Total Recoverable)	=exp(0.8460[ln(hardness)]+0.0584)
Silver (Total Recoverable)	=exp(1.72[ln(hardness)]-6.52)
Zinc (Total Recoverable)	=exp(0.8473[ln(hardness)]+0.884)

BACKGROUND

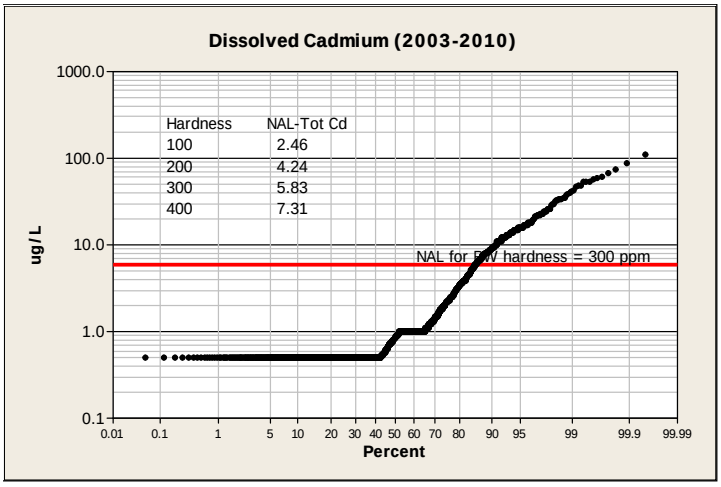
The priority pollutants and potential sources of each are listed below.

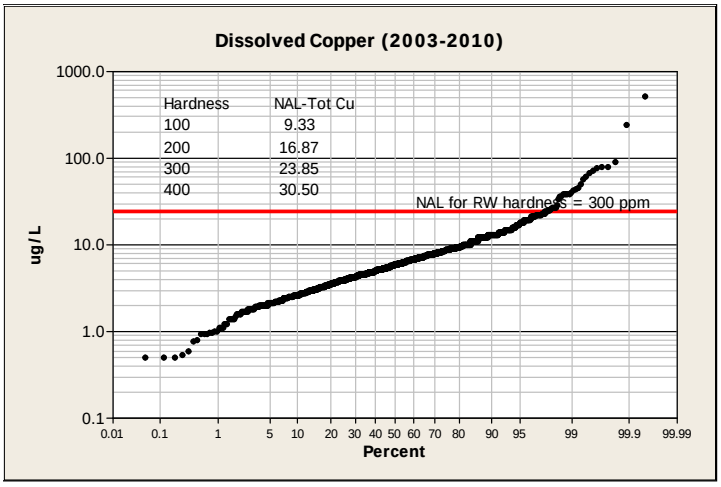
Priority Pollutant	Potential Sources		
Cadmium (low pH water soluable, high pH soil adsorption)	• Electroplating • Porcelin and Pottery • Soldering • Fertilizers	• Ink • Batteries • Photography • Paint • Pesticides	• Printing • Metal Recyclers • Oil • Tire Wear
Chromium (CrVI more toxic than CrIII, low pH water soluable)	• Electroplating • Pigments for paints and stains • Fertilizers	• Road striping paint • Brake linings • Ceramics	• Fire Sprinkler Systems • Pesticides
Copper (soil and carbonate adsorption)	• Pipe corrosion • Sewage effluent • Electroplating • Algicides	• Pesticides • Fungicides • Braking Linings • Asphalts	• Soils • Tire Wear
Lead (high adsorption to soils)	• Gasoline and Combustion Products • Road Paints	• Tire Wear • Soils • Paint	• Lead Pipes • Flashing • Industrial Emissions

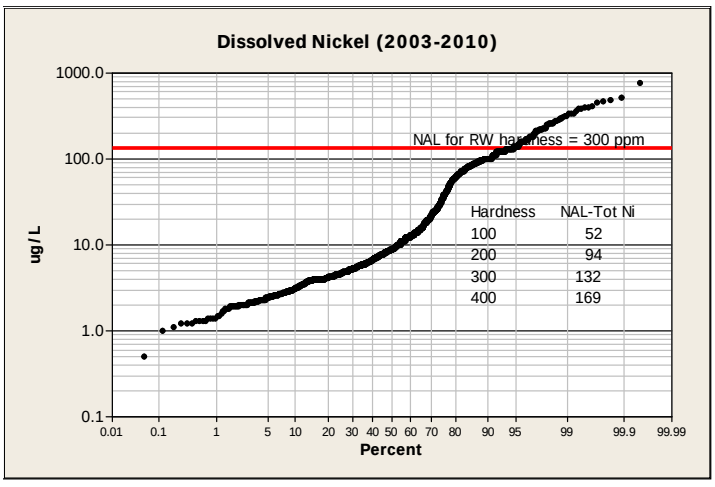
Priority Pollutant	Potential Sources		
Nickel	• Electroplating • Engine Wear	• Food Production • Batteries	
Silver (high adsorption to soils)	• Photographic Materials • Electrical and Electronic Products	• Contacts • Conductors • Solders • Mirrors	• Dental and Medical Supplies • Batteries • Fungicides
Zinc (high adsorption to soils)	• Tire Wear • Pavement Wear • Road Paints	• Auto Exhaust • Galvanized Fencing or Structures	• Atmospheric Deposition • Culverts

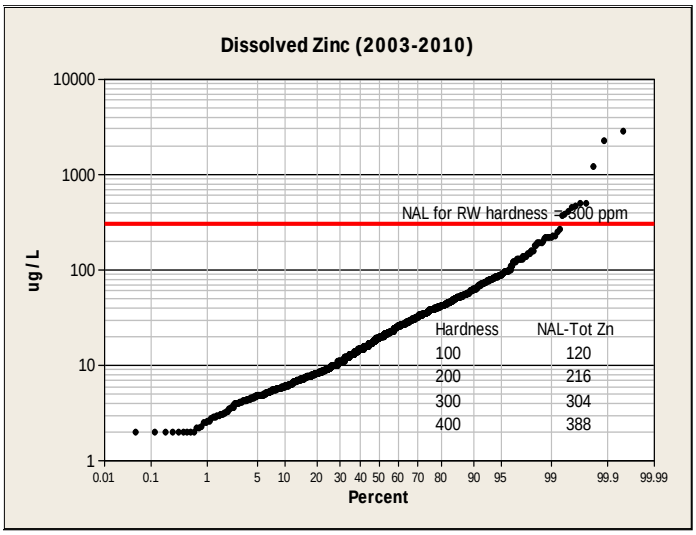
PROBABILITY OF AN NAL EXCEEDANCE

Based on the San Diego Region Dry Weather Reconnaissance data, there is a 5-20% chance that the priority pollutant levels will be above the NALs.









SOURCE IDENTIFICATION AND ENDPOINT DETERMINATIONS

The San Diego Region municipal stormwater permit identifies five endpoint determinations that are possible as a result of each NAL source identification effort. The five endpoints and the likelihood of a priority pollutant exceedance meeting the criteria for each endpoint determination are outlined in the table below.

Endpoint	Likelihood of Exceedance	Characteristics	Potential Source
A - Natural in Origin and Conveyance	Not Likely	---	---
B – Illegal Discharge / Illicit Connection	Likely	• Elevated levels	• See table above
C - Exempt Category of Non-SW Discharge	Not Likely	---	---
D - Discharge Violation of a Permit	Possible	• Elevated levels	• A non-stormwater discharge that is in violation of a different state-issued permit (See Endpoint B for examples).
E - Unidentified	Likely	---	---

Attachment A

Dry Weather Numeric Action Level (NAL) Monitoring Report Form

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Dry Weather Numeric Action Level (NAL) Monitoring Report Form

A. INITIAL INVESTIGATION- CITY: _____

General Information

Date:	_____	Inspection ID:	_____	Est. Flow Rate (cfs)*:	_____
Outfall ID:	_____	Inspector:	_____	Receiving Water:	_____
Tracking ID:	_____	Inspector 2:	_____	Lat/Long:	_____
Weather:	_____			Date of Last Rain:	_____

*Describe how the flow rate was determined in comment sections below.

Test Kit / Field Data

Parameter	Result	Units	Exceeds Numeric Action Level (NAL)? Y	N
pH	_____	Std.	☐	☐
DO	_____	mg/L	☐	☐
Turbidity	_____	NTU	☐	☐
MBAS	_____	mg/L	☐	☐

Laboratory Analysis Data

Parameter	Result	Units	Exceeds NAL? Y	N	Parameter	Result	Units	Exceeds NAL? Y	N
Total Coliform	_____	MPN/ 100mL	☐	☐	Chromium III	_____	µg/L	☐	☐
Fecal Coliform	_____	MPN/ 100mL	☐	☐	Chromium VI	_____	µg/L	☐	☐
Enterococci	_____	MPN/ 100mL	☐	☐	Lead	_____	µg/L	☐	☐
Total Nitrogen	_____	mg/L	☐	☐	Nickel	_____	µg/L	☐	☐
Total Phosphorus	_____	mg/L	☐	☐	Silver	_____	µg/L	☐	☐
Cadmium	_____	µg/L	☐	☐	Zinc	_____	µg/L	☐	☐
Copper	_____	µg/L	☐	☐	MBAS	_____	mg/L	☐	☐

Other Information

Comment: _____

☐ *No NALs exceeded – no report due to the Regional Board required. Hold for records.*

☐ *NAL(s) exceeded, complete parts B-D.*

B. FOLLOW UP INVESTIGATION - CITY: ___________________

Date: _____ Time: _____	Additional Sampling Results/Outfalls											
	Site A: ______________				Site B: ______________				Site C: ______________			
			Exccds NAL?				Exccds NAL?				Exceeds NAL?	
Parameter	Result	Unit	Y	N	Result	Unit	Y	N	Result	Unit	Y	N
__________	_____	_____	☐	☐	_____	_____	☐	☐	_____	_____	☐	☐
__________	_____	_____	☐	☐	_____	_____	☐	☐	_____	_____	☐	☐
__________	_____	_____	☐	☐	_____	_____	☐	☐	_____	_____	☐	☐
__________	_____	_____	☐	☐	_____	_____	☐	☐	_____	_____	☐	☐
__________	_____	_____	☐	☐	_____	_____	☐	☐	_____	_____	☐	☐

Attach additional sheets and maps, as necessary

C. SOURCE ENDPOINT DETERMINATION (BASED ON WEIGHT OF EVIDENCE)

Endpoint:	A. ☐	B. ☐	C. ☐	D. ☐	E. ☐
	Natural Source	Illicit Discharge or Connection	Exempted Non-SW Category	Separate NPDES Permitted Discharge	Indeterminate Source
Reporting Req.:	*14 days*	*14 days***	*Annually*	*3 days*	**

**Additional reporting requirements see Section C.2 of Order R9-2009-002.

Explanation / Narrative	Comment: _____

D. Determination

Based on the investigation and the weight of the evidence, it has been determined that the source of the NAL exceedence is likely due to _________________.

Inspector Signature:

Title:

Date:

Form to be filled in its entirety and submitted to: (NAME), California Water Quality Control Board San Diego Region, 9174 Sky Park Court, Suite 100, San Diego, California 92123-4340

Attachment B

Source Identification Methodologies

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Source Identification Methodologies

The following source identification methodologies are a summary of the methods and protocols detailed in the *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments*, October 2004 by the Center for Watershed Protection and Robert Pitt, University of Alabama (Chapter 13). Once a methodology is selected, Chapter 13 of the Manual provides the additional guidance necessary to carry out the source identification.

The three primary methods summarized in the manual include:

- Above Ground - Drainage Area Investigations – This method relies on an analysis of land use or other characteristics of the drainage area that is producing the discharge. The investigation can be as simple as a "windshield" survey of the drainage area or a more complex mapping analysis of the storm drain system and potential problem areas.

  These types of investigations work best when:
  - Prior data reveals strong clues regarding the likely sites(s) producing the discharge.
  - The discharge has a distinct or unique characteristics that allow crews to quickly ascertain the probable operation or business that is generating the discharge.

  Often discharges with a unique color, smell, or indicator reading may point to a specific industrial or commercial source.

- Above and Below Ground - Storm Drain Investigations – Field crews strategically inspect the storm drain system to measure chemical and/or physical indicators that can isolate discharges to a specific segment of the storm drain system. Investigations may include manholes and/or daylighted sections of the storm drain system. Once the segment(s) has been identified, on-site investigations are used to find the discharge or connection.

  - Three options can be used to determine where the source is originating from:
    - Crews can work progressively up the trunk from the outfall and test manholes along the way;
    - Crews can split the trunk into equal segments and test manholes at strategic junctions in the storm drain system; or
    - Crews can work progressively down from the upper portions of the storm drain system toward the problem outfall. Note: If this option is selected, crews should be very careful since the disturbance of the upper portions may impact the downstream observations/investigations.

- On-Site Investigations – On-site methods are used to trace the source of an illicit discharge in a pipe and/or channel segment and may involve dye, video, and/or smoke testing within isolated segments of the storm drain system.

In addition to these site-specific source ID methodologies, the Permittees may also work together collaboratively to conduct regional assessments when the NAL constituents and exceedences are likely from the same source (see Attachment E).

The method(s) selected should be coordinated with the Stormwater Program Manager and will depend upon the location of the discharge, the land area, the type of constituent and the types of infrastructure within the area. Often times one or more methods are used.

Field Test Kits

For those constituents that the Permittees assess in the field, the table below lists the capabilities and relative cost of common field test kits. This table provides costs for guidance purposes only. The actual cost of these analyses may be enhanced or decreased, depending on the type of unit purchased and/or the required reagents and supplies necessary to conduct these analyses.

Test kits provide for immediate in-field results for constituents that may otherwise require laboratory analysis. Although field test kit analyses may be convenient, the results from these kits should not be a substitute for analyses conducted by laboratories using approved methodologies. At times, field test kits may not provide the adequate detection range, causing difficulty in being able to compare the result to the NAL.

The results from the field test kits should be used to assist the Inspectors in developing a profile of the sample, and to narrow the potential discharge sources.

Test Parameter	Method	Detection Range[c]	Cost Per Analysis [a],[c]
CHEMetrics I-2017 (initial equipment cost: $419)			
Detergents (Surfactants)	EPA 425.1	0.25 - 2.50 ppm	$3-4
HACH Pocket Colorimeter II Product # 5870000 (initial equipment cost: $391)			
Total Chlorine	8167	LR 0.02 - 2.00 ppm; HR 0.1 - 8.0 ppm [b]	$6-12
HACH 2100Q Product # 2100Q01 (initial equipment cost: $958)			
Turbidity	EPA 180.1	0 - 1000 NTU	$1
HACH Digital Titrator 16900 Product #1690001 (initial equipment cost: $143)			
Total Hardness	8213	10 - 4000 ppm	$9-19
Alkalinity	8203	10 - 4000 ppm	$4-10

[a] Cost per analysis assumes that no regents have been purchased and that common laboratory equipment (e.g. beakers, pipets, etc) is provided.

[b] LR = Low Range, HR = High Range

[c] The costs and detection ranges are approximate, and are summarized for guidance purposes only. The actual cost and capabilities of these analyses depends on a variety of factors that may increase or decrease the actual cost presented.

Chapter 13: Tracking Discharges To A Source

Once an illicit discharge is found, a combination of methods is used to isolate its specific source. This chapter describes the four investigation options that are introduced below.

Storm Drain Network Investigation

Field crews strategically inspect manholes within the storm drain network system to measure chemical or physical indicators that can isolate discharges to a specific segment of the network. Once the pipe segment has been identified, on-site investigations are used to find the specific discharge or improper connection.

Drainage Area Investigation

This method relies on an analysis of land use or other characteristics of the drainage area that is producing the illicit discharge. The investigation can be as simple as a "windshield" survey of the drainage area or a more complex mapping analysis of the storm drain network and potential generating sites. Drainage area investigations work best when prior indicator monitoring reveals strong clues as to the likely generating site producing the discharge.

On-site Investigation

On-site methods are used to trace the source of an illicit discharge in a pipe segment, and may involve dye, video or smoke testing within isolated segments of the storm drain network.

Septic System Investigation

Low-density residential watersheds may require special investigation methods if they are not served by sanitary sewers and/or storm water is conveyed in ditches or swales. The major illicit discharges found in low-density development are failing septic systems and illegal dumping. Homeowner surveys, surface inspections and infrared photography have all been effectively used to find failing septic systems in low-density watersheds.

13.1 Storm Drain Network Investigations

This method involves progressive sampling at manholes in the storm drain network to narrow the discharge to an isolated pipe segment between two manholes. Field crews need to make two key decisions when conducting a storm drain network investigation—where to start sampling in the network and what indicators will be used to determine whether a manhole is considered clean or dirty.

Where to Sample in the Storm Drain Network

The field crew should decide how to attack the pipe network that contributes to a problem outfall. Three options can be used:

- Crews can work progressively up the trunk from the outfall and test manholes along the way.
- Crews can split the trunk into equal segments and test manholes at strategic junctions in the storm drain system.
- Crews can work progressively down from the upper parts of the storm drain network toward the problem outfall.

The decision to move up, split, or move down the trunk depends on the nature and land use of the contributing drainage area. Some guidance for making this decision is provided in Table 53. Each option requires different levels of advance preparation. Moving up the trunk can begin immediately when an illicit discharge is detected at the outfall, and only requires a map of the storm drain system. Splitting the trunk and moving down the system require a little more preparation to analyze the storm drain map to find the critical branches to strategically sample manholes. Accurate storm drain maps are needed for all three options. If good mapping is not available, dye tracing can help identify manholes, pipes and junctions, and establish a new map of the storm drain network.

Option 1: Move up the Trunk

Moving up the trunk of the storm drain network is effective for illicit discharge problems in relatively small drainage areas. Field crews start with the manhole closest to the outfall, and progressively move up the network, inspecting manholes until indicators reveal that the discharge is no longer present (Figure 50). The goal is to isolate the discharge between two storm drain manholes.

Table 53: Methods to Attack the Storm Drain Network

Method	Nature of Investigation	Drainage System	Advance Prep Required
Follow the discharge up	Narrow source of an individual discharge	Small diameter outfall (< 36”) Simple drainage network	No
Split into segments	Narrow source of a discharge identified at outfall	Large diameter outfall (> 36”), Complex drainage Logistical or traffic issues may make sampling difficult.	Yes
Move down the storm drain	Multiple types of pollution, many suspected problems—possibly due to old plumbing practices or number of NPDES permits	Very large drainage area (> one square mile).	Yes

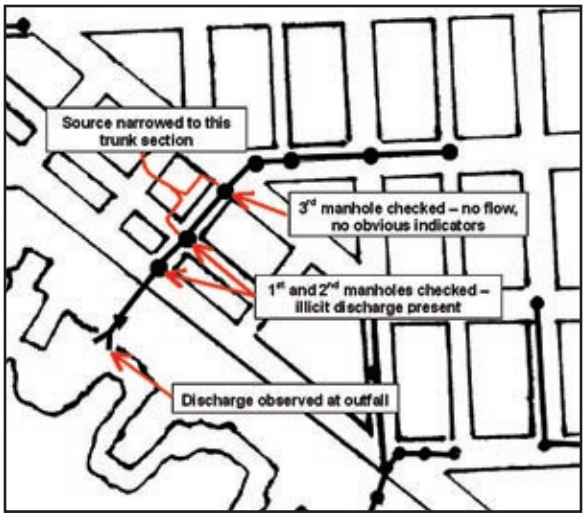


Figure 50: Example investigation following the source up the storm drain system

Option 2: Split the storm drain network

When splitting the storm drain network, field crews select strategic manholes at junctions in the storm drain network to isolate discharges. This option is particularly suited in larger and more complex drainage areas since it can limit the total number of manholes to inspect, and it can avoid locations where access and traffic are problematic.

The method for splitting the trunk is as follows:

1. Review a map of the storm drain network leading to the suspect outfall.
2. Identify major contributing branches to the trunk. The trunk is defined as the largest diameter pipe in the storm drain network that leads directly to the outfall. The "branches" are networks of smaller pipes that contribute to the trunk.
3. Identify manholes to inspect at the farthest downstream node of each contributing branch and one immediately upstream (Figure 51).
4. Working up the network, investigate manholes on each contributing branch and trunk, until the source is narrowed to a specific section of the trunk or contributing branch.
5. Once the discharge is narrowed to a specific section of trunk, select the appropriate on-site investigation method to trace the exact source.
6. If narrowed to a contributing branch, move up or split the branch until a specific pipe segment is isolated, and commence the appropriate on-site investigation to determine the source.

Option 3: Move down the storm drain network

In this option, crews start by inspecting manholes at the "headwaters" of the storm drain network, and progressively move down pipe. This approach works best in very large drainage areas that have many potential continuous and/or intermittent discharges. The Boston Water and Sewer Commission has employed the headwater option to investigate intermittent discharges in complex drainage areas up to three square miles (Jewell, 2001). Field crews certify that each upstream branch of the storm drain network has no contributing discharges before moving down pipe to a "junction manhole" (Figure 52). If discharges are found, the crew performs dye testing to pinpoint the discharge. The crew then confirms that the discharge is removed before moving farther down the pipe network. Figure 53 presents a detailed flow chart that describes this option for analyzing the storm drain network.

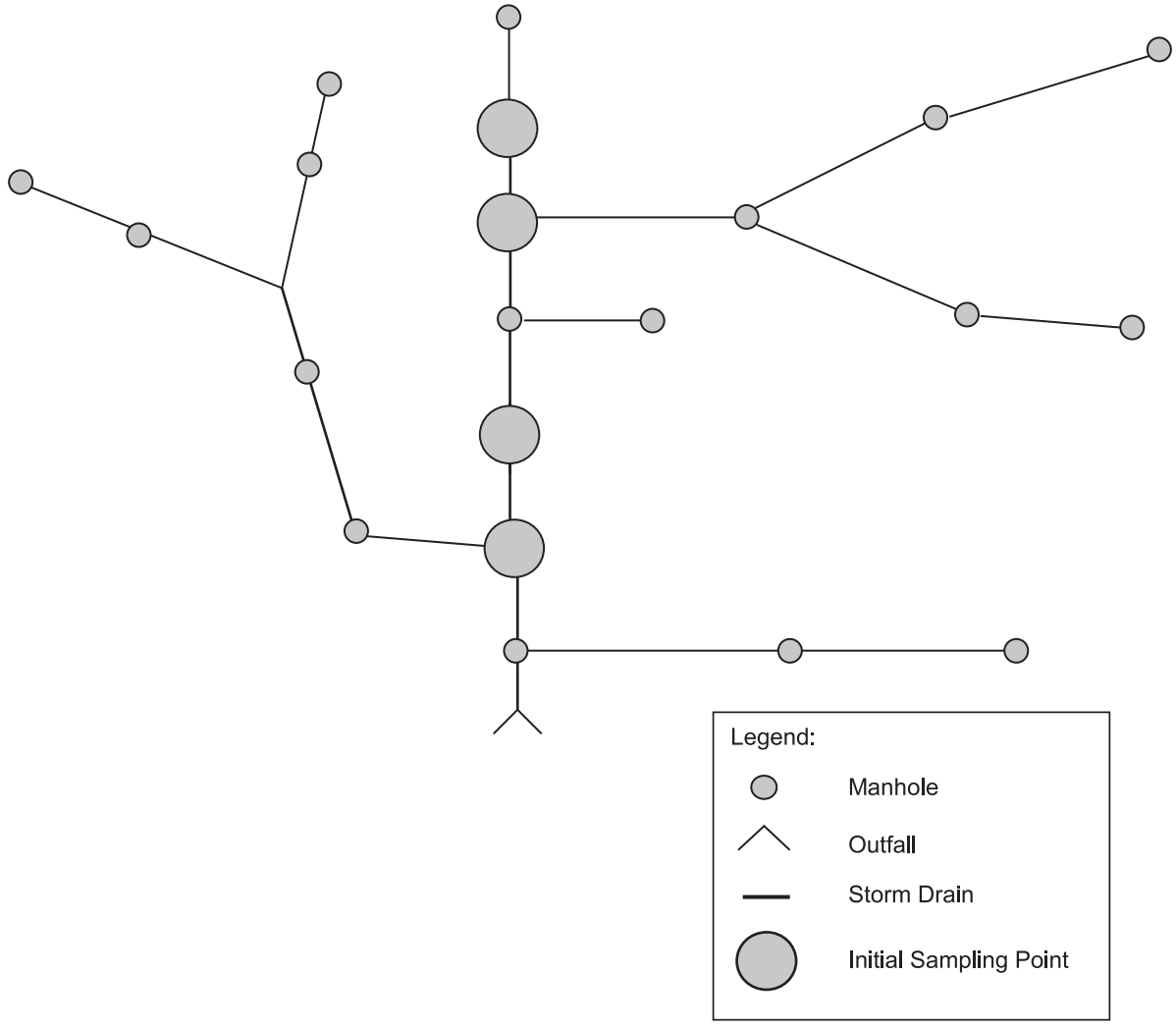


Figure 51: Key initial sampling points along the trunk of the storm drain

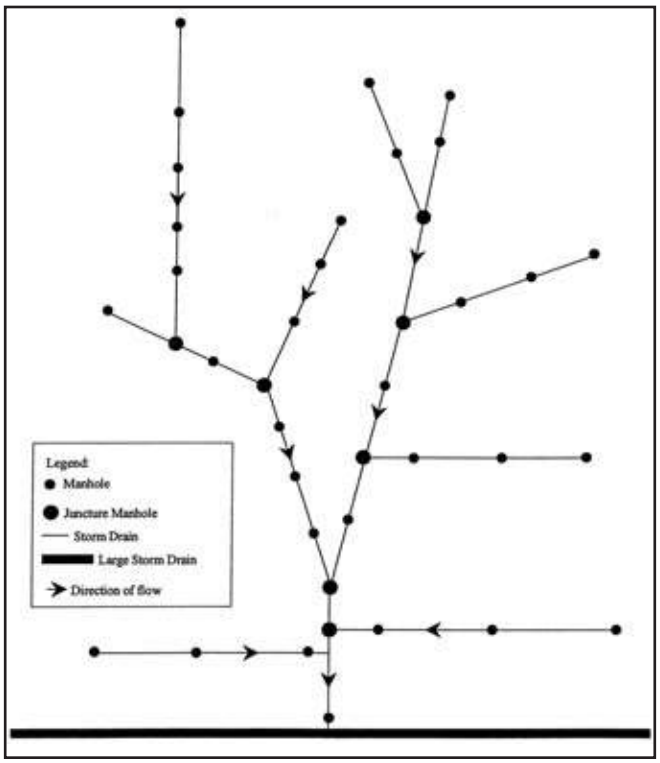


Figure 52: Storm Drain Schematic Identifying "Juncture Manholes" (Source: Jewell, 2001)

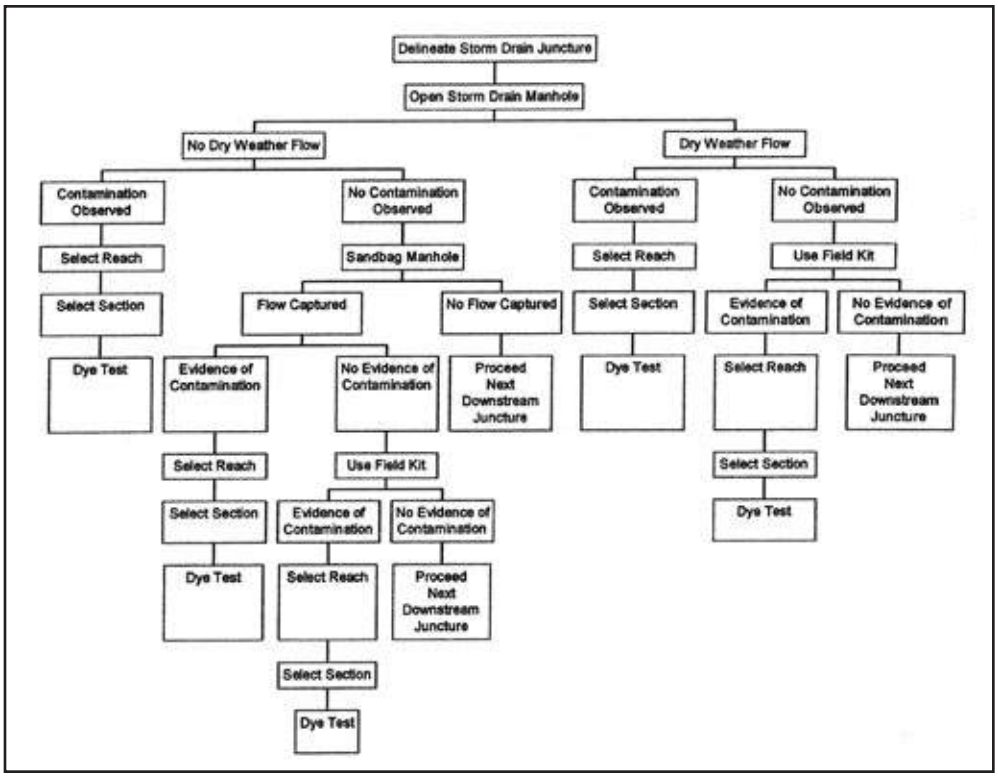


Figure 53: A Process for Following Discharges Down the Pipe (Source: Jewell, 2001)

Dye Testing to Create a Storm Drain Map

As noted earlier, storm drain network investigations are extremely difficult to perform if accurate storm drain maps are not available. In these situations, field crews may need to resort to dye testing to determine the flowpath within the storm drain network. Fluorescent dye is introduced into the storm drain network and suspected manholes are then inspected to trace the path of flow through the network (U.S. EPA, 1990). Two or three member crews are needed for dye testing. One person drops the dye into the trunk while the other(s) looks for evidence of the dye down pipe.

To conduct the investigation, a point of interest or down pipe "stopping point" is identified. Dye is then introduced into manholes upstream of the stopping point to determine if they are connected. The process continues in a systematic manner until an upstream manhole can no longer be determined, whereby a branch or trunk of the system can be defined, updated or corrected. More information on dye testing methods is provided in Section 13.3.

Manhole Inspection: Visual Observations and Indicator Sampling

Two primary methods are used to characterize discharges observed during manhole inspections—visual observations and indicator sampling. In both methods, field crews must first open the manhole to determine whether an illicit discharge is present. Manhole inspections require a crew of two and should be conducted during dry weather conditions.

Basic field equipment and safety procedures required for manhole inspections are outlined in Table 54. In particular, field crews need to be careful about how they will safely divert traffic (Figure 54). Other safety considerations include proper lifting of manhole covers to reduce the potential for back injuries, and testing whether any toxic or flammable fumes exist within the manhole before the cover is removed. Wayne County, MI has developed some useful operational procedures for inspecting manholes, which are summarized in Table 55.

Table 54: Basic Field Equipment Checklist

- Camera and film or digital camera
- Clipboards
- Field sheets
- Field vehicle
- First aid kit
- Flashlight or spotlight
- Gas monitor and probe
- Manhole hook/crow bar
- Mirror
- Storm drain, stream, and street maps
- Reflective safety vests
- Rubber / latex gloves
- Sledgehammer
- Spray paint
- Tape measures
- Traffic cones
- Two-way radios
- Waterproof marker/ pen
- Hand held global positioning satellite (GPS) system receiver (best resolution available within budget, at least 6' accuracy)

Figure 54: Traffic cones divert traffic from manhole inspection area

Table 55: Field Procedure for Removal of Manhole Covers
(Adapted from: Pomeroy et al., 1996)

Field Procedures:

1. Locate the manhole cover to be removed.
2. Divert road and foot traffic away from the manhole using traffic cones.
3. Use the tip of a crowbar to lift the manhole cover up high enough to insert the gas monitor probe. Take care to avoid creating a spark that could ignite explosive gases that may have accumulated under the lid. Follow procedures outlined for the gas monitor to test for accumulated gases.
4. If the gas monitor alarm sounds, close the manhole immediately. Do not attempt to open the manhole until some time is allowed for gases to dissipate.
5. If the gas monitor indicates the area is clear of hazards, remove the monitor probe and position the manhole hook under the flange. Remove the crowbar. Pull the lid off with the hook.
6. When testing is completed and the manhole is no longer needed, use the manhole hook to pull the cover back in place. Make sure the lid is settled in the flange securely.
7. Check the area to ensure that all equipment is removed from the area prior to leaving.

Safety Considerations:

1. Do not lift the manhole cover with your back muscles.
2. Wear steel-toed boots or safety shoes to protect feet from possible crushing injuries that could occur while handling manhole covers.
3. Do not move manhole covers with hands or fingers.
4. Wear safety vests or reflective clothing so that the field crew will be visible to traffic.
5. Manholes may only be entered by properly trained and equipped personnel and when all OSHA and local rules are followed.

Visual Observations During Manhole Inspection

Visual observations are used to observe conditions in the manhole and look for any signs of sewage or dry weather flow. Visual observations work best for obvious illicit discharges that are not masked by groundwater or other "clean" discharges, as shown in Figure 55. Typically, crews progressively inspect manholes in the storm drain network to look for contaminated flows. Key visual observations that are made during manhole inspections include:

- Presence of flow
- Colors
- Odors
- Floatable materials
- Deposits or stains (intermittent flows)

Figure 55: Manhole observation (left) indicates a sewage discharge. Source is identified at an adjacent sewer manhole that overflowed into the storm drain system (right).

Indicator Sampling

If dry weather flow is observed in the manhole, the field crew can collect a sample by attaching a bucket or bottle to a tape measure/rope and lowering it into the manhole (Figure 56). The sample is then immediately analyzed in the field using probes or other tests to get fast results as to whether the flow is clean or dirty. The most common indicator parameter is ammonia, although other potential indicators are described in Chapter 12.

Manhole indicator data is analyzed by looking for "hits," which are individual samples that exceed a benchmark concentration. In addition, trends in indicator concentrations are also examined throughout the storm drain network.

Figure 56: Techniques to sample from the storm drain

Figure 57 profiles a storm drain network investigation that used ammonia as the indicator parameter and a benchmark concentration of 1.0 mg/L. At both the outfall and the first manhole up the trunk, field crews recorded finding "hits" for ammonia of 2.2 mg/L and 2.3 mg/L, respectively. Subsequent manhole inspections further up the network revealed one manhole with no flow, and a second with a hit for ammonia (2.4 mg/L). The crew then tracked the discharge upstream of the second manhole, and found a third manhole with a low ammonia reading (0.05 mg/L) and a fourth with a much higher reading (4.3 mg/L). The crew then redirected its effort to sample above the fourth manhole with the 4.3 mg/L concentration, only to find another low reading. Based on this pattern, the crew concluded the discharge source was located between these two manholes, as nothing else could explain this sudden increase in concentration over this length of pipe.

The results of storm drain network investigations should be systematically documented to guide future discharge investigations, and describe any infrastructure maintenance problems encountered. An example of a sample manhole inspection field log is displayed in Figure 58.

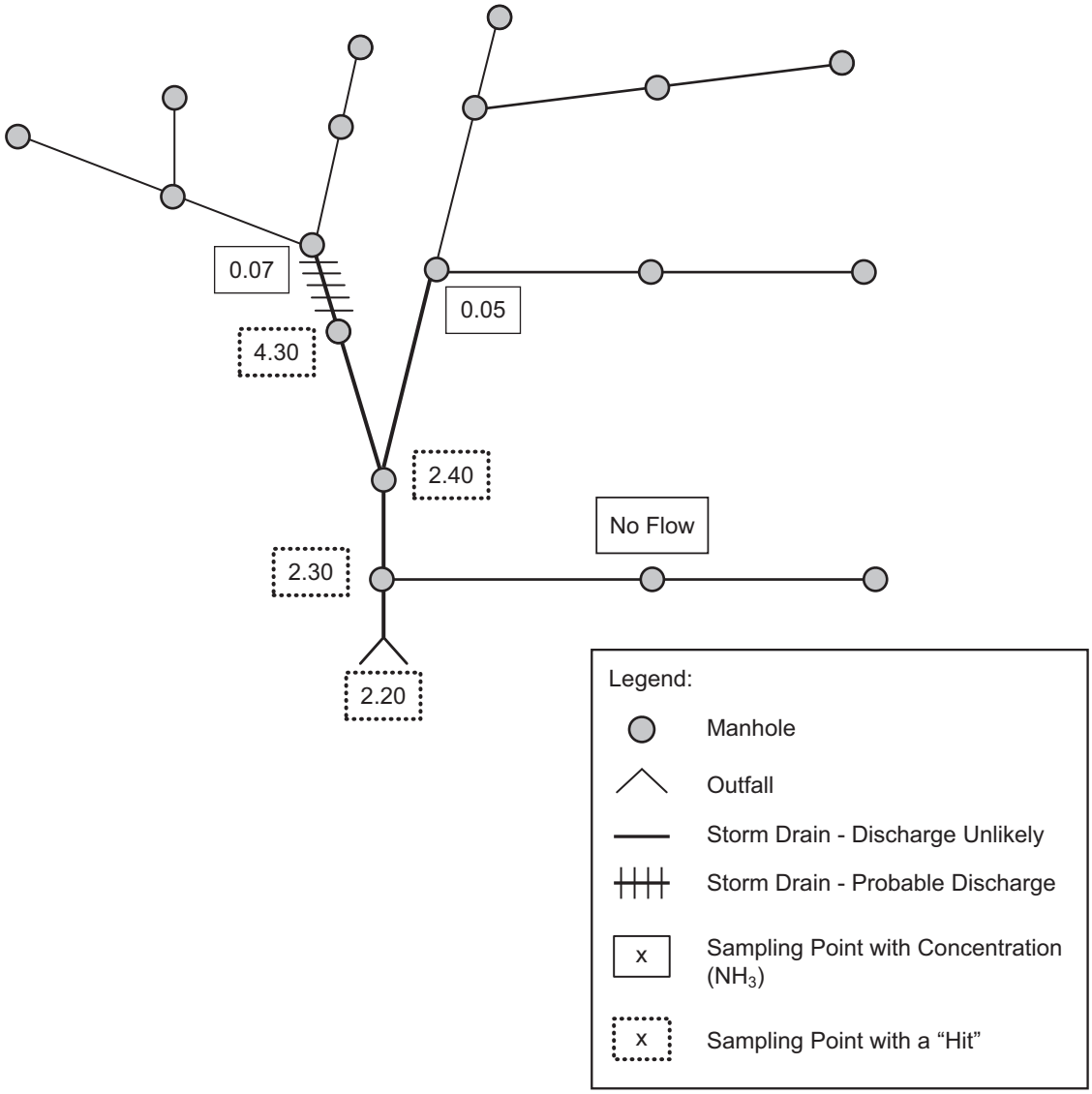
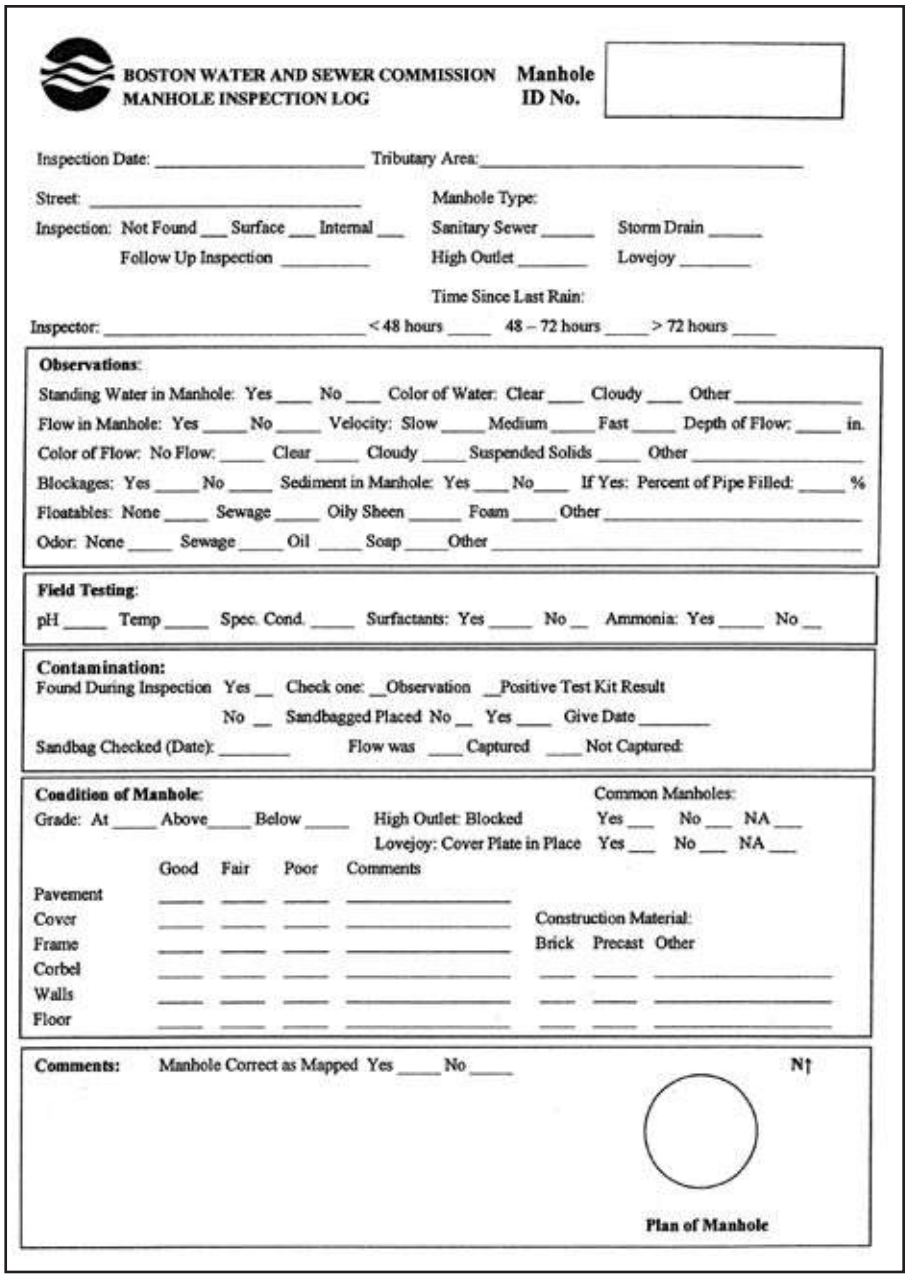


Figure 57: Use of ammonia as a trace parameter to identify illicit discharges



BOSTON WATER AND SEWER COMMISSION
MANHOLE INSPECTION LOG

Manhole ID No. _____

Inspection Date: _____ Tributary Area: _____

Street: _____ Manhole Type:

Inspection: Not Found ___ Surface ___ Internal ___ Sanitary Sewer _____ Storm Drain _____

Follow Up Inspection _____ High Outlet _____ Lovejoy _____

Time Since Last Rain:

Inspector: _____ < 48 hours _____ 48 – 72 hours _____ > 72 hours _____

Observations:

Standing Water in Manhole: Yes ____ No ____ Color of Water: Clear ____ Cloudy ____ Other _____

Flow in Manhole: Yes _____ No _____ Velocity: Slow _____ Medium _____ Fast _____ Depth of Flow: _____ in.

Color of Flow: No Flow: _____ Clear _____ Cloudy _____ Suspended Solids _____ Other _____

Blockages: Yes _____ No _____ Sediment in Manhole: Yes ____ No____ If Yes: Percent of Pipe Filled: _____ %

Floatables: None _____ Sewage _____ Oily Sheen _____ Foam _____ Other _____

Odor: None _____ Sewage _____ Oil _____ Soap _____ Other _____

Field Testing:

pH _____ Temp _____ Spec. Cond. _____ Surfactants: Yes _____ No __ Ammonia: Yes _____ No __

Contamination:

Found During Inspection Yes __ Check one: __Observation __Positive Test Kit Result

No __ Sandbagged Placed No __ Yes ____ Give Date _____

Sandbag Checked (Date): _____ Flow was ____ Captured ____ Not Captured:

Condition of Manhole:

Grade: At _____ Above _____ Below _____ High Outlet: Blocked Yes ___ No ___ NA ___

Lovejoy: Cover Plate in Place Yes ___ No ___ NA ___

Common Manholes:

	Good	Fair	Poor	Comments
Pavement	____	____	____	_____
Cover	____	____	____	_____
Frame	____	____	____	_____
Corbel	____	____	____	_____
Walls	____	____	____	_____
Floor	____	____	____	_____

Construction Material:

	Brick	Precast	Other
	____	____	_____
	____	____	_____
	____	____	_____

Comments: Manhole Correct as Mapped Yes _____ No _____

N↑

Plan of Manhole

Figure 58: Boston Water and Sewer Commission Manhole Inspection Log (Source: Jewell, 2001)

Methods to isolate intermittent discharges in the storm drain network

Intermittent discharges are often challenging to trace in the storm drain network, although four techniques have been used with some success.

Sandbags

This technique involves placement of sandbags or similar barriers within strategic manholes in the storm drain network to form a temporary dam that collects any intermittent flows that may occur. Any flow collected behind the sandbag is then assessed using visual observations or by indicator sampling. Sandbags are lowered on a rope through the manhole to form a dam along the bottom of the storm drain, taking care not to fully block the pipe (in case it rains before the sandbag is retrieved). Sandbags are typically installed at junctions in the network to eliminate contributing branches from further consideration (Figure 59). If no flow collects behind the sandbag, the upstream pipe network can be ruled out as a source of the intermittent discharge.

Sandbags are typically left in place for no more than 48 hours, and should only be installed when dry weather is forecast. Sandbags should not be left in place during a heavy rainstorm. They may cause a blockage in the storm drain, or, they may be washed downstream and lost. The biggest downside to sandbagging is that it requires at least two trips to each manhole.

Optical Brightener Monitoring (OBM) Traps

Optical brightener monitoring (OBM) traps, profiled in Chapter 12, can also be used to detect intermittent flows at manhole junctions. When these absorbent pads are anchored in the pipe to capture dry weather flows, they can be used to determine the presence of flow and/or detergents. These OBM traps are frequently installed by lowering them into an open-grate drop inlet or storm drain inlet, as shown in Figure 60. The pads are then retrieved after 48 hours and are observed under a fluorescent light (this method is most reliable for undiluted washwaters).

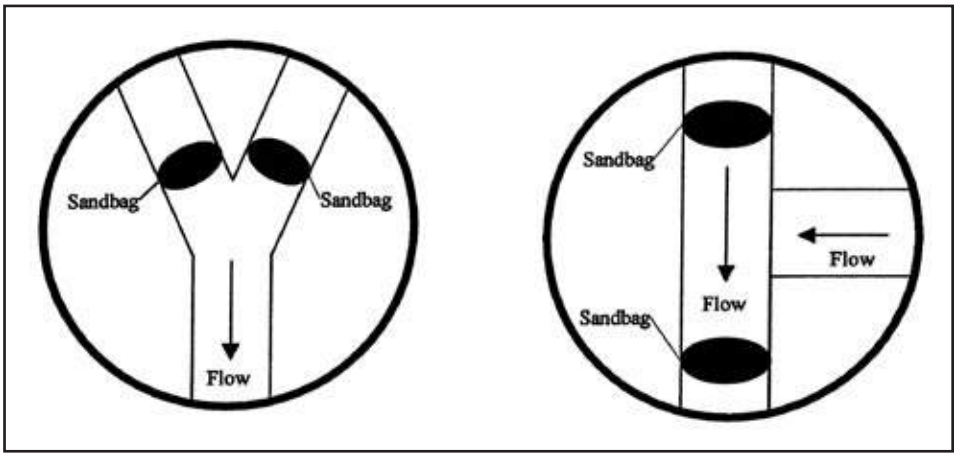


Figure 59: Example sandbag placement (Source: Jewell, 2001)

Figure 60: Optical Brightener Placement in the Storm Drain
(Source: Sargent and Castonguay, 1998)

Automatic Samplers

A few communities have installed automated samplers at strategic points within the storm drain network system that are triggered by small dry weather flows and collect water quality samples of intermittent discharges. Automated sampling can be extremely expensive, and is primarily used in very complex drainage areas that have severe intermittent discharge problems. Automated samplers can pinpoint the specific date and hours when discharges occur, and characterize its chemical composition, which can help crews fingerprint the generating source.

Observation of Deposits or Stains

Intermittent discharges often leave deposits or stains within the storm drain pipe or manhole after they have passed. Thus, crews should note whether any deposits or stains are present in the manhole, even if no dry weather flow is observed. In some cases, the origin of the discharge can be surmised by collecting indicator samples in the water ponded within the manhole sump. Stains and deposits, however, are not always a conclusive way to trace intermittent discharges in the storm drain network.

13.2 Drainage Area Investigations

The source of some illicit discharges can be determined through a survey or analysis of the drainage area of the problem outfall. The simplest approach is a rapid windshield survey of the drainage area to find the potential discharger or generating sites. A more sophisticated approach relies on an analysis of available GIS data and permit databases to identify industrial or other generating sites. In both cases, drainage area investigations are only effective if the discharge observed at an outfall has distinct or unique characteristics that allow crews to quickly ascertain the probable operation or business that is generating it. Often, discharges with a unique color, smell, or off-the-chart indicator sample reading may point to a specific industrial or commercial source. Drainage area investigations are not helpful in tracing sewage discharges, since they are often not always related to specific land uses or generating sites.

Rapid Windshield Survey

A rapid drive-by survey works well in small drainage areas, particularly if field crews are already familiar with its business operations. Field crews try to match the characteristics of the discharge to the most likely type of generating site, and then inspect all of the sites of the same type within the drainage area until the culprit is found. For example, if fuel is observed at an outfall, crews might quickly check every business operation in the catchment that stores or dispenses fuel. Another example is illustrated in Figure 61 where extremely dense algal growth was observed in a small stream during the winter. Field crews were aware of a fertilizer storage site in the drainage area, and a quick inspection identified it as the culprit.

Figure 61: Symptom (left): Discoloration of stream; Diagnosis: Extra hydroseed leftover from an upstream application (middle) was dumped into a storm drain by municipal officials (right).

A third example of the windshield survey approach is shown in Figure 62, where a very thick, sudsy and fragrant discharge was noted at a small outfall. The discharge appeared to consist of wash water, and the only commercial laundromat found upstream was confirmed to be the source. On-site testing may still be needed to identify the specific plumbing or connection generating the discharge.

Detailed Drainage Area Investigations

In larger or more complex drainage areas, GIS data can be analyzed to pinpoint the source of a discharge. If only general land use data exist, maps can at least highlight suspected industrial areas. If more detailed SIC code data are available digitally, the GIS can be used to pull up specific hotspot operations or generating sites that could be potential dischargers. Some of the key discharge indicators that are associated with hotspots and specific industries are reviewed in Appendix K.

13.3 On-site Investigations

On-site investigations are used to pinpoint the exact source or connection producing a discharge within the storm drain network. The three basic approaches are dye, video and smoke testing. While each approach can determine the actual source of a discharge, each needs to be applied under the right conditions and test limitations (see Table 56). It should be noted that on-site investigations are not particularly effective in finding *indirect* discharges to the storm drain network.

Figure 62: The sudsy, fragrant discharge (left) indicates that the laundromat is the more likely culprit than the florist (right).

Table 56: Techniques to Locate the Discharge		
Technique	**Best Applications**	**Limitations**
Dye Testing	• Discharge limited to a very small drainage area (<10 properties is ideal) • Discharge probably caused by a connection from an individual property • Commercial or industrial land use	• May be difficult to gain access to some properties
Video Testing	• Continuous discharges • Discharge limited to a single pipe segment • Communities who own equipment for other investigations	• Relatively expensive equipment • Cannot capture non-flowing discharges • Often cannot capture discharges from pipes submerged in the storm drain
Smoke Testing	• Cross-connection with the sanitary sewer • Identifying other underground sources (e.g., leaking storage techniques) caused by damage to the storm drain	• Poor notification to public can cause alarm • Cannot detect all illicit discharges

TIP

The Wayne County Department of the Environment provides excellent training materials on on-site investigations, as well as other illicit discharge techniques. More information about this training can be accessed from their website: http://www.wcdoe.org/Watershed/Programs___Srvcs_/IDEP/idep.htm.

Figure 63: Dye Testing Plumbing (NEIWPCC, 2003)

Dye Testing

Dye testing is an excellent indicator of illicit connections and is conducted by introducing non-toxic dye into toilets, sinks, shop drains and other plumbing fixtures (see Figure 63). The discovery of dye in the storm drain, rather than the sanitary sewer, conclusively determines that the illicit connection exists.

Before commencing dye tests, crews should review storm drain and sewer maps to identify lateral sewer connections and how they can be accessed. In addition, property owners must be notified to obtain entry permission. For industrial or commercial properties, crews should carry a letter to document their legal authority to gain access to the property. If time permits, the letter can be sent in advance of the dye testing. For residential properties, communication can be more challenging. Unlike commercial properties, crews are not guaranteed access to homes, and should call ahead to ensure that the owner will be home on the day of testing.

Communication with other local agencies is also important since any dye released to the storm drain could be mistaken for a spill or pollution episode. To avoid a costly and embarrassing response to a false alarm,

crews should contact key spill response agencies using a "quick fax" that describes when and where dye testing is occurring (Tuomari and Thomson, 2002). In addition, crews should carry a list of phone numbers to call spill response agencies in the event dye is released to a stream.

At least two staff are needed to conduct dye tests – one to flush dye down the plumbing fixtures and one to look for dye in the downstream manhole(s). In some cases, three staff may be preferred, with two staff entering the private residence or building for both safety and liability purposes.

The basic equipment to conduct dye tests is listed in Table 57 and is not highly specialized. Often, the key choice is the type of dye to use for testing. Several options are profiled in Table 58. In most cases, liquid dye is used, although solid dye tablets can also be placed in a mesh bag and lowered into the manhole on a rope (Figure 64). If a

Table 57: Key Field Equipment for Dye Testing
(Source: Wayne County, MI, 2000)

Maps, Documents
- Sewer and storm drain maps (sufficient detail to locate manholes)
- Site plan and building diagram
- Letter describing the investigation
- Identification (e.g., badge or ID card)
- Educational materials (to supplement pollution prevention efforts)
- List of agencies to contact if the dye discharges to a stream.
- Name of contact at the facility

Equipment to Find and Lift the Manhole Safely (small manhole often in a lawn)
- Probe
- Metal detector
- Crow bar
- Safety equipment (hard hats, eye protection, gloves, safety vests, steel-toed boots, traffic control equipment, protective clothing, gas monitor)

Equipment for Actual Dye Testing and Communications
- 2-way radio
- Dye (liquid or "test strips")
- High powered lamps or flashlights
- Water hoses
- Camera

Figure 64: Dye in a mesh bag is placed into an upstream manhole (left); Dye observed at a downstream manhole traces the path of the storm drain (right)

longer pipe network is being tested, and dye is not expected to appear for several hours, charcoal packets can be used to detect the dye (GCHD, 2002). Charcoal packets can be secured and left in place for a week or two, and then analyzed for the presence of dye. Instructions for using charcoal packets in dye testing can be accessed at the following website: http://bayinfo.tamug.tamu.edu/gbeppubs/ms4.pdf.

The basic drill for dye tests consists of three simple steps. First, flush or wash dye down the drain, fixture or manhole. Second, pop open downgradient sanitary sewer manholes and check to see if any dye appears. If none is detected in the sewer manhole after an hour or so, check downgradient storm drain manholes or outfalls for the presence of dye. Although dye testing is fairly straightforward, some tips to make testing go more smoothly are offered in Table 59.

Table 58: Dye Testing Options

Product	Applications
Dye Tablets	• Compressed powder, useful for releasing dye over time • Less messy than powder form • Easy to handle, no mess, quick dissolve • Flow mapping and tracing in storm and sewer drains • Plumbing system tracing • Septic system analysis • Leak detection
Liquid Concentrate	• Very concentrated, disperses quickly • Works well in all volumes of flow • Recommended when metering of input is required • Flow mapping and tracing in storm and sewer drains • Plumbing system tracing • Septic system analysis • Leak detection
Dye Strips	• Similar to liquid but less messy
Powder	• Can be very messy and must dissolve in liquid to reach full potential • Recommended for very small applications or for very large applications where liquid is undesirable • Leak detection
Dye Wax Cakes	• Recommended for moderate-sized bodies of water • Flow mapping and tracing in storm and sewer drains
Dye Wax Donuts	• Recommended for large sized bodies of water (lakes, rivers, ponds) • Flow mapping and tracing in storm and sewer drains • Leak detection

Table 59: Tips for Successful Dye Testing
(Adapted from Tuomari and Thompson, 2002)

Dye Selection
- Green and liquid dyes are the easiest to see.
- Dye test strips can be a good alternative for residential or some commercial applications. (Liquid can leave a permanent stain).
- Check the sanitary sewer before using dyes to get a "base color." In some cases, (e.g., a print shop with a permitted discharge to the sanitary sewer), the sewage may have an existing color that would mask a dye.
- Choose two dye colors, and alternate between them when testing multiple fixtures.

Selecting Fixtures to Test
- Check the plumbing plan for the site to isolate fixtures that are separately connected.
- For industrial facilities, check most floor drains (these are often misdirected).
- For plumbing fixtures, test a representative fixture (e.g., a bathroom sink).
- Test some locations separately (e.g., washing machines and floor drains), which may be misdirected.
- If conducting dye investigations on multiple floors, start from the basement and work your way up.
- At all fixtures, make sure to flush with plenty of water to ensure that the dye moves through the system.

Selecting a Sewer Manhole for Observations
- Pick the closest manhole possible to make observations (typically a sewer lateral).
- If this is not possible, choose the nearest downstream manhole.

Communications Between Crew Members
- The individual conducting the dye testing calls in to the field person to report the color dye used, and when it is dropped into the system.
- The field person then calls back when dye is observed in the manhole.
- If dye is not observed (e.g., after two separate flushes have occurred), dye testing is halted until the dye appears.

Locating Missing Dye
- The investigation is not complete until the dye is found. Some reasons for dye not appearing include:
- The building is actually hooked up to a septic system.
- The sewer line is clogged.
- There is a leak in the sewer line or lateral pipe.

Video Testing

Video testing works by guiding a mobile video camera through the storm drain pipe to locate the actual connection producing an illicit discharge. Video testing shows flows and leaks within the pipe that may indicate an illicit discharge, and can show cracks and other pipe damage that enable sewage or contaminated water to flow into the storm drain pipe.

Video testing is useful when access to properties is constrained, such as residential neighborhoods. Video testing can also be expensive, unless the community already owns and uses the equipment for sewer inspections. This technique will not detect all types of discharges, particularly when the illicit connection is not flowing at the time of the video survey.

Different types of video camera equipment are used, depending on the diameter and condition of the storm sewer being tested.

Field crews should review storm drain maps, and preferably visit the site before selecting the video equipment for the test. A field visit helps determine the camera size needed to fit into the pipe, and if the storm drain has standing water.

In addition to standard safety equipment required for all manhole inspections, video testing requires a Closed-Circuit Television (CCTV) and supporting items. Many commercially available camera systems are specifically adapted to televise storm sewers, ranging from large truck or van-mounted systems to much smaller portable cameras. Cameras can be self-propelled or towed. Some specifications to look for include:

- The camera should be capable of radial view for inspection of the top, bottom, and sides of the pipe and for looking up lateral connections.
- The camera should be color.
- Lighting should be supplied by a lamp on the camera that can light the entire periphery of the pipe.

When inspecting the storm sewer, the CCTV is oriented to keep the lens as close as possible to the center of the pipe. The camera can be self-propelled through the pipe using a tractor or crawler unit or it may be towed through on a skid unit (see Figures 65 and 66). If the storm drain has ponded water, the camera should be attached to a raft, which floats through the storm sewer from one manhole to the next. To see details of the sewer, the camera and lights should be able to swivel both horizontally and vertically. A video record of the inspection should be made for future reference and repairs (see Figure 67).

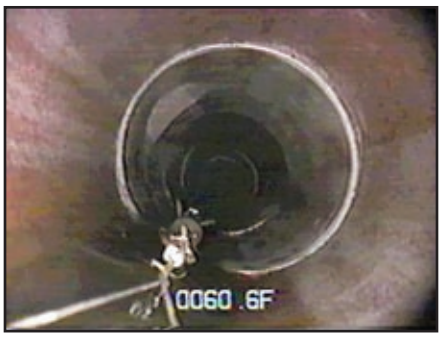


Figure 65: Camera being towed

Smoke Testing

Smoke testing is another "bottom up" approach to isolate illicit discharges. It works by introducing smoke into the storm drain system and observing where the smoke surfaces. The use of smoke testing to detect illicit discharges is a relatively new application, although many communities have used it to check for infiltration and inflow into their sanitary sewer network. Smoke testing can find improper

Figure 66: Tractor-mounted camera

Figure 67: Review of an inspection video

connections, or damage to the storm drain system (Figure 68). This technique works best when the discharge is confined to the upper reaches of the storm drain network, where pipe diameters are to small for video testing and gaining access to multiple properties renders dye testing infeasible.

Notifying the public about the date and purpose of smoke testing before starting is critical. The smoke used is non-toxic, but can cause respiratory irritation, which can be a problem for some residents. Residents should be notified at least two weeks prior to testing, and should be provided the following information (Hurco Technologies, Inc., 2003):

- Date testing will occur
- Reason for smoke testing
- Precautions they can take to prevent smoke from entering their homes or businesses
- What they need to do if smoke enters their home or business, and any health concerns associated with the smoke
- A number residents can call to relay any particular health concerns (e.g., chronic respiratory problems)

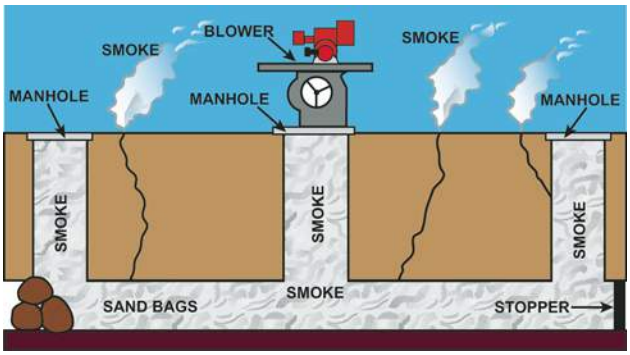


Figure 68: Smoke Testing System Schematic

Program managers should also notify local media to get the word out if extensive smoke testing is planned (e.g., television, newspaper, and radio). On the actual day of testing, local fire, police departments and 911 call centers should be notified to handle any calls from the public (Hurco Technologies, Inc., 2003).

The basic equipment needed for smoke testing includes manhole safety equipment, a smoke source, smoke blower, and sewer plugs. Two smoke sources can be used for smoke testing. The first is a smoke "bomb," or "candle" that burns at a controlled rate and releases very white smoke visible at relatively low concentrations (Figure 69). Smoke bombs are suspended beneath a blower in a manhole. Candles are available in 30 second to three minute sizes. Once opened, smoke bombs should be kept in a dry location and should be used within one year.

The second smoke source is liquid smoke, which is a petroleum-based product that is injected into the hot exhaust of a blower where it is heated and vaporized (Figure 70). The length of smoke production can vary depending on the length of the pipe being

Figure 69: Smoke Candles

Figure 70: Smoke blower

tested. In general, liquid smoke is not as consistently visible and does not travel as far as smoke from bombs (USA Blue Book).

Smoke blowers provide a high volume of air that forces smoke through the storm drain pipe. Two types of blowers are commonly used: "squirrel cage" blowers and direct-drive propeller blowers. Squirrel cage blowers are large and may weigh more than 100 pounds, but allow the operator to generate more controlled smoke output. Direct-drive propeller blowers are considerably lighter and more compact, which allows for easier transport and positioning.

Three basic steps are involved in smoke testing. First, the storm drain is sealed off by plugging storm drain inlets. Next, the smoke is released and forced by the blower through the storm drain system. Lastly, the crew looks for any escape of smoke above-ground to find potential leaks.

One of three methods can be used to seal off the storm drain. Sandbags can be lowered into place with a rope from the street surface. Alternatively, beach balls that have a diameter slightly larger than the drain can be inserted into the pipe. The beach ball is then placed in a mesh bag with a rope attached to it so it can be secured and retrieved. If the beach ball gets stuck in the pipe, it can simply be punctured, deflated and removed. Finally, expandable plugs are available, and may be inserted from the ground surface.

Blowers should be set up next to the open manhole after the smoke is started. Only one manhole is tested at a time. If smoke candles are used, crews simply light the candle, place it in a bucket, and lower it in the manhole. The crew then watches to see where smoke escapes from the pipe. The two most common situations that indicate an illicit discharge are when smoke is seen rising from internal plumbing fixtures (typically reported by residents) or from sewer vents. Sewer vents extend upward from the sewer lateral to release gas buildup, and are not supposed to be connected to the storm drain system.

13.4 Septic System Investigations

The techniques for tracing illicit discharges are different in rural or low-density residential watersheds. Often, these watersheds lack sanitary sewer service and storm water is conveyed through ditches or swales, rather than enclosed pipes. Consequently, many illicit discharges enter the stream as indirect discharges, through surface breakouts of septic fields or through straight pipe discharges from bypassed septic systems.

The two broad techniques used to find individual septic systems—on-site investigations and infrared imagery—are described in this section.

On-Site Septic Investigations

Three kinds of on-site investigations can be performed at individual properties to determine if the septic system is failing, including homeowner survey, surface condition analysis and a detailed system inspection. The first two investigations are rapid and relatively simple assessments typically conducted in targeted watershed areas. Detailed system inspections are a much more thorough investigation of the functioning of the septic system that is conducted by a certified professional. Detailed system inspections may occur at time of sale of a property, or be triggered by poor scores on the rapid homeowner survey or surface condition analysis.

Homeowner Survey

The homeowner survey consists of a brief interview with the property owner to determine the potential for current or future failure of the septic system, and is often done in conjunction with a surface condition analysis.

Table 60 highlights some common questions to ask in the survey, which inquire about resident behaviors, system performance and maintenance activity.

Surface Condition Analysis

The surface condition analysis is a rapid site assessment where field crews look for obvious indicators that point to current or potential production of illicit discharges by the septic system (Figure 71). Some of the key surface conditions to analyze have been described by Andrews *et al.*, (1997) and are described below:

- Foul odors in the yard
- Wet, spongy ground; lush plant growth; or burnt grass near the drain field
- Algal blooms or excessive weed growth in adjacent ditches, ponds and streams
- Shrubs or trees with root damage within 10 feet of the system
- Cars, boats, or other heavy objects located over the field that could crush lateral pipes
- Storm water flowing over the drain field
- Cave-ins or exposed system components
- Visible liquid on the surface of the drain field (e.g., surface breakouts)
- Obvious system bypasses (e.g., straight pipe discharges)

Table 60: Septic System Homeowner Survey Questions
(Adapted from Andrews et al., 1997 and Holmes Inspection Services)

- How many people live in the house?[1]
- What is the septic tank capacity?[2]
- Do drains in the house empty slowly or not at all?
- When was the last time the system was inspected or maintained?
- Does sewage back up into the house through drain lines?
- Are there any wet, smelly spots in the yard?
- Is the septic tank effluent piped so it drains to a road ditch, a storm sewer, a stream, or is it connected to a farm drain tile?

[1] Water usage ranges from 50 to 100 gallons per day per person. This information can be used to estimate the wastewater load from the house (Andrews et. al, 1997).
[2] The septic tank should be large enough to hold two days' worth of wastewater (Andrews et. al, 1997).

a.  b. 

Figure 71: (a) Straight pipe discharge to nearby stream. (b) Algal bloom in a nearby pond.
(Sources: a- Snohomish County, WA, b- King County, WA)

Detailed System Inspection

The detailed system inspection is a much more thorough inspection of the performance and function of the septic system, and must be completed by a certified professional. The inspector certifies the structural integrity of all components of the system, and checks the depth of solids in the septic tank to determine if the system needs to be pumped out. The inspector also sketches the system, and estimates distance to groundwater, surface water, and drinking water sources. An example septic system inspection form from Massachusetts can be found at http://www.state.ma.us/dep/brp/wwm/soilsys.htm.

Although not always incorporated into the inspection, dye testing can sometimes point to leaks from broken pipes, or direct discharges through straight pipes that might be missed during routine inspection. Dye can be introduced into plumbing fixtures in the home, and flushed with sufficient running water. The inspector then watches the septic field, nearby ditches, watercourses and manholes for any signs of the dye. The dye may take several hours to appear, so crews may want to place charcoal packets in adjacent waters to capture dye until they can return later to retrieve them.

Infrared Imagery

Infrared imagery is a special type of photography with gray or color scales that represent differences in temperature and emissivity of objects in the image (www.stocktoninfrared.com), and can be used to locate sewage discharges. Several different infrared imagery techniques can be used to identify illicit discharges. The following discussion highlights two of these: aerial infrared thermography[13] and color infrared aerial photography.

Infrared Thermography

Infrared thermography is increasingly being used to detect illicit discharges and failing septic systems. The technique uses the temperature difference of sewage as a marker to locate these illicit discharges. Figure 72 illustrates the thermal difference

[13] Infrared thermography is also being used by communities such as Mecklenburg County and the City of Charlotte in NC to detect illicit discharges at outfalls.

between an outfall discharge (with a higher temperature) and a stream.

The equipment needed to conduct aerial infrared thermography includes an aircraft (plane or helicopter); a high-resolution, large format, infrared camera with appropriate mount; a GPS unit; and digital recording equipment. If a plane is used, a higher resolution camera is required since it must operate at higher altitudes. Pilots should be experienced since flights take place at night, slowly, and at a low altitude. The camera may be handheld, but a mounted camera will provide significantly clearer results for a larger area. The GPS can be combined with a mobile mapping program and a video encoder-decoder that encodes and displays the coordinates, date, and time (Stockton, 2000). The infrared data are analyzed after the flight by trained analysts to locate suspected discharges, and field crews then inspect the ground-truthed sites to confirm the presence of a failing septic system.

Late fall, winter, and early spring are typically the best times of year to conduct these investigations in most regions of the country. This allows for a bigger difference between receiving water and discharge temperatures, and interference from vegetation is minimized (Stockton, 2004b). In addition, flights should take place at night to minimize reflected and direct daylight solar radiation that may adversely affect the imagery (Stockton, 2004b).

Color Infrared Aerial Photography

Color infrared aerial photography looks for changes in plant growth, differences in soil moisture content, and the presence of standing water on the ground to primarily identify failing septic systems (Figure 73).

The Tennessee Valley Authority (TVA) uses color infrared aerial photography to detect failing septic systems in reservoir watersheds. Local health departments conduct follow-up ground-truthing surveys to determine if a system is actually failing (Sagona, 1986). Similar to thermography, it is recommended that flights take place at night, during leaf-off conditions, or when the water table is at a seasonal high (which is when most failures typically occur (U.S. EPA, 1999).

Figure 72: Aerial thermography showing sewage leak

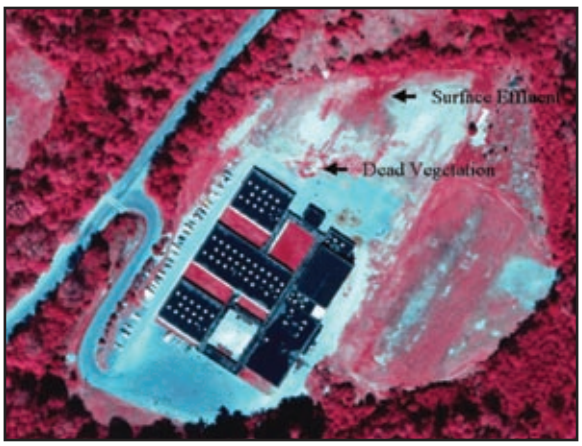


Figure 73: Dead vegetation and surface effluent are evidence of a septic system surface failure.
(Source: U.S. EPA, 1999)

13.5 The Cost to Trace Illicit Discharge Sources

Tracing illicit discharges to their source can be an elusive and complex process, and precise staffing and budget data are difficult to estimate. Experience of Phase I NPDES communities that have done these investigations in the past can shed some light on cost estimates. Some details on unit costs for common illicit discharge investigations are provided below.

Costs for Dye, Video, and Smoke Testing

The cost of smoke, dye, and video testing can be substantial and staff intensive, and often depend on investigation specific factors, such as the complexity of the drainage network, density and age of buildings, and complexity of land use. Wayne County, MI, has estimated the cost of dye testing at $900 per facility. Video testing costs range from $1.50 to $2.00 per foot, although this increases by $1.00 per foot if pipe cleaning is needed prior to testing.

Table 61 summarizes the costs of start-up equipment for basic manhole entry and inspection, which is needed regardless of which type of test is performed. Tables 62 through 64 provide specific equipment costs for dye, video and smoke testing, respectively.

Table 61: Common Field Equipment Needed for Dye, Video, and Smoke Testing

Item	Cost
1 Digital Camera	$200
Clipboards, Pens, Batteries	$25
1 Field vehicle	$15,000 - $35,000
1 First aid kit	$30
1 Spotlight	$40
1 Gas monitor and probe	$900 - $2,100
1 Hand-held GPS Unit	$150
2 Two-way radios	$250 - $750
1 Manhole hook	$80 - $130
1 Mirror	$70 - $130
2 Reflective safety vests	$40
Rubber/latex gloves (box of 100)	$25
1 Can of Spray Paint	$5
4 Traffic Cones	$50

Table 62: Equipment Costs for Dye Testing		
Product	**Water Volume**	**Cost**
Dye Strips	1 strip/500 gallons	$75 – $94 per 100 strips
Dye Tablets	0 – 50,000 gallons	$40 per 200 tablets
Liquid Concentrate (Rhodamine WT)	0 – 50,000 gallons	$80 – $90 per gallon $15 – $20 per pint
Powder	50,000 + gallons	$77 per lb
Dye Wax Cakes	20,000 – 50,000 gallons	$12 per one 1.25 ounce cake
Dye Wax Donuts	50,000 + gallons	$104 – $132 per 42 oz. donut
Price Sources: *Aquatic Eco-Systems http://www.aquaticeco.com/* *Cole Parmer http:/www.coleparmer.com* *USA Blue Book http:/www.usabluebook.com*		

Table 63: Equipment Costs for Video Testing	
Equipment	**Cost**
GEN-EYE 2™ B&W Sewer Camera with VCR & 200' Push Cable	$5,800
100' Push Rod and Reel Camera for 2" – 10" Pipes	$5,300
200' Push Rod and Reel Camera for 8" – 24" Pipes	$5,800
Custom Saturn III Inspection System 500' cable for 6-16" Lines	$32,000 ($33,000 with 1000 foot cable)
OUTPOST • Box with build-out • Generator • Washdown system	 $6,000 $2,000 $1,000
Video Inspection Trailer • 7'x10' trailer & build-out • Hardware and software package • Incidentals	 $18,500 $15,000 $5,000
Sprinter Chassis Inspection Vehicle • Van (with build-out for inspecting 6" – 24" pipes) • Crawler (needed to inspect pipes >24") • Software upgrade (optional but helpful for extensive pipe systems)	 $130,000 $18,000 $8,000
Sources: USA Blue Book and Envirotech	

Table 64: Equipment Costs for Smoke Testing	
Equipment	**Cost**
Smoke Blower	$1,000 to $2,000 each
Liquid Smoke	$38 to $45 per gallon
Smoke Candles, 30 second (4,000 cubic feet)	$27.50 per dozen
Smoke Candles, 60 Second (8,000 cubic feet)	$30.50 per dozen
Smoke Candles, 3 Minute (40,000 cubic feet)	$60.00 per dozen
Sources: Hurco Tech, 2003 and Cherne Industries, 2003	

Costs for Septic System Investigations

Most septic system investigations are relatively low cost, but factors such as private property access, notification, and the total number of sites investigated can increase costs. Unit costs for the three major septic system investigations are described below.

Homeowner Survey and Surface Condition Analysis

Both the homeowner survey and the surface condition analysis are relatively low cost investigation techniques. Assuming that a staff person can investigate one home per hour, the average cost per inspection is approximately $25. A substantial cost savings can be realized by using interns or volunteers to conduct these simple investigations.

Detailed System Inspection

Septic system inspections are more expensive, but a typical unit cost is about $250, and may also include an additional cost of pumping the system, at roughly $150, if pumping is required to complete the inspection (Wayne County, 2003). This cost is typically charged to the homeowner as part of a home inspection.

Aerial Infrared Thermography

The equipment needed to conduct aerial infrared thermography is expensive; cameras alone may range from $250,000 to $500,000 (Stockton, 2004a). However, private contractors provide this service. In general, the cost to contract an aerial infrared thermography investigation depends on the length of the flight (flights typically follow streams or rivers); how difficult it will be to fly the route; the number of heat anomalies expected to be encountered; the expected post-flight processing time (typically, four to five hours of analysis for every hour flown); and the distance of the site from the plane's "home" (Stockton, 2004a). The cost range is typically $150 to $400 per mile of stream or river flown, which includes the flight and post-flight analyses (Stockton, 2004a).

As an alternative, local police departments may already own an infrared imaging system that may be used. For instance, the Arkansas Department of Health used a state police helicopter with a Forward Looking Infrared (FLIR) imaging system, GPS, video equipment, and maps (Eddy, 2000). The disadvantage to this is that the equipment may not be available at optimal times to conduct the investigation. In addition, infrared imaging equipment used by police departments may not be sensitive enough to detect the narrow range of temperature difference (only a few degrees) often expected for sewage flows (Stockton, 2004a).

Attachment C

Endpoint Determination Guidance

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Endpoint Determination Guidance

The San Diego Region municipal stormwater permit requires that each source identification effort identify one of the following five endpoints as the source of the discharge:

- Endpoint A – Discharge is natural in origin and conveyance; OR
- Endpoint B – Discharge is an illegal discharge or illicit connection; OR
- Endpoint C – Discharge is an exempted category of non-stormwater discharge; OR
- Endpoint D – Discharge is a non-stormwater discharge in violation of a permit; OR
- Endpoint E – Discharge is unidentified.

General guidance regarding the potential characteristics and constituents of concern typically associated with each endpoint is provided below. These tables allow the inspector to take several constituents/characteristics of the discharge into consideration in order to determine the source of the discharge.

Natural Source (Endpoint A)

Natural sources infiltrating or entering the storm drain may include:

- Rising groundwater
- Uncontaminated ground water infiltration
- Springs
- Flows from riparian habitats and wetlands

The constituents and characteristics of these types of discharges are summarized below.

Example	Potential Characteristics	Potential Constituents
Groundwater or spring seepage into the stormdrain system.	• Dissolved oxygen tend to be low • Color tends to be clear • Turbidity tends to be low • Hardness tends to be high • Total dissolved solids (TDS) tends to be high • Bubbling into channel • Moist sides/bottom of channel • High water table in region	• Iron • Manganese • Selenium • Sodium • Calcium • Nutrients

If any of these categories have been identified as the significant flow source, end the investigation with **Endpoint A.**

Illegal Discharge / Illicit Connection (Endpoint B)

Using a combination of observations (discoloration and odor) and immediate in-field results (pH, dissolved oxygen, turbidity, MBAS), the Inspector may be able to determine if the flow is the result of an illicit discharge or connection.

The constituents and characteristics of these types of discharges are summarized below.

Source Category	Potential Characteristics	Potential Activities
Illegal Discharge or Connection	• Foam/suds (MBAS) • Colored discharge • Low Dissolved Oxygen • Oil Sheen • Chlorine Odor • High pH • Low pH • Odor • Nitrogen • Phosphorus • Metals • Trash/Materials • High Turbidity • Total Coliform, Fecal Coliform, Enterococci	• Non-residential Car Washing • Steam Cleaning • Engine Cleaning • Matt Washing • Pool Discharge • Concrete/Plaster • Acid Washing • Sewer overflows • Sediment • Dumpster Leakage • Greywater Discharge

If the Inspector identifies an illegal discharge / illicit connection as the cause of the exceedence(s), end the investigation with **Endpoint B.**

Exempted Non-Stormwater (SW) Category (Endpoint C)

Exempted Non-Stormwater categories may exhibit NAL exceedances. The categories of discharges that are included are summarized below. Given the diverse nature of the categories, the potential characteristics of the discharges are not summarized.

Source Category	Example	Potential Discharges

Exempted Category of Non-Stormwater Discharge	SDR – Provision B.2.	• Diverted stream flows
		  o Turbidity, DO, total nitrogen, total phosphorous
		• Rising ground waters (Endpoint A)
		• Uncontaminated groundwater infiltration 40 CFR 35.2005 (20) to MS4s (Endpoint A)
		• Uncontaminated pumped groundwater (see Endpoint A)
		• Foundation drains (see Endpoint A)
		• Springs (Endpoint A)
		• Water from crawl space pumps
		  o Turbidity, DO
		• Footing drains (see Endpoint A)
		• Air conditioning condensation.
		• Flows from riparian habitats and wetlands (Endpoint A)
		• Water line flushing
		  o Turbidity, DO, chlorine
		• Discharges from potable water source not subject to NPDES Permit No. CAG679001, other than water main breaks
		• Individual residential car washing
		  o MBAS, DO, pH, turbidity
		• Dechlorinated swimming pool discharges
		• Emergency fire fighting flows

If the Inspector identifies an exempted non-stormwater category as the cause of the exceedence(s), end the investigation with **Endpoint C.**

Separate NPDES Permitted Discharge (Endpoint D)

Separate NPDES permitted discharges that may result in a non-stormwater discharge in violation of that permit include the following:

Source Category	Potential Permits and Issues

Non-Stormwater Discharge in Violation of a Permit[1]	• Construction General Permit
	  o Fecal coliform, Enterococci, turbidity, pH, DO, MBAS
	• Industrial General Permit
	  o Turbidity, pH, DO, MBAS, metals
	• Deminimus Permit
	  o Fecal coliform, Enterococci, turbidity, pH, DO, total nitrogen, total phosphorus
	• Groundwater Permit
	  o DO, total nitrogen, total phosphorus
	• Individual NPDES/WDR Permit
	  o Fecal coliform, Enterococci, turbidity, pH, DO, MBAS, metals
	• Reclaimed/Recycled Water
	  o Chlorine residual

The Inspector should identify if any of these sources are discharging into the storm drain system. If the Inspector identifies a non-stormwater discharge that is coming from a location that is regulated by a separate NDPES/Waste Discharge Requirement (WDR) permit, end the investigation with **Endpoint D.**

Indeterminate Source (Endpoint E)

If the Inspector is unable to identify the source of the NAL exceedence, the Inspector should identify that the discharge is at **Endpoint E** and complete the following:

1. Document the investigation procedures implemented as a part of the source identification study;
2. Identify the constituent as a high priority pollutant of concern in the watershed/sub-watershed;
3. Perform additional focused sampling, as needed;
4. Submit a prioritization plan and timeline that identifies the timeframe and planned actions to investigate and report the findings on all of the exceedances; and
5. Report the updated status in the Annual Report and any modifications to the prioritization plan and/or timeline due to the new prioritizations.

It should also be noted that the investigation and/or prioritization may be conducted regionally (see Attachment E).

[1] It should be noted that, although the Regional Board may administer and enforce the conditions of a permit such as those listed, the Regional Board generally expects that the local jurisdiction will enforce the local codes and ordinances within their jurisdiction. This is often referred to as "dual regulation".

Potential Constituents/Issues of Concern for each Source Category

The potential constituents of concern /characteristics of each of the endpoints is provided below. The bold entries are the constituents that have numeric action levels, the other constituents are provided as general guidance to assist the Inspector with the selection of an endpoint.

Characteristics of Discharge[2]	Natural in Origin and Conveyance (Endpoint A)	Illegal Discharge or Connection (Endpoint B)	Exempted Category of Non-Stormwater Discharge (Endpoint C)	Non-Stormwater Discharge in Violation of a Permit[3] (Endpoint D)
Observable Attributes				
Color	X	X	X	X
Odor		X		X
Oil Sheen		X	X	X
Water Quality				
Ammonia		X		X
Bacteria Indicators (Total Coliform, **Fecal Coliform, Enterococci)**	X	X	X	X
Calcium	X		X	
Chlorine		X	X	X
Dissolved Oxygen	X	X	X	X
High Hardness	X		X	
Iron	X		X	
Manganese	X		X	
Metals		X		X
MBAS (Surfactants)		X	X	X
Nitrogen/ Nitrate	X	X		X
High pH		X	X	X
Low pH		X		X
Phosphorus	X	X		X
Selenium	X		X	
Sodium	X		X	
High Total Dissolved Solids	X	X	X	X
Trash		X		X
Turbidity		X	X	X

Note: constituents of concern are identified here only for guidance purposes. Some of these parameters may not be monitored for, and the matrix serves only to illustrate the potential composition of varying sources.

[2] The potential constituents of concern are included here for guidance purposes only and to assist the Inspectors in identifying a potential endpoint. It is recognized that these constituents may not be monitored on a routine basis. The matrix serves only to illustrate the potential composition of the various endpoints.

[3] It should be noted that, although the Regional Board may administer and enforce the conditions of a permit such as those listed, the Regional Board generally expects that the local jurisdiction will enforce the local codes and ordinances within their jurisdiction. This is often referred to as "dual regulation".

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Attachment D

San Diego Region Reporting Requirements

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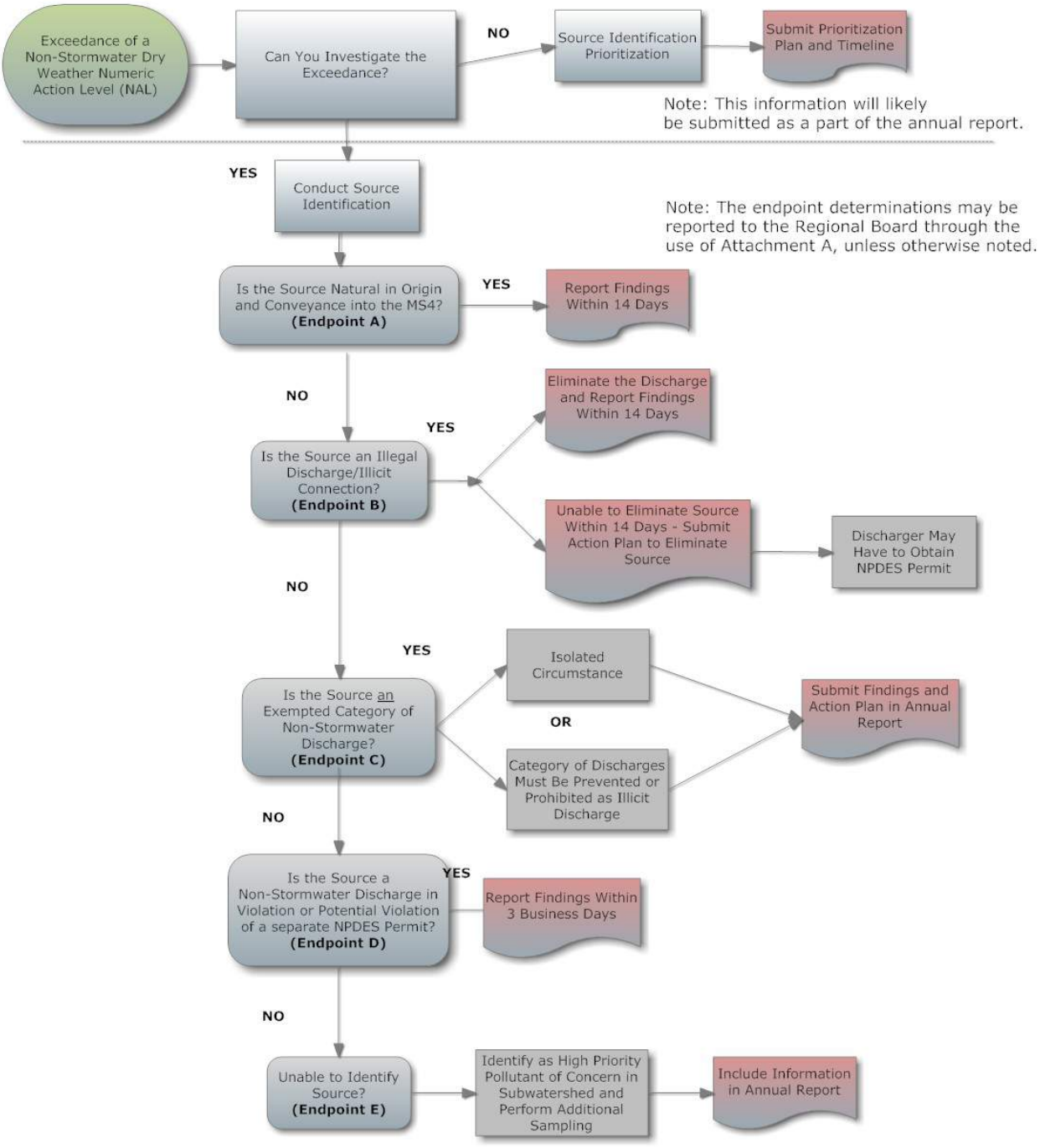
San Diego Region Reporting Requirements

Once a source identification is triggered by an exceedance of an NAL, there are specific endpoint determinations and reports that need to be submitted to the San Diego Regional Board. The reporting requirements are outlined below.



NOTE: The Authorized Inspector should work closely with the Stormwater Program Manager to determine a) what data is necessary for the assessment; b) if additional data is necessary; c) the source of the discharge; and d) the reporting requirements.

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Attachment E

Regional Prioritizations and Assessments

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Regional Prioritizations and Assessments

The San Diego Region municipal stormwater permit requires the Permittees to investigate exceedances of the dry weather NALs. However, the Permit also recognizes that there may be a need to prioritize the investigations. The Permittees have identified two considerations that will be utilized to assist in prioritizing the follow up investigations once an NAL has been exceeded - receiving water impacts and the potential for regional sources. These considerations will be taken into account for the following constituents:

- pH;
- Dissolved Oxygen;
- Fecal Indicator Bacteria;
- Nutrients (Total Nitrogen and Total Phosphorous); and
- Metals.

These considerations are accounted for within the source ID procedures and are summarized below.

Receiving Water Impacts

The source identification guidance and procedures (Section 2) identifies the constituents that have NALs, provides background information for each, identifies the probability of an NAL exceedance based on historical data, and provides some initial criteria to assist in identifying a potential source (or endpoint). Three of the constituents that have NALs have a 95% chance (or greater) that the outfall concentration will exceed the NAL. The constituents that will be assessed to determine if there is a resulting impact to the receiving waters if the outfall concentration exceeds the NAL include:

- pH;
- Dissolved Oxygen;
- Fecal Indicator Bacteria; and
- Nutrients (Total Nitrogen and Total Phosphorous)

Given the potential number of exceedances and the need to prioritize the responses so that the most critical exceedances are addressed first, the Permittees recognize that some of the outfall discharges may not impact the receiving water and/or the beneficial uses and, therefore, may represent a low threat. As such, the guidance procedures incorporated a series of steps to assist in determining if the outfall discharge was causing or contributing to an exceedance within the receiving water. The two scenarios and responses are:

- Outfall Exceeds NAL: YES Receiving Water Exceed NAL: YES
  In this case the exceedances are considered high priority and the investigation is initiated.

- Outfall Exceeds NAL: YES Receiving Water Exceed NAL: NO
  In this case the exceedance is considered a lower priority. The investigation is prioritized, initiated, and/or may be included in a longer term regional investigation.

Regional Sources

In some cases, the Permittees may want to collaborate with each in order to form a regional approach and/or to conduct a special study in order to address the NAL exceedances. This type of approach is appropriate in situations where municipalities share a common receiving water and/or if there is a known or suspected regional source for the constituent of concern such as groundwater or air deposition that is resulting in multiple NAL exceedances.

The constituents that may warrant regional investigations and/or special studies include the following:

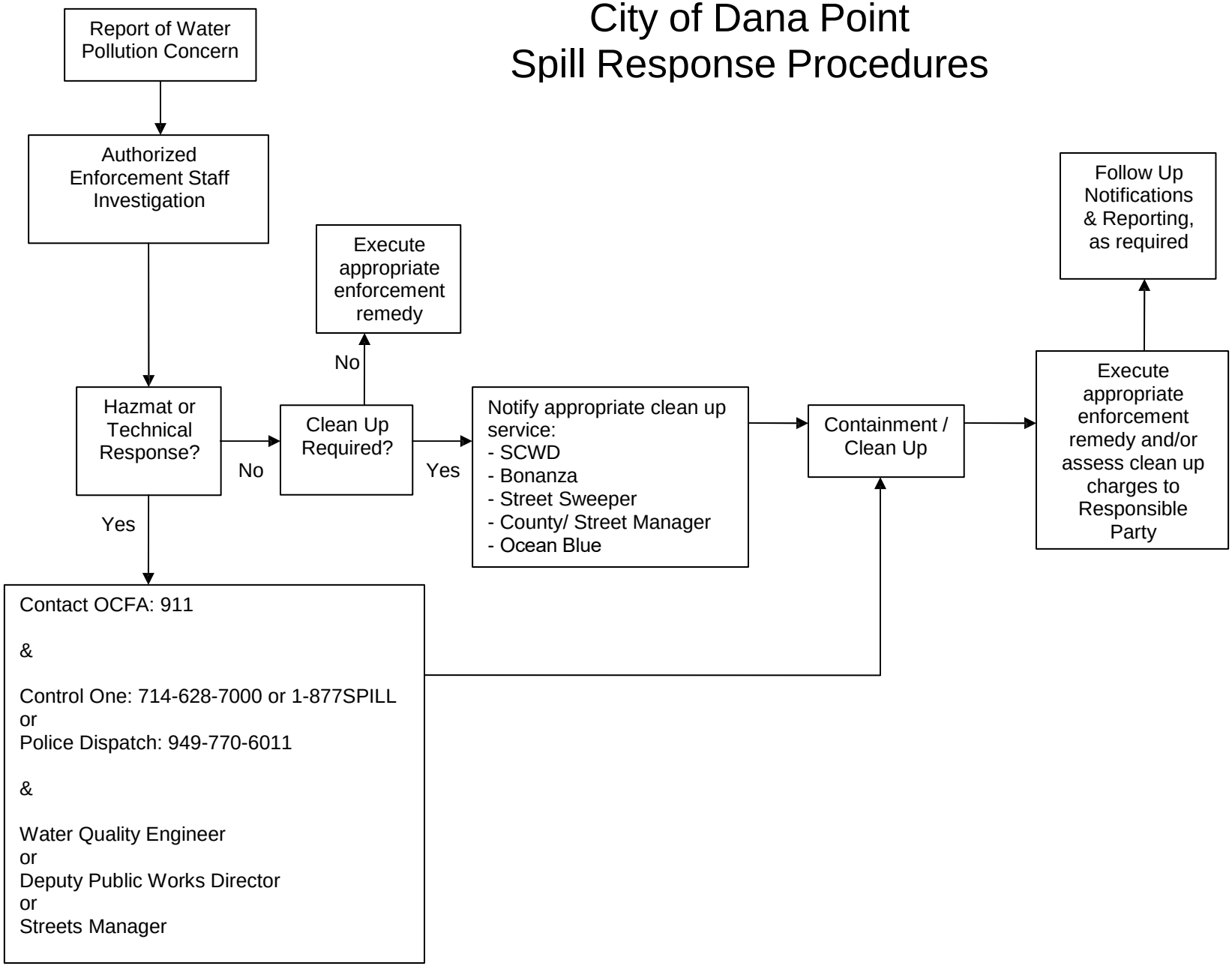
Constituent	Potential Regional Source(s)
Fecal Indicator Bacteria	Ubiquitous sources
Nutrients (Total Nitrogen & Total Phosphorous)	Geological deposits, legacy from past agricultural landuse, reclaimed water irrigation, aerial deposition
Metals	Marine sedimentary formations (Monterey and Capistrano formations); fossil fuel combustion

In fact, the Permittees are currently conducting a regional investigation for metals and have found a strong positive linear relationships between metals associated with runoff and seepage from the Monterey and Capistrano marine sedimentary formations. Both formations are known to be enriched in trace metals and are common across southern Orange County.

Reporting

If an NAL exceedance is identified as a lower priority based on the paired outfall and receiving water data and/or is being addressed by a regional approach and/or special study, a prioritization plan will be developed along with a timeline and submitted as a part of the annual report.

Exhibit 10.3:
City of Dana Point
Spill Response Procedures



City of Dana Point Local Implementation Plan (LIP)

Exhibit 10.4

EMERGENCY CONTACT LIST

January 2019

Situation	Notify
Emergency	Local Fire Department: 911 Orange County Pollution Hotline: 1-877-89-SPILL State Office of Emergency Services: 1-800-852-7550 Orange County Control One: 1-714-628-7000 National Response Center: 1-800-424-8802
NPDES Notification/Reporting Regional Water Quality Control Boards	San Diego Regional Water Quality Control Board 2375 Northside Drive, Suite 100 San Diego, California 92108 Xueyuan (Helen) Yu: Helen.yu@waterboards.ca.gov, 619-521-5893 Laurie Walsh: Laurie.Walsh@waterboards.ca.gov, 619-521-3373 Tony Felix: Tony.Felix@waterboards.ca.gov, 619-521-5921
County Storm drain/Flood channels	OC Public Works: 1-877-89-SPILL, 24-hour: 714-628-7008- Emergency Operations - Flood
Creeks & Streams	California Department of Fish & Game: 1-888-334-CalTIP (888-334-2258) Report Oil Spills 1-800-852-7550
Bay, harbor, ocean	United States Coast Guard: (562) 980-4444
Hazardous waste/Private Property Impacts	County of Orange Health Care Agency: (714) 667-3700 714-433-6000
Proposition 65 Notifications	County of Orange Health Care Agency: (714) 667-3765
Air Impacts	South Coast Air Quality Management District Complaint: 1-800-CUT-SMOG
Gas/Electric	SDG&E: 1-800-411-7343 SoCal Gas Company: 1-800-427-2200
Soil Impacts	To contact the DTSC Emergency Response Duty Officer: Monday - Friday, 8 am – 5 pm, call DTSC at (800) 260-3972 or (916) 255-6504, After Hours, weekends, or on holidays, call the Cal EMA Warning Control Center at (800) 852-7550 and ask to speak to the DTSC Emergency Response Duty Officer Department of Toxic Substances Control: (714) 484-5396
Sewage Spills	SCWD: 949-499-4555 MNWD: 949-831-2500 SJC: 949-842-2624
Criminal Offense	Orange County District Attorney: (714) 347-8716

Exhibit 10.5
Clean Up & Water Quality Sampling Resources

CLEAN UP RESOURCES / SERVICES

South Coast Water District (SCWD)
949-499-4555 – 24-hour

Ocean Blue
14000 E. Valley Blvd.
City of Industry, CA 91746
24-hour: 1-800-990-9930
City contact: Chris: 1-562-235-7472 (mobile)

Assistant from Orange County through Implementation Agreement

Control One: 1-174-628-7000
Spill Hotline: 1-877-89SPILL

Ocean Blue Environmental
3110 Hancock Street
San Diego, CA 92110
Phone: 1-619-294-6682
Fax: 1-619-294-6743

WATER QUALITY SAMPLING

Enthalpy Analytical (formerly Associated labs)
Project Manager: Diane Galvan
diane.galvan@enthalpy.com
direct: 714-771-9928
cell: 714-812-8119

Cam Pham, Lab Director
direct: 1-714-771-9914
cell: 714-264-8209
cam.pham@enthalpy.com

Enthalpy Analytical
931 W Barkley Avenue
Orange, CA 92868

Appendix M

1 HIGH PRIORITY WATER QUALITY CONDITION MONITORING PROGRAMS

1.1 Pathogen Health Risk

1.1.1 Overview

Objectives	Verify the effectiveness of dry and wet weather human waste abatement activities.
	Evaluate the effectiveness of structural best management practice (BMP) strategies.
Sampling Locations	To be determined pursuant to preparation of a *Human Waste Investigation and Abatement Work Plan* or installation of select structural BMP strategies
Frequency of Events	To be determined pursuant to preparation of a *Human Waste Investigation and Abatement Work Plan* or installation of select structural BMP strategies
Monitoring Methods Reference	California Microbial Source Identification Manual, as deemed appropriate. (www.waterboards.ca.gov/water_issues/programs/beaches/cbi_projects/docs/sipp_manual.pdf)
	Standardized EPA methods for human fecal pollution characterization (in development), as deemed appropriate.
	Urban Stormwater BMP Performance Monitoring Manual (www.bmpdatabase.org/monitoring-guidance.html)

1.1.2 Sample Collection

- Water Grab Samples

1.1.3 Sample analysis

Water Grab	To be determined pursuant to preparation of a *Human Waste Investigation and Abatement Work Plan* or installation of

Samples	select structural BMP strategies

1.2 Channel Erosion and Associated Geomorphic Impacts

1.2.1 Overview

Objectives	Evaluate the stability of restored stream reaches over time.
	Determine whether the biological integrity of downstream reaches improves over time.

Sampling Locations	**Station ID**	**Description**
	Geomorphic Assessment	To be determined upon stream restoration site selection
	High-resolution LiDAR analysis	South Orange County Watershed Management Area
	Downstream Targeted Bioassessement and CRAM	To be determined upon stream restoration site selection

Frequency of Events	Geomorphic characterization	Annually, *post-restoration*
	High-resolution LiDAR analysis	Every 5-years
	Targeted Bioassessment and CRAM	*Pre-restoration*, once annually in the late spring after the rainy season for a period of three years. *Post-restoration*, once annually in the late spring after the rainy season for a period of five years.

Monitoring Methods Reference	High-resolution LiDAR analysis	2016 Orange County Scope of Work for High Density Stream Corridor LiDAR–Orange County, California
	Targeted Bioassessment and CRAM	Surface Water Ambient Monitoring Program (SWAMP) Bioassessment Standard Operating Procedures (SOP), and amendments
		SWAMP Stream Habitat Characterization Form – Full Version
		SWAMP Standard Operating Procedures for Collecting Algae Samples
		CRAM User's Manual and Field Books

1.2.2 Sample Collection

- Geomorphic characterization;
- Targeted bioassessment and CRAM

1.2.3 Sample Analysis

Geomorphic Characterization	Field Measurements	Longitudinal profile
		Channel cross-section
		Bed material particle size distribution
		Size and extent of channel features (pools, riffles, and runs)
		Photographs
Targeted Bioassessment and CRAM	SWAMP Bioassessment Parameters	BMI Collection
		Multi-habitat Periphyton Collection
		Physical Habitat Assessment
	CRAM Attributes	Buffer and landscape context
		Hydrology
		Physical structure
		Biotic Structure

1.3 Unnatural Water Balance and Flow Regime

1.3.1 Overview

Objectives	Collect data intended to fill data gaps, support prioritization of strategies, and support adaptive management.	
	Verify effectiveness of programmatic and structural dry weather discharge control strategies.	
Sampling Locations	Expanded Outfall Observations	All major (≥ 36 inches in diameter) with persistent flow. Minor outfalls (≤ 36 inches in diameter) deemed a priority pursuant to the findings of other monitoring programs and through implementation of individual JRMPs.
	Flow Monitoring at Priority Outfalls	All "priority" outfalls. Priority outfalls are those Major and Minor outfalls where *expanded outfall observations* identified consistent flow with connectivity to the receiving water, and average flow rates are estimated to be greater than approximately 0.02 cfs or 10 gpm.
	High-resolution Multispectral Aerial Imagery	South Orange County Watershed Management Area
Frequency of Events	Expanded Outfall Observations	As needed to perform observations at applicable Major (≥ 36 inches in diameter) and Minor outfalls (≤ 36 inches in diameter) by 2021.
	Flow Monitoring at Priority Outfalls	As needed to perform monitoring at all *priority* Major and Minor outfalls by 2021.
	High-resolution Multispectral Aerial Imagery	Every 5-years
Monitoring Methods Reference	South Orange County Monitoring and Assessment Program Quality Assurance Program Plan (In progress)	
	2016 Orange County Scope of Work for High Density Stream Corridor LiDAR– Orange County, California	

1.3.2 Sample Collection

- Expanded Outfall Observations
- Flow Monitoring at Priority Outfalls

1.3.3 Sample Analysis

Expanded Outfall Observations	1) Station identification and location
	2) Presence of flow, or pooled or ponded water
	3) If flow is present: - Flow estimation (i.e. width of water surface, approximate depth of water, approximate flow velocity, flow rate) - Flow characteristics (i.e. presence of floatables, surface scum, sheens, odor, color) - Flow source(s) suspected or identified from non-storm water source investigation - Flow source(s) eliminated during non-storm water source identification
	4) If pooled or ponded water is present: - Characteristics of pooled or ponded water (i.e. presence of floatables, surface scum, sheens, odor, color) - Known or suspected source(s) of pooled or ponded water
	5) Station description (i.e. deposits or stains, vegetation condition, structural condition, observable biology)
	6) Presence and assessment of trash in and around station
	7) Evidence or signs of illicit connections or illegal dumping
	8) Flow connectivity to receiving waters: - not connected - partially connected - completely connected
	9) If there is flow connectivity to receiving waters: - Upstream receiving water condition: dry, ponded, flowing - Downstream receiving water condition: dry, ponded, flowing
	10) Contribution to receiving water flow - Small (<10%) - Minor (10% to 50%) - Major (>50%)

Flow Monitoring at Priority Outfalls	Flow is to be recorded at 5-minute intervals for a 2 week period

2 RECEIVING WATER MONITORING (PERMIT PROVISION D.1)

2.1 Dry Weather Receiving Water Monitoring (Permit Prov. D.1.c)

2.1.1 Overview

Objectives	Determine whether the conditions in the receiving water during dry weather are protective or likely protective of beneficial uses.
	Determine the extent and magnitude of the current or potential dry weather receiving water problems.
	Evaluate whether conditions in the receiving water during dry weather are improving or declining.
	Assess the effectiveness of the South Orange County Hydromodification Management Plan (HMP) with controlling Priority Development Project runoff volume and duration, where such increased rates and durations are likely to cause increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive forces.
	Assess on an annual basis the Rancho Mission Viejo stream and habitat monitoring data and annually assess whether an update to the Technical Guidance Document is required based on the findings of recommendations of RMV monitoring data collected and submitted per EIR 589 Mitigation Measure 4.5-8. The intended objective is also to provide annual reporting associated with Provision B.3.c.

Sampling Locations	**Type**	**Station ID**	**Watershed**	**Description**	**Latitude**	**Longitude**
	Long-term Mass Emission Stations (LTME)	ACJ01	Aliso Creek	Aliso Creek in Aliso/Wood Canyon Park	33.54348	-117.73243
		LCWI02	Laguna Coastal Streams	Laguna Canyon Channel at Woodland	33.5523	-117.77685
		PDCM01	San Clemente Coastal Streams	Prima Deshecha at Calle Grande Vista	33.4453	-117.64434
		SDCM02	San Clemente Coastal Streams	Segunda Deshecha at El Camino Real	33.43338	-117.63155
		SJNL01	San Juan Creek	San Juan Creek at La Novia	33.50209	-117.64819
		TCOL02	San Juan Creek	Trabuco Creek at Del Obispo	33.49749	-117.66568
		TBD	Dana Point Coastal Streams	Salt Creek at TBD	TBD	TBD
	Proposed Temporary	TBD	Aliso Creek	English Canyon	TBD	TBD
		TBD	Laguna Coastal	Moro Canyon	TBD	TBD

Watershed Assessment Stations (TWAS)[2]		Streams			
	TBD	San Juan Creek	Oso Creek (at Mission Viejo Golf Course)	TBD	TBD
	TBD	San Juan Creek	Oso Creek (lower)	TBD	TBD
HMP Effectiveness[1]	TBD	San Juan Creek Tributaries	Three stations will be established in Chiquita Canyon downstream of land development constructed with hydromodification flow control facilities.	TBD	TBD
	Ranch Mission Viejo Stream Monitoring Program and Habitat Conservation Plan Monitoring Program[3]				

Notes:
1 Three stations will be established and monitored for a period of 3 years beginning in 2019 (geoform assessment, cross section survey, and CRAM in conjunction with bioassessment) for the purpose of assessing the effectiveness of the South Orange County Hydromodification Management Plan. This monitoring element will be incorporated into the South Orange County Monitoring and Assessment Program Quality Assurance Program Plan within 60 days of Plan acceptance.
2 Temporary Watershed Assessment Stations will be adjusted as necessary according to regular assessment of data.
3 The Copermittees will assess on an annual basis the Rancho Mission Viejo stream and habitat monitoring data submitted to the County under EIR 589 Mitigation Measure 4.5-8 and annually assess whether an update to the Technical Guidance Document is required based on the findings of recommendations of RMV monitoring data. Additional assessment and reporting details are provided in Section 4 of the WQIP and Section 2.1.3 of this appendix (Sample Analysis).

Frequency of Events	**Event Type**	**Frequency**	**Timing**
	LTME Field Observations, Measurements, and Sampling	Three During Permit Term	Event 1-During dry Season (May 1-Sep. 30)
			Event 2-During wet season (Oct. 1-Apr. 30)
			Event 3-At-large dry weather event
	TWAS Field Observations, Measurements, and Sampling	Three During Permit Term	Event 1-During dry Season (May 1-Sep. 30)
			Event 2-During wet season (Oct. 1-Apr. 30)
			Event 3-At-large dry weather event
	LTME Bioassessment	Once During Permit Term	Spring
	LTME Hydromodification	Once During Permit Term	Dry season
	HMP Effectiveness (geoform assessment, cross	Annually for three years. Monitoring in 2019, 2020,	Monitoring in Spring to Summer; data and findings submitted with next WQIP

	section surveys, CRAM and Bioassessment)	and 2021 with annual submittals in January 2020, 2021, and 2022.	Annual Report.
	RMV Stream and Habitat Monitoring	Per EIR 589 Mitigation Measure 4.5-8	Spring

Monitoring Methods Reference	**South Orange County Monitoring and Assessment Program Quality Assurance Program Plan (In progress)**
	Surface Water Ambient Monitoring Program (SWAMP) Bioassessment Standard Operating Procedures (SOP), and amendments
	SWAMP Stream Habitat Characterization Form – Full Version
	SWAMP Standard Operating Procedures for Collecting Algae Samples
	Southern Subregion Habitat Conservation Plan
	Rancho Mission Viejo Ranch Development Plan, San Juan Creek Watershed Stream Monitoring Program
	Rancho Mission Viejo Engineering Investigation Study, San Juan Creek Watershed Stream Monitoring, Additional Stream Monitoring Cross Section Locations & Engineering Assessment
	CRAM User's Manual and Field Books

2.1.2 Sample Collection

- LTME & TWAS Field Observations
- LTME & TWAS Time/Flow-Weighted Composites
- LTME & TWAS Grab Samples
- LTME Bioassessment Monitoring
- Hydromodification Monitoring
    - South Orange County HMP Effectiveness Monitoring
    - Rancho Mission Viejo Stream Mentoring Program and Habitat Conservation Plan (Data assessed and reported by the Permittees)
    - Hydromodification Monitoring at LTME Stations

2.1.3 Sample Analysis

LTME & TWAS Dry	1) Station identification and location

Weather Receiving Water Monitoring - Field Observations	2)	Presence of flow, or pooled or ponded water
	3)	If flow is present: - Flow estimation (i.e. width of water surface, approximate depth of water, approximate flow velocity, flow rate) - Flow characteristics (i.e. presence of floatables, surface scum, sheens, odor, color)
	4)	If pooled or ponded water is present: - Characteristics of pooled or ponded water (i.e. presence of floatables, surface scum, sheens, odor, color)
	5)	Station description (i.e. deposits or stains, vegetation condition, structural condition, observable biology)
	6)	Presence and assessment of trash in and around station

	Sample Type	**Parameter Group**	**Parameter**
LTME & TWAS Dry Weather Receiving Water Monitoring – Grab and Composite Sampling*	Grab Samples	Field Measurements	pH[1, 2]
			Temperature[2]
			Specific Conductivity[2]
			Dissolved Oxygen[1,2]
			Turbidity[1,2, 3]
		Indicator Bacteria[1,2,3]	Total Coliform
			Enterococcus
			Fecal Coliform
	Time-weighted Composites	Conventional	Chloride[3]
			Total Dissolved Solids[2,3]
			Total Suspended Solids[2]
			Total Hardness[2]
			Total Organic Carbon[2]
			Dissolved Organic Carbon[2]
			Sulfate[2,3]
			MBAS[1,2]
		Metals (Total and Dissolved[7])	Arsenic[2]
			Cadmium[1,2,3]
			Chromium[2]

	Chromium III[1]
	Chromium VI[1]
	Copper[1,2,3]
	Iron[1,2]
	Lead[1,2]
	Mercury[2]
	Manganese[1]
	Nickel[1,2,3]
	Selenium[2,3]
	Silver[1]
	Thallium[2]
	Zinc[1,2,3]
Nutrients	Total Phosphorus[1,2,3]
	Orthophosphate[2]
	Nitrate[2]
	Nitrite[2]
	Total Nitrogen as N[1,3]
	Total Kjeldahl Nitrogen[2]
	Ammonia[2]
Chronic Toxicity[2, 3, 4]	*Pimephales promelas* (Fathead Minnow) – Larval Survival, Growth
	Ceriodaphnia dubia[8] (Daphnid) – Survivial, Reproduction
	Selenastrum capricornutum (Green Algae) - Growth
Pesticides	Organophosphates[2,3,5]
	Pyrethroids[2,5]
	Organochlorines[3,6]

Notes:
* Time/flow-weighted composite samples will be collected and analyzed for all parameters except for *field measurements* and *indicator bacteria*.
1 Permit Provision C.1 parameter
2 Permit Provision D.1.c parameter.
3 303(d) Listed constituent.
4 Aliquots are salinity-adjusted by the laboratory to the proper range for the respective testing organism. Copermittees will use *Strongylocentrotus purpuratus* (Purple Sea Urchin) if salinity of the receiving water exceeds 1 part per thousand. Alternatively, the Copermittees will use a separate species upon approval by the SDRWQCB Executive Officer.

5 All organophosphate (including Diazinon) and pyrethroid pesticides should be analyzed.
6 Dieldrin and DDE are the only organochlorine pesticides required.
7 An aliquot of each sample collected for total recoverable metals analyses are filtered with a 0.45 micron groundwater filter. The filtered and the unfiltered fractions are then preserved with ultra-pure grade nitric acid prior to submittal for analysis.
8 Copermittees will coordinate with the San Diego Water Board regarding substitution of *Ceriodaphnia dubia* for *Hyallela azteca* in receiving waters where historical total dissolved solids concentrations were high. *Ceriodaphnia dubia* tests aren't as reproducible as proved by a SCCWRP interlaboratory calibration study, and *Hyallela azteca* is less sensitive to TDS.

Dry Weather Receiving Water Monitoring - Bioassessment Monitoring at LTME Stations	SWAMP Parameters	BMI Collection
		Multi-habitat Periphyton Collection
		Physical Habitat Assessment

Dry Weather Receiving Water Monitoring - Hydromodification Monitoring at LTME Stations	1)	Channel conditions, including: - Channel dimensions, - Hydrologic and geomorphic conditions, and - Presence and condition of vegetation and habitat
	2)	Location of discharge points
	3)	Habitat integrity
	4)	Photo documentation of existing erosion and habitat impacts, with location (i.e. latitude and longitude coordinates) where photos were taken
	5)	Measurement or estimate of dimensions of any existing channel bed or bank eroded areas, including length, width, and depth of any incisions
	6)	Known or suspected cause(s) of existing downstream erosion or habitat impact, including flow, soil, slope, and vegetation conditions, as well as upstream land uses and contributing new and existing development

Dry Weather Receiving Water Monitoring – SOC HMP Effectiveness Monitoring	1)	HMP effectiveness monitoring at three stations within Chiquita Canyon downstream of areas developed with flow duration control facilities. Monitoring will include geoform assessment, cross sectional survey, and CRAM in conjunction with bioassessment. Stations and methods will be defined as part of an HMP-Specific Quality Assurance Program Plan within 60 days of Plan acceptance.
	2)	Stream and Habitat Monitoring conducted by Rancho Mission Viejo. The Copermittees will annually submit with the January 31 Annual Plan Report the RMV project monitoring data and

	reports required by the mitigation and monitoring program (EIR 589 Mitigation Measure 4.5-8) for creek systems and tributaries impacted by the RMV project for Phases 2 through 5. The data shall be submitted with a technical summary prepared by the Copermittees that includes a map of Phases 2 through 5. At the time of the January 31 Annual Plan Report, the map shall identify the outfall locations, percent impervious area draining to the outfalls. The annual technical summary shall include any creek restoration recommendations due to hydromodification impacts from development. Based on the hydromodification monitoring data and recommendations submitted by the RMV project to mitigate hydromodification impacts to stream systems, the Copermittees will (1) Submit annually a summary report describing any updates to the low flow design criteria as part of the January 31 Annual Plan Report; and (2) Update the Technical Guidance Document (TGD) with revised low flow design criteria, if applicable.

2.2 Wet Weather Receiving Water Monitoring (Permit Prov. D.1.d)

2.2.1 Overview

Objectives	Determine whether the conditions in the receiving water during wet weather are protective or likely protective of beneficial uses.
	Determine the extent and magnitude of the current or potential wet weather receiving water problems.
	Evaluate whether conditions in the receiving water during wet weather are improving or declining.

Sampling Locations	**Type**	**Station ID**	**Watershed**	**Description**	**Latitude**	**Longitude**
	Long-term Mass Emission Stations (LTME)	ACJ01	Aliso Creek	Aliso Creek in Aliso/Wood Canyon Park	33.54348	-117.73243
		LCWI02	Laguna Coastal Streams	Laguna Canyon Channel at Woodland	33.5523	-117.77685
		PDCM01	San Clemente Coastal Streams	Prima Deshecha at Calle Grande Vista	33.4453	-117.64434
		SDCM02	San Clemente Coastal Streams	Segunda Deshecha at El Camino Real	33.43338	-117.63155
		SJNL01	San Juan Creek	San Juan Creek at La Novia	33.50209	-117.64819
		TCOL02	San Juan Creek	Trabuco Creek at Del Obispo	33.49749	-117.66568
		TBD	Dana Point Coastal Streams	Salt Creek at TBD	TBD	TBD
	Proposed TWAS[1]	TBD	Aliso Creek	English Canyon	TBD	TBD
		TBD	Laguna Coastal Streams	Moro Canyon	TBD	TBD
		TBD	San Juan Creek	Oso Creek (at Mission Viejo Golf Course)	TBD	TBD
		TBD	San Juan Creek	Oso Creek (lower)	TBD	TBD

Notes: 1 Temporary Watershed Assessment Stations will be adjusted as necessary according to regular assessment of data.

Frequency of Events	**Event Type**	**Frequency**	**Timing**
	LTME Field Observations, Measurements, and Sampling	Three During Permit Term	Event 1-First wet weather event of the season (Oct. 1-Apr. 30)
			Event 2- Event occurring after Feb. 1
			Event 3- At-large wet weather event
	TWAS Field Observations, Measurements, and Sampling	Three During Permit Term	Event 1-First wet weather event of the season (Oct. 1-Apr. 30)
			Event 2- Event occurring after Feb. 1
			Event 3- At-large wet weather event

Monitoring Methods Reference	South Orange County Monitoring and Assessment Program Quality Assurance Program Plan (In progress)

2.2.2 Sample Collection

- LTME & TWAS Field Observations
- LTME & TWAS Time-/Flow-Weighted Composites
- LTME & TWAS Grab Samples

2.2.3 Sample Analysis

LTME & TWAS Wet Weather Receiving Water Monitoring - Field Observations	1) Station identification and location: - Location; - Date of storm event; - Duration of storm event; - Rainfall estimate, and - Antecedent dry period.
	2) Flow Rate and Volume (measured or estimated)
	3) Station description (i.e. deposits or stains, vegetation condition, structural condition, observable biology)
	4) Presence and assessment of trash

LTME & TWAS Wet Weather Receiving Water Monitoring – Parameters*	**Sample Type**	**Parameter Group**	**Parameter**
	Grab Sample	Field Measurements	pH[2]
			Temperature[2]
			Specific Conductivity[2]
			Dissolved Oxygen[1,2]
			Turbidity[1,2]
		Indicator Bacteria[2,3]	Total Coliform
			Enterococcus
			Fecal Coliform
	Time-/Flow-Weighted Composite	Conventional	Chloride[3]
			Total Dissolved Solids[2,3]
			Total Suspended Solids[2]
			Total Hardness[2]
			Total Organic Carbon[2]
			Dissolved Organic Carbon[2]
			Sulfate[2,3]
			MBAS[2]
		Metals (Total and Dissolved[7])	Arsenic[2]
			Cadmium[1,2,3]
			Chromium[2]
			Copper[1,2,3]
			Iron[2]
			Lead[1,2]
			Mercury[2]
			Nickel[1,2,3]
			Selenium[2,3]
			Thallium[2]
			Zinc[1,2,3]
		Nutrients	Total Phosphorus[1,2,3]
			Orthophosphate[2]
			Nitrate[2]
			Nitrite[2]
			Total Nitrogen as N[1,3]

	Total Kjeldahl Nitrogen[2]
	Ammonia[2]
Pesticides	Organophosphates[2,3,5]
	Pyrethroids[2,5]
	Organochlorines[3,6]
Chronic Toxicity[2, 3, 4]	*Pimephales promelas* (Fathead Minnow) – Larval Survival, Growth
	Ceriodaphnia dubia (Daphnid) – Survival, Reproduction
	Selenastrum capricornutum (Green Algae) - Growth

Notes:
* Time-/flow-weighted composite samples will be collected and analyzed for all parameters except for *field measurements* and *indicator bacteria*.
1 Permit Provision C.1 parameter
2 Permit Provision D.1.b parameter.
3 303(d) Listed constituent.
4 Aliquots are salinity-adjusted by the laboratory to the proper range for the respective testing organism. Copermittees will use *Strongylocentrotus purpuratus* (Purple Sea Urchin) if salinity of the receiving water exceeds 1 part per thousand. Alternatively, the Copermittees will use a separate species upon approval by the SDRWQCB Executive Officer.
5 All organophosphate (including Diazinon) and pyrethroid pesticides should be analyzed.
6 Dieldrin and DDE are the only organochlorine pesticides required.
7 An aliquot of each sample collected for total recoverable metals analyses are filtered with a 0.45 micron groundwater filter. The filtered and the unfiltered fractions are then preserved with ultra-pure grade nitric acid prior to submittal for analysis.

2.3 Sediment Quality Monitoring (Permit Prov. D.1.e.(2))

2.3.1 Overview

Objectives	Evaluate the condition of sediments in enclosed bays or estuaries with respect to the statewide sediment quality objectives.

Sampling Stations*	**Station ID**	**Latitude**	**Longitude**
	B18-10214/RHMP_SD-0001	33.45744334	-117.691249
	B18-10215/RHMP_SD-1595	33.45946684	-117.699421
	B18-10216/RHMP_SD-2184	33.46044769	-117.694613
	B18-10217/RHMP_SD-0786	33.46069968	-117.700811

Frequency of Events	Two events during the Permit term between June and September. One event will be accomplished via the Regional Harbor Monitoring Program. A second event will be accomplished by the Copermittees according to the work plan and quality assurance program plan developed by the RHMP (i.e., stations, parameters, measurement quality objectives, etc).
Monitoring Methods Reference (Regional Harbor Monitoring Program)	State Water Resources Control Board Water Quality Control Plan for Enclosed Bays and Estuaries - Part 1 Sediment Quality
	Regional Harbor Monitoring Program (RHMP) Final Work Plan
	Regional Harbor Monitoring Program (RHMP) Quality Assurance Program Plan

2.3.2 Sample Collection (Sediment Quality Objectives Multiple Lines of Evidence Approach)

- Sediment and Water Chemistry
- Toxicity
- Benthic Community Condition

2.3.3 Sample Analysis

Sediment Quality Objectives Multiple Lines of Evidence	Sediment Chemistry	Conventional Parameters	TOC
			Sediment Grain Size
			Percent Solids
		Metals	Cadmium
			Copper

Approach			
			Lead
			Mercury
			Zinc
		Organics	Organochlorine Pesticides
			PCB Congeners
			PAHs
	Toxicity	Short-Term Survival	Minimum one of the following: E. estuarius, L. plumulosus, R. abronius
		Sublethal Survival	48-hour M. galloprovincialis development or 28 day N. areaceodentata survival and growth
	Benthic Infauna	Organism Identification and Enumeration	Annelids and annelid fragments
			Arthropods
			Echinoderms (non-ophiuroid)
			Ophiuroids and ophiuroid arms
			Mollusks
			Miscellaneous phyla (e.g., Cnidarians, Nemerteans)
			Debris and plastics

Notes: * - Sampling stations consistent with Bight '18/RHMP '18 and may vary in accordance with future cycles of Bight/RHMP.

2.4 Area of Special Biological Significance (ASBS) Monitoring (Permit Prov. D.1.a))

2.4.1 Overview

Objectives	Assess maintenance and protection of natural water quality conditions within the Heisler Park ASBS.

	Site ID	Description	Parameters	Latitude	Longitude
Sampling Locations	HSL013_SD	Core Discharge	Storm Drain	33.54305	-117.78965
	HSL013_RW	Receiving Water	Ocean	33.542912	-117.788788

Frequency of Events	Outfall and marine receiving water: three times annually during qualifying storm events
	Bioaccumulation: one time every 5 years
	Survey of marine benthic invertebrates: one time every 5 years

Monitoring Methods Reference	The City of Laguna Beach Monitoring Plan for the Heisler Park ASBS Protection and Preservation Project

2.4.2 Sample Collection

- Receiving Water
  - Grab samples collected pre- and post/during storm

- Outfall Monitoring
  - Flow-weighted composite
  - Grab samples by protocol

2.4.3 Sample Analysis

ASBS Grab Samples for Receiving Water Monitoring Locations	Conventional Parameters	TSS
		Oil and Grease
	Nutrients	Ammonia
		Nitrate-N
		Total Ortho-P
	Metals (Total)	Arsenic
		Cadmium

		Chromium
		Copper
		Lead[1,2]
		Mercury[2]
		Nickel[1,2,3]
		Selenium[2,3]
		Silver[1]
		Zinc[1,2,3]
	Organics	Organophosphate Pesticides
		PAHs
		Synthetic Pyrethroids
	Toxicity Testing	*Strongylocentrotus purpuratus* (Sea Urchin), Fertilization
		Mytilus sppp. (Mussel), Embryo Development
		Macrocystis pyrifera (Giant Kelp), Germination and Growth

ASBS Composite Samples for Outfall Monitoring Locations	Conventional Parameters	TSS
	Nutrients	Ammonia
		Nitrate-N
		Total Ortho-P
	Metals (Total)	Arsenic
		Cadmium
		Chromium
		Copper
		Lead[1,2]
		Mercury[2]
		Nickel[1,2,3]
		Selenium[2,3]
		Silver[1]
		Zinc[1,2,3]
	Organics	Organophosphate Pesticides
		PAHs
		Synthetic Pyrethroids

	Toxicity Testing	*Strongylocentrotus purpuratus* (Sea Urchin), Fertilization
ASBS Grab Samples for Outfall Monitoring Locations	Field Parameters	Temperature
		Conductivity
		Salinity
	Conventional Parameters	Oil and Grease

3 MS4 OUTFALL DISCHARGE MONITORING

3.1 Dry Weather MS4 Outfall Discharge Monitoring (Permit Prov. D.2.b.(1))

3.1.1 Overview

Objectives	Field Screening	Identify non-storm water and illicit discharges within jurisdiction per Provision E.2.c.
		Determine which discharges are transient vs. persistent flows.
		Prioritize persistent dry weather MS4 discharges to investigate/eliminate per Provision E.2.d.
	Non-storm Water Persistent Flow MS4 Outfall Discharge Sampling	Determine which persistent non-storm water discharges contain concentrations of pollutants above non-storm water action levels (NALs) (Permit Prov. C.1)
		Determine the relative contribution of MS4 outfalls to priority water quality conditions during dry weather
		Investigate the sources of persistent non-storm water flows

Sampling Locations	**Sampling Type**	**Station ID**	**Jurisdiction**	**Watershed**	**Latitude**	**Longitude**
	Field Screening	All	222 "Major" outfalls (i.e., 80% of 278 "Major" outfalls in the WMA)			
	Non-storm Water Persistent Flow MS4 Outfall Discharge Sampling	J01-9007-1	Aliso Viejo	Aliso Creek	33.558645	-117.737827
		J01-9992-1	Aliso Viejo	Aliso Creek	33.573256	-117.716612
		J01-9131-1	Aliso Viejo	Aliso Creek	33.574713	-117.715865
		J06-9079-1	Aliso Viejo	Aliso Creek	33.592263	-117.715642
		J06-10011-1	Aliso Viejo	Aliso Creek	33.595041	-117.715762
		J01-9082-2	Aliso Viejo	Aliso Creek	33.581589	-117.745760
		J06-9362-1	Aliso Viejo	Aliso Creek	33.591100	-117.714334
		L01-727-1	Dana Point	San Juan Creek	33.471155	-117.681012
		L01-728-5	Dana Point	San Juan Creek	33.468224	-117.682223
		I00-11468-1	Laguna Beach	Laguna Coastal Streams	33.535658	-117.769013
		I01-11010-1	Laguna Beach	Laguna Coastal Streams	33.544343	-117.783317
		J03-9221-1	Laguna Niguel	Aliso Creek	33.549947	-117.717171
		J01-9224-2	Laguna Niguel	Aliso Creek	33.557616	-117.717680
		J01-9224-1	Laguna Niguel	Aliso Creek	33.556482	-117.717798
		K01-12156-4	Laguna Niguel	Dana Point Coastal Streams	33.505611	-117.708565
		K01-12177-1	Laguna Niguel	Dana Point Coastal Streams	33.508601	-117.707381

	L03-418-8	Laguna Niguel	San Juan Creek	33.557570	-117.676309
	J01-9273-1	Laguna Woods	Aliso Creek	33.599892	-117.707365
	J01-9349-1	Lake Forest	Aliso Creek	33.644123	-117.665816
	J01-9046-2	Lake Forest	Aliso Creek	33.654461	-117.659687
	J01-9046-1	Lake Forest	Aliso Creek	33.654533	-117.659798
	J01-9785-1	Lake Forest	Aliso Creek	33.617162	-117.693665
	J01-10004-1	Lake Forest	Aliso Creek	33.633411	-117.676900
	L04-136-1	Mission Viejo	San Juan Creek	33.606868	-117.677865
	L04-266-5	Mission Viejo	San Juan Creek	33.607317	-117.668880
	L03-316-3	Mission Viejo	San Juan Creek	33.596022	-117.655902
	L03-662-3	Mission Viejo	San Juan Creek	33.624723	-117.648244
	L03-214-2	Mission Viejo	San Juan Creek	33.623725	-117.642315
	L03-073-3	Mission Viejo	San Juan Creek	33.644244	-117.639317
	L02-374-1	Orange County/ Flood Control	San Juan Creek	33.569855	-117.646012
	L05-049-1	Orange County/ Flood Control	San Juan Creek	33.534750	-117.646189
	L01-404-1	Orange County/ Flood Control	San Juan Creek	33.564522	-117.585847
	L01-340-1	Orange County/ Flood Control	San Juan Creek	33.586962	-117.595440
	L05-489-3	Orange County/ Flood Control	San Juan Creek	33.529802	-117.646538
	L02-246-1	Rancho Santa Margarita	San Juan Creek	33.610465	-117.616600
	L01-731-1	Rancho Santa Margarita	San Juan Creek	33.625156	-117.566008
	L02-641-1	Rancho Santa Margarita	San Juan Creek	33.631117	-117.594886
	L02-166-3	Rancho Santa Margarita	San Juan Creek	33.644613	-117.613795
	L02-641-2	Rancho Santa Margarita	San Juan Creek	33.631115	-117.594853
	M02-032-1	San Clemente	San Clemente Coastal Streams	33.457547	-117.600832
	M01-042-1	San Clemente	San Clemente Coastal Streams	33.454447	-117.623444
	M02-015-1	San Clemente	San Clemente Coastal Streams	33.478157	-117.583246
	M02-062-2	San Clemente	San Clemente Coastal Streams	33.451206	-117.609882
	M02-085-1	San Clemente	San Clemente Coastal Streams	33.458346	-117.594583

M02-085-2	San Clemente	San Clemente Coastal Streams	33.458044	-117.594250
L01-749-2	San Juan Capistrano	San Juan Creek	33.508305	-117.640179
L01-766-7	San Juan Capistrano	San Juan Creek	33.492296	-117.663183
L02-541-9	San Juan Capistrano	San Juan Creek	33.503991	-117.667517
L01-766-4	San Juan Capistrano	San Juan Creek	33.487744	-117.667590
L01-766-2	San Juan Capistrano	San Juan Creek	33.485916	-117.672152

Frequency of Events	Field Screening *and* Non-storm Water Persistent Flow MS4 Outfall Discharge Sampling will be performed twice annually, during dry conditions with an antecedent dry period of at least 72 hours with less than 0.1 inch of rainfall.
Monitoring Methods Reference	South Orange County Monitoring and Assessment Program Quality Assurance Program Plan (In progress)

3.1.2 Sample Analysis

- Field Screening Observations
- Grab samples (Non-storm Water Persistent Flow MS4 Outfall Discharge Sampling)

Dry Weather MS4 Outfall Discharge Monitoring - Field Screening Observations	1) Station identification and location
	2) Presence of flow, or pooled or ponded water
	3) If flow is present: - Flow estimation (i.e. width of water surface, approximate depth of water, approximate flow velocity, flow rate) - Flow characteristics (i.e. presence of floatables, surface scum, sheens, odor, color) - Flow sources (suspected or identified) - Flow sources eliminated
	4) If pooled or ponded water is present: - Characteristics of pooled or ponded water (i.e. presence of floatables, surface scum, sheens, odor, color)
	5) Station description (i.e. deposits or stains, vegetation condition, structural condition, observable biology)
	6) Presence and assessment of trash in and around station

	Parameter Type	Parameter Group	Parameter
Dry Weather MS4 Outfall Discharge Monitoring – Grab Samples*	Field Measurements		pH[1]
			Temperature[2]
			Specific Conductivity[2]
			Dissolved Oxygen[1]
			Turbidity[1,3]
	Laboratory Analytes	Conventional	Chloride[3]
			Total Dissolved Solids[2,3]
			Total Suspended Solids[2]
			Total Hardness[2]
			Total Organic Carbon
			Dissolved Organic Carbon
			Sulfate[3]
			MBAS[1]
		Metals (Total and Dissolved)	Arsenic
			Cadmium[1,2,3]
			Chromium
			Chromium III[1]
			Chromium VI[1]
			Copper[1,2,3]
			Iron[1]
			Lead[1,2]
			Manganese[1]
			Nickel[1,3]
			Selenium[3]
			Silver[1]
			Thallium
			Zinc[1,2,3]
		Nutrients	Total Phosphorus[1,2,3]
			Orthophosphate[2]
			Nitrate[2]
			Nitrite[2]

		Total Nitrogen as N[1,3]
		Total Kjeldahl Nitrogen[2]
		Ammonia[2]
	Indicator Bacteria[1,2,3]	Total Coliform
		Enterococcus
		Fecal Coliform
	Polycyclic Aromatic Hydrocarbons[3]	Benzo[b]fluoranthene
	Organophosphate Pesticides[3]	Diazinon
	Organochlorine Pesticides[3]	Dieldrin
		DDE

Notes: * - Applicable when measurable flow is present; grab or composite samples will be collected.
1 – Permit Provision C.1 parameter
2 – Permit Provision D.2.b parameter.
3 – 303(d) Listed constituent.

3.2 Wet Weather MS4 Outfall Discharge Monitoring (Permit Prov. D.2.c)

3.2.1 Overview

Objectives	Determine which persistent non-storm water discharges contain concentrations of pollutants below storm water action levels (SALs) (Permit Prov. C.2)
	Determine the relative contribution of MS4 outfalls to priority water quality conditions during wet weather
	Investigate how discharge concentrations, loads, and flows change over time at representative MS4 outfalls

Sampling Locations	**Station_ID**	**Jurisdiction**	**Watershed**	**Latitude**	**Longitude**
	J01P27	Aliso Viejo	Aliso Creek	33.57324	-117.71661
	L01-DP	Dana Point	San Juan Creek	33.46822	-117.68222
	VICTRA u/s P	Laguna Beach	Laguna Coastal Streams	33.54098	-117.78353
	J03P01in	Laguna Niguel	Aliso Creek	33.52829	-117.70968
	L03P05	Laguna Niguel	San Juan Creek	33.56270	-117.67590
	SCNK01	Laguna Niguel	Dana Point Coastal Streams	33.50596	-117.70744
	J01ASVM	Laguna Woods	Aliso Creek	33.59990	-117.70734
	J01-Norm	Lake Forest	Aliso Creek	33.65440	-117.65960
	J07P02	Mission Viejo	Aliso Creek	33.64645	-117.65580
	Horno/u	Orange County	San Juan Creek	33.53475	-117.64617
	Horno_OUT	Orange County	San Juan Creek	33.52979	-117.64653
	L02P25	Rancho Santa Margarita	San Juan Creek	33.63762	-117.61790
	M00P02	San Clemente	San Clemente Coastal Streams	33.41778	-117.61793
	L01P03	San Juan Capistrano	San Juan Creek	33.48468	-117.67537

Frequency of Events	Once annually, during the wet season (October 1 – April 30).

Monitoring Methods Reference	South Orange County Monitoring and Assessment Program Quality Assurance Program Plan (In progress)

3.2.2 Sample Collection

- Field Observations

- Time-weighted Composites
- Grab Samples

3.2.3 Sample Analysis

	Parameter Group	Parameter
Wet Weather MS4 Outfall Discharge Monitoring – Field Observations	Station[2]	Station location
		Storm event date
	Storm Event[2]	Duration of storm event sampled
		Total rainfall for storm event sampled
		Duration of time between storm event sampled and the end of the previous storm event exceeding 0.1 inch of rainfall
	Flow[2]	Storm event flow rates
		Storm event volume

	Sample Type	Parameter Group	Parameter
Wet Weather MS4 Outfall Discharge Monitoring - Sampling Parameters	Grab Samples	Field Measurements	pH[2]
			Temperature[2]
			Specific Conductivity[2]
			Dissolved Oxygen[2]
			Turbidity[1,2,3]
		Indicator Bacteria[1,2,3]	Total Coliform
			Enterococcus
			Fecal Coliform
	Time-weighted Composites	Conventional	Chloride[3]
			Total Dissolved Solids[2,3]
			Total Suspended Solids[2]
			Total Hardness[2]
			Total Organic Carbon[2]
			Dissolved Organic Carbon[2]
			Sulfate[2,3]
			MBAS[2]
		Metals (Total and	Arsenic[2]

	Dissolved)	Cadmium[1,2,3]
		Chromium[2]
		Copper[1,2,3]
		Iron[2]
		Lead[1,2]
		Nickel[2,3]
		Selenium[2,3]
		Thallium[2]
		Zinc[1,2,3]
	Nutrients	Total Phosphorus[1,2,3]
		Orthophosphate[2]
		Nitrate + Nitrite[1,2]
		Total Nitrogen as N[3]
		Total Kjeldahl Nitrogen[2]
		Ammonia[2]
	Polycyclic Aromatic Hydrocarbons[3]	Benzo[b]fluoranthene
	Organophosphate Pesticides[3]	Diazinon
	Organochlorine Pesticides[3]	Dieldrin
		DDE

Notes: 1 – Permit Provision C.2 parameter.
2 – Permit Provision D.2.c parameter.
3 – 303(d) Listed constituent.

4 BACTERIA TMDL MONITORING (PERMIT ATTACHMENT E)

4.1.1 Overview

Objectives	Determine whether the TMDL numeric targets for bacteria indicators are being met at the compliance monitoring locations.
	Evaluate whether bacteria levels are improving at the compliance monitoring locations.

Twenty Beaches and Creeks Sampling Locations*	**TMDL Watershed**	**TMDL Waterbody**	**Segment or Area**	**Monitoring Stations**
	San Joaquin Hills HSA and Laguna Beach HSA	Pacific Ocean Shoreline	Cameo Cove at Irvine Cove Drive – Riviera Way[1]	TBD
			at Heisler Park - North[1]	HEISLR u/d/z
		Pacific Ocean Shoreline	at Main Laguna Beach[1]	MAINBC u/d/z
			Laguna Beach at Ocean Avenue[1]	VICTRA u/d/z
			Laguna Beach at Cleo Street[1]	CLEO u/d/z
			Arch Cove at Bluebird Canyon Road[1]	BLUBRD u/d/z
			Laguna Beach at Dumond Drive[1]	DUMOND u/d/z
	Aliso HSA	Pacific Ocean Shoreline	Laguna Beach at Lagunita Place / Blue Lagoon Place at Aliso Beach[1]	BLULGN u/d/z
		Aliso Creek	Entire reach (7.2 miles) and associated tributaries: - Aliso Hills Channel - English Canyon Creek - Dairy Fork Creek - Sulfur Creek - Wood Canyon Creek	ACJ01 CTPJ01
		Aliso Creek Mouth	at mouth	ACM1
	Dana Point HSA	Pacific Ocean Shoreline	Aliso Beach at West Street[1]	WEST u/d/z
			Aliso Beach at Table Rock Drive[1]	S6
			100 Steps Beach at Pacific Coast Hwy at hospital	S4

		(9th Avenue) [1]	
		at Salt Creek (large outlet) [1]	OSL25 SCM1 d/z
		Salt Creek Beach at Salt Creek service road[1]	S2
		Salt Creek Beach at Strand Road[1]	S1
Lower San Juan HSA	Pacific Ocean Shoreline	at San Juan Creek	S-0
	San Juan Creek	lower 1 mile	SJCL01
	San Juan Creek Mouth	at mouth	SJC1 u/d/z
San Clemente HSA	Pacific Ocean Shoreline	at Poche Beach	S-15
			POCHE u/d/z
		Ole Hanson Beach Club Beach at Pico Drain[1]	PICO u/d/z
			S-17
		San Clemente City Beach at El Portal Street Stairs[1]	ELPORTAL u/d/z
		San Clemente City Beach at Mariposa Street[1]	MARIPO u/d/z
		San Clemente City Beach at Linda Lane[1]	LINDAL u/d/z
		San Clemente City Beach at South Linda Lane[1]	SLINDAL u/d/z
		San Clemente City Beach at Lifeguard Headquarters[1]	S-19
		San Clemente Municipal Pier	PIER u/d/z
		San Clemente City Beach at Trafalgar Canyon (Trafalgar Lane) [1]	TRFCYN u/d/z
		San Clemente State Beach at Riviera Beach[1]	S-21
			RIVERA u/d/z
		San Clemente State Beach at Cypress Shores[1]	S-23

Notes: * SOC WMA Copermittees will identify and incorporate additional MS4 outfall and receiving water monitoring stations and/or adjust monitoring frequencies to identify sources causing exceedances of the receiving water WQBELs.
1 Beach segments omitted or delisted from the 2010 Clean Water Act Section 303(d) List of Water Quality Limited Segments for bacteria (REC-1 beneficial use).
u/d/z Station has three sample locations associated with it: 1) "up-coast," 2) "down-coast," and 3) "zero-point." The "zero-point" is the position along the shoreline where the surface flow enters the ocean. At times when there is no surface flow connection with the ocean, a "virtual zero-point" is sampled, which is the position along the shoreline where it appears that surface flow would enter the ocean if there were a surface flow.

Baby Beach TMDL Sampling Locations*	**TMDL Watershed**	**TMDL Waterbody**	**Segment or Area**	**Monitoring Stations**
	Dana Point HSA	Dana Point Harbor	Baby Beach	BDP12
				BDP13
				BDP14[1]
				BDP15

Notes: * SOC WMA Copermittees will identify and incorporate additional MS4 outfall and receiving water monitoring stations and/or adjust monitoring frequencies to identify sources causing exceedances of the receiving water WQBELs.
1 Wet weather monitoring station.

Frequency of Events			
	Dry weather	Beaches[1]	Weekly (via the Unified Beach Monitoring Program)
		Creeks	Monthly
	Wet weather[2]	Creeks/Beaches[3]	At least once/year, within the first 24 hours of the end of a storm event; up to 6 storms per year.
		Beaches	At least once/year, within the first 72 hours of the end of a storm event

Notes: 1 Frequency applies to both active and delisted beach segments.
2 Wet weather days are defined as storm events of 0.1 inches or greater and the following 72 hours.

3 Listed beach segments only

Monitoring Methods Reference	Baby beach annual report
	South Orange County Monitoring and Assessment Program Quality Assurance Program Plan (In progress)

4.1.2 Sample Collection

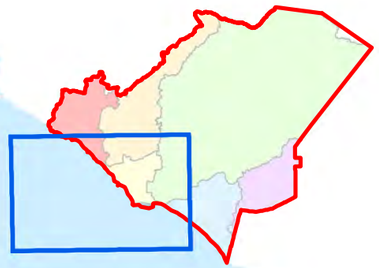
- Field Parameters
- Grab samples

4.1.3 Sample Analysis

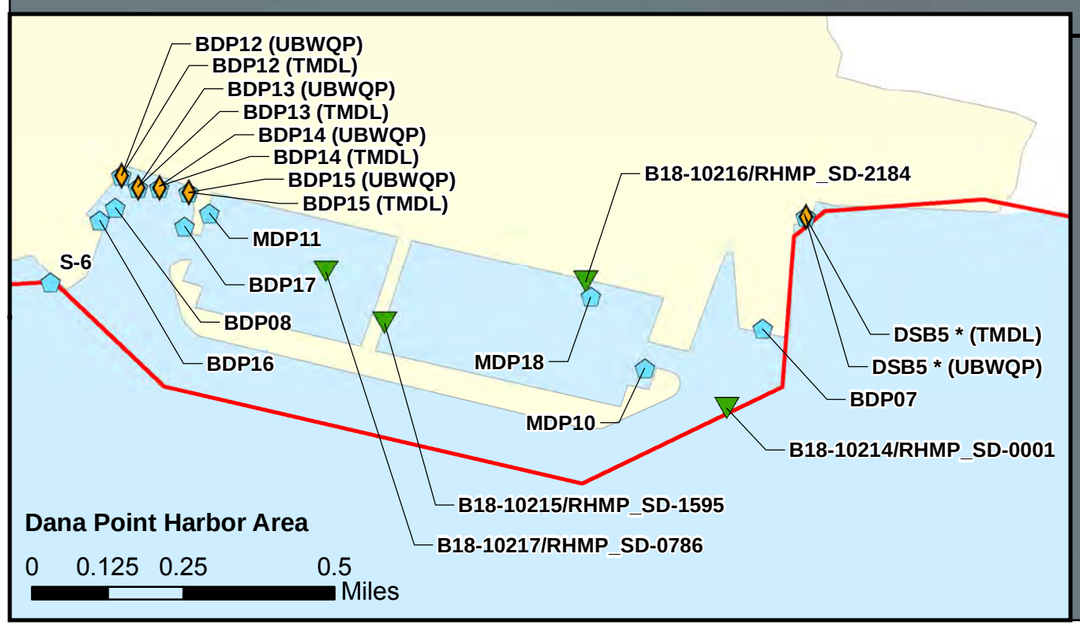
Bacterial TMDL Monitoring	Field Parameters (Optional During Dry Weather)		Dissolved Oxygen
			pH
			Specific conductivity
			Temperature
			Turbidity
	Compliance Grab Samples	Beaches/ Creek Mouths	*Enterococcus*
			Fecal coliform
			Total coliform
		Creeks	*Enterococcus*
			Fecal coliform
			Escherichia coli

Exhibit 11.2: Map of Monitoring Stations

MAP VICINITY



S9 (UBWQP)
S9 (TMDL)
S8
WEST * (UBWQP)
WEST * (TMDL)
S6 (UBWQP)
S6 (TMDL)
S5
S4 (UBWQP)
S4 (TMDL)
S3
OSL25/SCM1 * (UBWQP)
OSL25/SCM1 * (TMDL)
S2 (UBWQP)
S2 (TMDL)
S1 (UBWQP)
S1 (TMDL)
K01-12177-1
SCNK01
K01-12156-4
SC-MB
K01-12126-1
B18-10217/RHMP_SD-0786
B18-10215/RHMP_SD-1595
B18-10216/RHMP_SD-2184
Salt Creek
San Juan Canyon
Arroyo Salado
Salt Creek
BDP08
BDP16
S-6
BDP12 (UBWQP)
BDP12 (TMDL)
BDP13 (UBWQP)
BDP13 (TMDL)
BDP14 (UBWQP)
BDP14 (TMDL)
BDP15 (UBWQP)
BDP15 (TMDL)
MDP11
BDP17
MDP18
MDP10
DSB5 * (TMDL)
DSB5 * (UBWQP)
BDP07
B18-10214/RHMP_SD-0001



Legend

- SOC WMA Boundary
- Dry Weather MS4 Outfall (3)

Monitoring Program Stations

- Wet Weather MS4 Outfall (1)
- Targeted Bioassessment (1)

Regional Monitoring Program Stations

- UBWQP (23)
- Regional Harbor Monitoring Program (4)

TMDL Monitoring Stations

- TMDL, Creek/Creek Mouth (1)
- TMDL, Beach (11)

South OC Coastal Watersheds

- Laguna Coastal Streams
- Aliso Creek
- Dana Point Coastal Streams
- San Juan Creek
- San Clemente Coastal Streams
- San Mateo Creek

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* - During wet weather, these "outlet" stations have three monitoring locations: 1) "point zero" which is the position along the shoreline where the surface flow enters the ocean; 2) seventy-five feet up-coast from point zero; and 3) seventy-five feet down-coast from point zero. During dry weather, these "outlet" stations have one monitoring location, the "virtual point zero," which is the position along the shoreline where it appears that surface flow would enter the ocean if there were a surface flow.

0 0.5 1 2
Miles

Aerial imagery courtesy of ESRI World Imagery Service

Orange County, California

Dana Point Coastal Streams Watershed

Water Quality Improvement Plan

TETRA TECH
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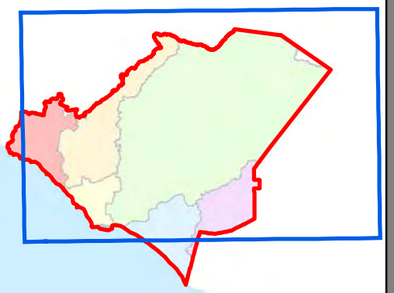
Santa Maria, CA 93455

TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
34314	5/07/2018	REYNOLDS	10195	L3

MAP VICINITY



REF-TCAS (Targeted Bioassessment)

REF-TCAS (Stormwater Monitoring Coalition)

L02-166-3

L03-141-1

L02P25

901M14118

L03-662-3

901M14134

L04-266-5

L04-136-1

SMC03523

SMC00963

L03P05

L03-418-8

SMC00206

Horno/u

L05-049-1

Horno_OUT

L05-489-3

L02-541-9

TC-DO

TCOL02

L01-766-4

L01-766-2

L01P03

L01-727-1

L01-DP

S-2

SJC1 * (UBWQP)

SJC1 * (TMDL)

S-0 (UBWQP)

S-0 (TMDL)

S-1

S-3

DSB4 * (TMDL)

DSB4 * (UBWQP)

SJCL01

L01-728-5

L01-766-7

SMC01934

SJNL01

L01-749-2

SJC-74

L03-316-3

L02-374-1

SMC01257

L02-246-1

SMC00873

L01-340-1

L01-404-1

L02-641-2

L02-641-1

REF-BC

L01-731-1

Arroyo Trabuco

Oso Creek

Live Oak Canyon

Hickey Canyon

Rose Canyon

Holy Jim Canyon

Falls Canyon

Bell Canyon

Long Canyon

Dove Canyon

Fox Canyon

Hot Spring Canyon

Lion Canyon

Decker Canyon

Morrell Canyon

Bear Canyon

Spring Canyon

Cold Canyon

Crow Canyon

Wagon Wheel Canyon

Cañada Gobernadora

Cañada Chiquita

Trampas Canyon

Horno Creek

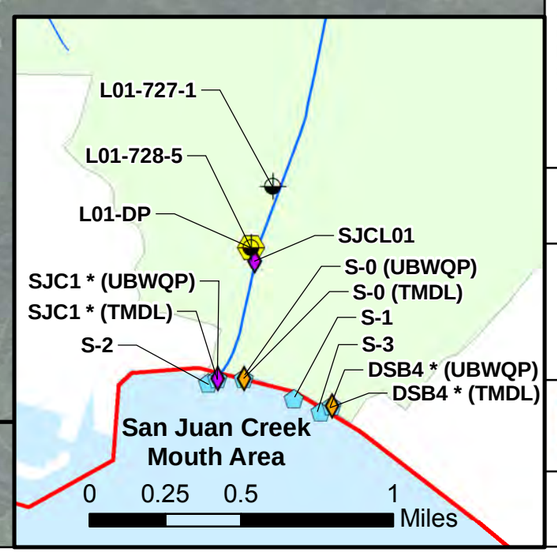
Lucas Canyon

Aliso Canyon

Verdugo Canyon

San Juan Creek

0 1 2 4 Miles



Legend

- SOC WMA Boundary
- Dry Weather MS4 Outfall (23)

Monitoring Program Stations

- Wet Weather MS4 Outfall (6)
- Targeted Bioassessment (4)
- Long Term Mass Emission Station (2)

Regional Monitoring Program Stations

- UBWQP (6)
- Stormwater Monitoring Coalition (9)

TMDL Monitoring Stations

- TMDL, Creek/Creek Mouth (2)
- TMDL, Beach (2)

South OC Coastal Watersheds

- Laguna Coastal Streams
- Aliso Creek
- Dana Point Coastal Streams
- San Juan Creek
- San Clemente Coastal Streams
- San Mateo Creek

N W E S

Non-OC Coastal Watershed

- San Juan Creek Watershed Area Outside Orange County Boundaries

* - During wet weather, these “outlet” stations have three monitoring locations: 1) “point zero” which is the position along the shoreline where the surface flow enters the ocean; 2) seventy-five feet up-coast from point zero; and 3) seventy-five feet down-coast from point zero. During dry weather, these “outlet” stations have one monitoring location, the “virtual point zero,” which is the position along the shoreline where it appears that surface flow would enter the ocean if there were a surface flow.

Aerial imagery courtesy of ESRI World Imagery Service

Orange County, California

San Juan Creek Watershed

Water Quality Improvement Plan

TETRA TECH

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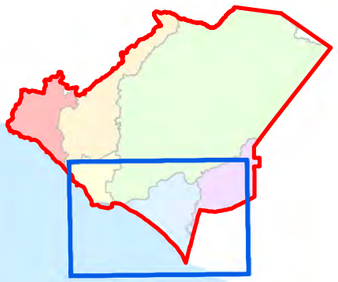
TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
34314	3/20/2017	REYNOLDS	9839	L4

MAP VICINITY



M02-015-1
Cañada
Deshecha
Prima
M02-085-1
M02-085-2
M02-032-1
M01-042-1
M02-050-4
PDCM01
SD-AP
Cañada
Deshecha
Segunda
901M14124
SDCM02
M00P02
LADERA *
S-5
DSB1 *
S-9
S-11
S-13
CSBMP1 * (UBWQP)
CSBMP1 * (TMDL)
CSBBR1 * (UBWQP)
CSBBR1 * (TMDL)
S-15 (UBWQP)
S-15 (TMDL)
POCHE * (UBWQP)
POCHE * (TMDL)
PICO * (UBWQP)
PICO * (TMDL)
S-17 (UBWQP)
S-17 (TMDL)
El Portal (UBWQP)
El Portal (TMDL)
MARIPO * (UBWQP)
MARIPO * (TMDL)
LINDAL * (UBWQP)
LINDAL * (TMDL)
South Linda (UBWQP)
South Linda (TMDL)
S-19 (UBWQP)
S-19 (TMDL)
PIER * (UBWQP)
PIER * (TMDL)
TRFCYN * (UBWQP)
TRFCYN * (TMDL)
RIVERA * (UBWQP)
RIVERA * (TMDL)
S-21 (UBWQP)
S-21 (TMDL)
S-23 (UBWQP)
S-23 (TMDL)

Legend

- SOC WMA Boundary
- Dry Weather MS4 Outfall (6)

Monitoring Program Stations

- Wet Weather MS4 Outfall (1)
- Targeted Bioassessment (1)
- Long Term Mass Emission Station (2)

Regional Monitoring Program Stations

- UBWQP (22)
- Stormwater Monitoring Coalition (1)

TMDL Monitoring Stations

- TMDL, Beach (16)

South OC Coastal Watersheds

- Laguna Coastal Streams
- Aliso Creek
- Dana Point Coastal Streams
- San Juan Creek
- San Clemente Coastal Streams
- San Mateo Creek

Non-OC Coastal Watershed

- San Clemente Coastal Watershed Area Outside Orange County Boundaries

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* - During wet weather, these “outlet” stations have three monitoring locations: 1) “point zero” which is the position along the shoreline where the surface flow enters the ocean; 2) seventy-five feet up-coast from point zero; and 3) seventy-five feet down-coast from point zero. During dry weather, these “outlet” stations have one monitoring location, the “virtual point zero,” which is the position along the shoreline where it appears that surface flow would enter the ocean if there were a surface flow.

0 0.5 1 2 Miles

Aerial imagery courtesy of ESRI World Imagery Service

Orange County, California

San Clemente Coastal Streams Watershed

Water Quality Improvement Plan

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TC NO.	DATE	DRAWN BY	MAP NO.	FIGURE
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Acronyms

303(d)	EPA List of Impaired Waters
ACL	Administrative Civil Liability
ACO	Administrative Compliance Order
AI	Authorized Inspector
APWA	American Public Works Association
AMAL	Average Monthly Action Level
ASBS	Area of Special Biological Significance
AQMD	Air Quality Management District
BAT	Best Available Technology
BCT	Best Conventional Technology
BIA	Building Industry Association
BMP	Best Management Practice
BPJ	Best Professional Judgement
Basin Plan	Water Quality Control Plan for the San Diego Basin
CAP	Household Hazardous Waste Community Awareness Program
CAR	Critical Aquatic Resources
CASC	Countywide Areas Spill Control Program
CASQA	California Stormwater Quality Association
CC&Rs	Covenants, Codes & Restrictions
CDFG	California Department of Fish & Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CGP	Construction General Permit
CHP	California Highway Patrol
CHWSRS	Comprehensive Human Waste Source Reduction Strategy
CIA	Common Interest Areas
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CWC	Clean Water Code
CZARA	Coastal Zone Act Reauthorization Amendments of 1990
DA	District Attorney
DAMP	Drainage Area Management Plan
DCIA	Directly Connected Impervious Area
DHS	Department of Health Services
DMV	Department of Motor Vehicles
DOT	Department of Transportation
DTSC	Department of Toxic Substance Control
EA	Enforcing Attorney
ECG	Enforcement Consistency Guide
EHS	Environmental Health Services
EOC	Emergency Operations Center
EMC	Event Mean Concentration
EPA	Environmental Protection Agency
EPR	Environmental Performance Reporting
ERP	Enforcement Response Plan

Acronyms

ESA	Environmentally Sensitive Area
FC	Fecal Coliform
FIM	Fecal Indicator Bacteria
GIS	Geographic Information System
GPM	Gallons per Minute
GPS	Global Positioning System
GRBOD	Geomorphically-referenced Basis Of Design
HAZMAT	Hazardous Materials
HCA	Health Care Agency
HHW	Household Hazardous Waste
HMI	Hazardous Materials Incident
HOA	Homeowner's Association
HPWQC	Highest Priority Water Quality Conditions
HSA	Hydrologic Sub Area
HU	Hydrologic Unit
HWI	Hazardous Waste Inspector
IBI	Index of Biological Integrity
IC	Incident Commander
IDDE	Illicit Discharge, Detection and Elimination
ID/IC	Illegal Discharge/Illicit Connection
IPM	Integrated Pest Management
IRWD	Irvine Ranch Water District
IRWMP	Integrated Regional Water Management Plan
IWMD	Integrated Waste Management Department
JPA	Joint Powers Authorities
JURMP	Jurisdictional Urban Runoff Management Plan
LID	Low Impact Development
LIP	Local Implementation Plan
LC	LIP Coordinator
MDAL	Maximum Daily Action Level
MEP	Maximum Extent Practicable
MOU	Memorandum of Understanding
MPN	Most Probable Number
MRP	Monitoring and Reporting Programs
MS4	Municipal Separate Storm Sewer System
NAL	Non-Stormwater Action Level
NAICS	North America Industry Classification System
NEPA	National Environmental Policy Act
NNC	Notice of Non-compliance
NCCP	Natural Community Conservation Planning Program
NOA	Notice Of Applicability
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Polluant Discharge Elimination System
NSE	Natural Source Exclusion
OC	Orange County
OCC	Orange County Code

Acronyms

OCFA	Orange County Fire Authority
OCFCD	Orange County Flood Control District
OCP	OC Planning
OCPW	OC Public Works (Formerly RDMD)
OCSD	Orange County Sanitation District
OCTA	Orange County Transportation Authority
OCW	OC Watersheds (Formerly Watershed & Coastal Resources)
OES	Office of Emergency Services
O&M	Operations & Maintenance
OWTS	On-site Wastewater Treatment System
PDSD	Planning & Development Services Department
PEA	Program Effectiveness Assessment
PNIR	Pollution Notification/Investigation Request
PPE	Personal Protective Equipment
PWQC	Priority Water Quality Conditions
QA/QC	Quality Assurance/Quality Control
RAA	Reasonable Assurance Analysis
RCRA	Resource Conservation and Recovery Act
RMV	Rancho Mission Viejo
ROWD	Report of Waste Discharge
ROMP	Runoff Management Plan
RP	Responsible Party
SAL	Stormwater Action Level
SAR	Santa Ana Region
SAMP	Special Area Management Plan
SBPAT	Structural BMP Prioritization and Analysis Tool
SCAG	Southern California Association of Governments
SCCWRP	Southern California Coastal Water Research Project
SDR	San Diego Region
SDRWQCB	San Diego Regional Water Quality Control Board
SEEP	SmarTimer Edgescape Evaluation Project
SIC	Standard Industrial Classification Code
SOC	South Orange County
SOCWA	South Orange County Wastewater Authority
SOCWMA	South Orange County Watershed Management Area
SR	Spill Responder
SSMP	Sewer System Management Plans
SSO	Sanitary Sewer Overflow
SSO	Site Specific Objective
SUSMP	Standard Urban Storm Water Mitigation Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Technical Advisory Committee
TDS	Total Dissolved Solids
TLR	Target Load Reduction
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids

Acronyms

UCI	University of California, Irvine
UHWM	Uniform Hazardous Waste Manifest
USEPA	United States Environmental Protection Agency
WAP	Watershed Action Plan (Formerly Watershed Urban Runoff Management Plan)
WDR	Waste Discharge Requirement
WDID	Waste Discharge Identification Number
WDR	Waste Discharge Requirements
WQIP	Water Quality Improvement Plan
WLA	Water Load Allocation
WMA	Watershed Management Area
WMAA	Watershed Management Area Analysis
WQBEL	Water Quality Based Effluent Limitation
WQIP	Water Quality Improvement Plan
WQMP	Water Quality Management Plan
WQO	Water Quality Objective
WSPA	Western States Petroleum Association
WY	Water Year