

San Diego Stormwater Copermittees
Jurisdictional Urban Runoff Management Program
(URMP)

Existing Commercial Facilities
Model Program Guidance

November 13, 2001



project clean water

**San Diego Stormwater Copermittees
Jurisdictional Urban Runoff Management Program (URMP)
Existing Commercial Facilities
Model Program Guidance
November 13, 2001**

Table of Contents

Section I.	Background	1
Section II.	Program Objectives	2
Section III.	Implementation Strategy	3
	A. Commercial Source Identification	3
	B. Establishment of Discharge Prohibitions and BMP Requirements	3
	C. Education and Outreach	4
	D. Inspection and Investigation	4
	E. Enforcement	5
	F. Monitoring	6
Section IV.	Establishment and Maintenance of Program Priorities	7
	A. Minimum High Priorities	7
	B. Determination of Additional Priorities	11
Section V.	Best Management Practice Requirements and Recommendations	14
	A. Pollution Prevention	14
	B. Minimum BMPs for High Priority Commercial Sites	15
Section VI.	Inspections	17
	A. Pre-Inspection Preparation (Profile)	17
	B. The Site Visit	18
	C. Post-Visit Activities	20
Section VII.	Enforcement	21
	A. Objectives of an Enforcement Program	21
	B. Procedures for Corrective and Enforcement Actions	21
	C. Responsible Parties	23
Section VIII.	Program Effectiveness	24
	A. Direct Measures	24
	B. Indirect Measures	25
Appendix A	Stormwater Permit Sections Relating to Commercial Facilities	A-1
Appendix B	1998 Clean Water Act Section 303(d) List	B-1
Appendix C	Designated RARE Water Bodies in the San Diego Region	C-1
Appendix D	Best Management Practices (BMPs): Tables and Sources	D-1
Appendix E	Sample Inspection Report Forms	E-1

Section I. Background

The current Municipal Storm Water National Pollutant Discharge Elimination System (NPDES) Permit (Order No. 2001-01) requires that each Copermittee assess the impact of industrial and commercial facilities on water quality within its jurisdiction. In general, a facility where the primary activity involves the conversion of raw materials into an intermediate or final product, by-products, and waste can be classified as an industrial site. On the other hand, if the facility provides a service, such as cleaning, repair, entertainment, or food service, it generally is considered to be a commercial site. This document provides guidance for Copermittees in the implementation of their respective programs to reduce contaminants in urban runoff originating from Existing Commercial Facilities.

Permit section F.3.c establishes requirements for local jurisdictions to develop and implement a program to reduce pollutants in urban runoff originating from existing commercial facilities. The Permit generally requires that existing high priority commercial facilities be identified, that minimum best management practices (BMPs) be established for this class, and that a process for ensuring the application of BMPs be implemented and enforced by Copermittees. In support of this mandate, this document provides suggested guidance to Copermittees in developing the Existing Commercial Facilities component of their Jurisdictional Urban Runoff Management Programs (URMPs) as required by Permit section H.1.a.(4)¹ to be submitted to the San Diego Regional Water Quality Control Board (SDRWQCB) by February 21, 2002. It does not establish, or promote the establishment of, a particular set of minimum standards or program activities for Copermittee programs. Rather, it provides guidance for establishing individual program priorities and requirements, as well as a description of viable options and approaches available to Copermittees in lawfully complying with their permit obligations. Recommended activities and BMPs are based on the consensus of the Model Existing Industrial/Commercial Facilities Technical Workgroup.

A second and equally important focus of this guidance is to promote consistency among Copermittee programs. Permit section N.1 specifically requires that Copermittees “collaborate with all other Copermittees regulated under this Order to address common issues, [to] promote consistency among...Jurisdictional URMPs [and Watershed URMPs]...and to plan and coordinate activities required under this Order.” Consistency is especially crucial to the commercial facility owners and operators of San Diego County who must ultimately abide by the standards and requirements set forth in individual jurisdictional programs. This document represents the first phase of Copermittee collaboration with respect to existing commercial facilities. It is expected that additional collaboration will be necessary as Copermittees implement programs and evaluate their effectiveness over time.

¹ Requirements relating to existing commercial facilities are located in numerous sections throughout the Permit. Specific section references are provided as necessary. These sections are also included as Appendix A.

Section II. Program Objectives

The goal of this program component is to minimize the impact of existing commercial facilities on, and, where possible, to enhance the quality of, receiving waters and other environmental resources in the County of San Diego. In support of this goal, this guidance addresses three primary objectives:

- o To provide Copermitttees with model guidelines for developing and implementing commercial stormwater inspection programs;
- o To assure consistency in stormwater quality regulation on a regional basis; and
- o To assist commercial dischargers in complying with the local Municipal Storm Water National Pollutant Discharge Elimination System (NPDES) Permit (Order No. 2001-01).²

² *Permit* and *Order No. 2001-01* are used interchangeably throughout this document.

Section III. Implementation Strategy

The development and implementation of an urban runoff management program requires the integration of several elements when addressing existing commercial facilities: (1) identifying and inventorying sites considered to present a high threat to water quality; (2) establishing discharge prohibitions; (3) providing education and outreach; (4) inspecting commercial sites and investigating related complaints, as needed; and (5) enforcing stormwater regulations and ordinances.

A. COMMERCIAL SOURCE IDENTIFICATION

Permit section F.3.c.(2) requires that each Copermittee establish an inventory of high priority commercial facilities within its jurisdiction. Although the Permit does not specify a watershed-based inventory for commercial sites, Copermittees should use this design to maintain consistency with other inventories required by the Permit.

The purpose of a watershed-based inventory is to assist the Copermittee in identifying commercial sites and related pollutants within its jurisdiction, in providing a compliance history for each site, and in allocating resources for future inspection, enforcement, and outreach efforts. Criteria for designating facilities as high threat to water quality are discussed in greater detail in Section IV of this document.

A watershed-based inventory of facilities will also assist Copermittees in complying with the requirements of their Watershed URMPs, as discussed in Permit section J. Watershed maps should show the interrelationship of multiple separate storm sewer systems (MS4s) and high priority commercial sites from multiple jurisdictions.

In some cases, a commercial facility may be operating—or eligible to operate—under the statewide General Industrial Permit or another NPDES permit. Or, the facility may meet criteria for inclusion in a Copermittee's industrial inventory, as described in Permit section F.3.(b).3. In such cases, the facility would be included only in the industrial inventory and not in the commercial inventory.

B. ESTABLISHMENT OF DISCHARGE PROHIBITIONS AND BMP REQUIREMENTS

Copermittees must establish and maintain adequate legal authority to implement the provisions of their urban runoff programs. This effort generally requires the establishment of two types of requirements, namely, minimum BMPs for high priority sites and discharge prohibitions. Permit section F.3.c.(5) requires Copermittees to enforce their stormwater ordinances for all commercial sites, including any new BMP requirements for high priority commercial facilities. Local stormwater ordinances in many Copermittee jurisdictions do not yet require the use of BMPs at existing facilities. Copermittees should review and revise these ordinances as necessary to actually implement and enforce this program. This revision should include a review of the Copermittee's authority to establish and enforce stormwater and non-stormwater discharge prohibitions at existing commercial facilities within their jurisdiction as per Permit sections A and B.

C. EDUCATION AND OUTREACH

Permit section F.4 requires that each Copermittee establish a stormwater education component targeting commercial facility owners and operators. This component has two objectives: to increase the knowledge of management and the workforce regarding the impacts of urban runoff on MS4s and potential BMP solutions *and* to change behaviors such that pollutant discharges to MS4s and the environment are reduced to the maximum extent practicable (MEP). Permit sections F.4.a and F.4.b outline general and specific topics, respectively, while strategies to achieve these goals are discussed in the *Model Program Guidance: Education and Outreach* document.

D. INSPECTION AND INVESTIGATION

Permit section F.3.c.(4) mandates that each Copermittee conduct site inspections of high priority commercial facilities within its jurisdiction. The inspection results will also provide additional information for updating the inventory records as required by Permit section F.3.c.(2).

Similarly, the need to inspect a commercial facility may arise from a complaint of an illegal discharge or connection at the site.

1. Facility Inspections

(a) *Frequency of Inspection*

- (1) **High Priority Facilities.** Permit section F.3.c.(4) requires Copermittees to inspect high priority facilities *as needed* to ensure their compliance with Order No. 2001-01. However, some commercial categories may require more frequent periodic inspections than others. For example, some agencies, such as the Department of Toxic Substances Control, have targeted automotive repair and fleet maintenance as high priority categories for pollution prevention outreach. A Copermittee may choose to inspect these categorical sites on a more frequent basis while lowering the frequency for other categories.
- (2) **Other Commercial Facilities.** Although not specified in Order No. 2001-01, non-inventoried facilities are still subject to its requirements. Inspections may be warranted based on complaints received about the facility, the detection of high levels of pollutants downstream from the site, or periodic inspections of wastewater discharge sewerage, e.g., grease interceptors in restaurants.

(b) *Inspection Methods*

- (1) **Goal.** A Copermittee inspects a commercial site to determine if its facilities and operations are in compliance with the Permit, i.e., to ensure that runoff pollutants have been reduced to the MEP standard. To accomplish this goal, the Copermittee may provide educational materials and technical or regulatory updates, review stormwater pollution prevention plans (SWPPPs) and provide

feedback about BMPs appropriate for a given activity, and identify any illegal discharges and connections to the MS4.

- (2) **General Procedures.** An inspection generally involves three stages. First, the commercial inventory can be reviewed to ascertain the location of the site and its proximity to receiving waters or to environmentally sensitive areas (ESAs); the principal activities and associated pollutants; and the facility's regulatory compliance history. Next, if possible, an unannounced visit is made to the site to assess the effectiveness of stormwater BMPs and to confirm site-specific data for the commercial inventory. Enforcement actions are taken as needed (see Section VII of this document for more details). Finally, back in the office the inventory database is updated, and intra- and/or inter-agency referrals are made as needed.

2. Investigation of Complaints Involving Commercial Sites

Permit section F.5.d requires that each Copermittee eliminate all illegal discharges, connections, and discharge sources to its MS4. Complaints of illegal discharges from a commercial site may be reported by the public or another agency, or they may arise from reported exceedances of water quality standards as detected by dry-weather monitoring. The Copermittee should have an investigative procedure to identify the discharge and its source, to provide input to commercial facility owners and operators, and to follow up the complaint investigation to verify compliance. Depending on its ordinance, a Copermittee may require the owner and/or operator to develop and implement a SWPPP.

3. Self-Audit Checklist (Optional)

Copermittees may choose to provide the facility operator with a sample self-audit checklist. The checklist is helpful in orienting the operator to the basic components of future stormwater inspections. To promote consistency and agreement, the checklist should include the same basic components as those on the official inspection report form. However, the checklist is not all inclusive, and additional inspection components should be considered depending on the site's activities and resources.

The Industrial/Commercial Technical Workgroup plans to develop self-audit checklists as part of its on-going activities.

E. ENFORCEMENT

Order No. 2001-01 requires that each Copermittee develop an enforcement program to carry out the provisions of its Existing Commercial Facilities program element. Situations requiring such action may result from a routine inspection or complaint investigation of a commercial facility. Enforcement of stormwater pollution prevention requirements should be conducted by staff members with enforcement authority and, when necessary, by legal counsel. Enforcement procedures are discussed further in Section VII of this document.

F. MONITORING

Although not specified in section F.3.c of the Permit, a Copermittee should establish in its stormwater ordinance the authority to require an operator to monitor discharges quantitatively from non-compliant sites. Such requirements generally result from enforcement action taken against repeated commercial violators, particularly during mitigation of impacted sites.

Section IV. Establishment and Maintenance of Program Priorities

Copermittees must identify the types and locations of all high priority commercial facilities within their jurisdictions and establish program priorities and requirements accordingly. Specifically, Permit section F.3.c.(2) mandates that each Copermittee develop and maintain an inventory (preferably a watershed-based one to maintain consistency with other requirements in this Permit) of these sites. Using this inventory, a Copermittee can determine appropriate minimum BMPs, inspection frequencies, monitoring schedules, and site history.

This section presents a suggested methodology for the establishment of these priorities.

A. MINIMUM HIGH PRIORITIES

1. High Priority Commercial Categories

Permit section F.3.c.(2) designates the following commercial categories as presenting a high threat to water quality:

- Automobile mechanical repair, maintenance, fueling, or cleaning;
- Airplane mechanical repair, maintenance, fueling, or cleaning;
- Boat mechanical repair, maintenance, fueling, or cleaning;
- Equipment repair, maintenance, fueling, or cleaning;
- Automobile and other vehicle body repair or painting;
- Mobile automobile or other vehicle washing;
- Automobile (or other vehicle) parking lots and storage facilities;
- Retail or wholesale fueling;
- Pest control services;
- Eating or drinking establishments;
- Mobile carpet, drape, or furniture cleaning;
- Cement mixing or cutting;
- Masonry;
- Painting and coating;
- Botanical or zoological gardens and exhibits;
- Landscaping;
- Nurseries and greenhouses;
- Golf courses, parks, and other recreational areas/facilities;
- Cemeteries;
- Pool and fountain cleaning;
- Marinas; and
- Port-a-Potty [portable sanitary toilet] servicing.

2. Additional High Priority Sites

Permit section F.3.c.(2) further requires Copermittees to designate as high priority those facilities meeting one of the following descriptions:

- Other commercial sites/sources that the Copermittee determines may contribute a significant pollutant load to the MS4;
- Any commercial site or source tributary to a Clean Water Act (CWA) section 303(d) impaired water body, where the site or source generates pollutants for which the water body is impaired; and
- Any commercial site or source within or directly adjacent to or discharging directly to a coastal lagoon or other receiving water within an ESA (as defined in F.1.b(2)(a)vii of...[Order No. 2001-01]).

The following process is recommended in determining whether discharges from an existing commercial facility pose a high threat to water quality. *A Yes response to one or more of the following questions requires the Copermittee to classify the facility as high priority.*

(a) Does the commercial facility contribute a significant pollutant load to the Copermittee's MS4? According to Permit sections C.1 and C.2, "significant" pollutant loads are those that "cause or contribute to the violation of water quality standards." If a Copermittee determines that a discharge will cause or contribute to such a violation, the Copermittee must consider that the discharging facility is a high priority site, and effective BMPs must be instituted to achieve appropriate load reductions.

(b) Is the commercial facility tributary to an impaired water body listed in accordance with section 303(d) of the 1972 CWA? A facility is considered to be high priority only if it generates pollutants for which the water body is impaired. Such impairments and pollutants include, but are not limited to, coliform bacteria, sediment/siltation, nutrients, low dissolved oxygen, synthetic organic compounds, pesticides, eutrophication, copper, lead, zinc, total dissolved solids, cadmium, trash, and organic enrichment.

Copermittees must require the implementation of BMPs to decrease existing pollutant loadings from commercial sites tributary to 303(d)-listed water bodies. The degree to which such reductions are necessary is not specified in the Permit; Copermittees must make that determination. The following steps will assist Copermittees in conducting a general prioritization assessment:

- (1) Identify CWA section 303(d) impaired water bodies and the contaminants causing these impairments. A current listing of 303(d) water bodies in the San Diego Hydrologic Unit (HU) is included as Appendix B. This list also identifies the contaminant(s) for which each listing was established. It can be downloaded from the SWRCB web site at <http://www.swrcb.ca.gov/>.
- (2) Determine the commercial sites that are "tributary to" the 303(d)-listed water body. Because the term "tributary to" is not defined in the Permit

and has no prior CWA grounding, a reasonable working definition should be adopted by the Copermittee. The following is offered as suggested guidance in making this determination, but Copermittees must ultimately make their own determination and should consider all factors that they consider relevant.

In determining whether a site is “tributary to” a 303(d)-listed water body, Copermittees should consider whether discharges from that property reach (1) concrete storm sewers that discharge into the impaired water; (2) streams that reach the impaired water even during the dry season; or (3) ephemeral and seasonal streams or other natural channels likely to contribute significant pollutant loads to an impaired water at any time during the year. In the last instance, Copermittees may consider establishing an upstream distance (e.g., 1 mile) that is conservatively inclusive of these discharges.

- (3) Determine whether the commercial facility “generates pollutants for which the water body is impaired.” The discharge from the facility must contain the pollutant for which the receiving water is classified as a 303(d) body. Moreover, Copermittees should determine if the contaminant is present in discharges in sufficient quantity and/or concentration to have a reasonable potential to cause or contribute to an existing violation of a water quality standard.

If a facility meets these specific criteria, the facility must be treated as a high priority site.

Printed topographical maps or electronic geographical information system (GIS) mapping can assist in matching sites with watersheds.

(c) Is the commercial facility located within or adjacent to (i.e., within 200 ft.) a coastal lagoon or a receiving water body within an ESA, or does the facility discharge directly to these receiving waters? Such commercial facilities shall be classified as high priority sites. Determination of whether a site is subject to this requirement can be made using the following steps:

- (1) Identify all receiving waters within the following types of ESA:
 - i. CWA section 303(d) impaired water bodies. This requirement is similar to that of section IV.A.2.(b) above except that it applies only to commercial sites meeting the stricter criteria of “within or directly adjacent to or discharging directly to...” Copermittees should consider making a distinction in levels and types of BMP application because facilities closer or discharging directly to a 303(d) water body may have a greater potential to contribute to water-quality impairments than those which are simply “tributary to.”
 - ii. Areas of Special Biological Significance, as listed in the 1994 Water Quality Control Plan for the San Diego Basin:

- o City of Encinitas Marine Life Refuge (HU 904.5)
 - o Batiquitos Lagoon Ecological Reserve (HU 904.5)
 - o Blue Sky Ecological Reserve (HU 905.5)
 - o Buena Vista Ecological Reserve (HU 904.2)
 - o McGinty Mountain Ecological Reserve (HU 909.3)
 - o San Dieguito Lagoon Ecological Reserve (HU 905.1)
 - o San Elijo Ecological Reserve (HU 904.6)
 - o San Mateo Creek Wetland Natural Reserve (HU 901.4)
 - o Los Peñasquitos Marsh Natural Preserve (HU 906.1)
 - o Tijuana River National Estuarine Research Reserve (HU 911.1)
 - o Sweetwater Marsh National Wildlife Refuge (HU 909.1)
- iii. RARE (Rare, Threatened, or Endangered Species) Beneficial Use Water Bodies. The RARE beneficial use status applies to habitats necessary, at least in part, for the survival and successful maintenance of plant and animals species established under state or federal law as being rare, threatened, or endangered. A summary of water bodies within the SDRWQCB jurisdiction and designated with the RARE beneficial use status is provided in Appendix C.
- iv. Multi-Species Conservation Program (MSCP) Preserves.
- Permit section F.1.b.(a)vii specifically refers to “areas designated as preserves or their equivalent under the [MSCP] within the Cities and County of San Diego.” The MSCP is a cooperative effort among the County and 12 other local jurisdictions and agencies, such as the U. S. Fish and Wildlife Service and the California Department of Fish & Game. The program addresses the potential impacts of urban growth resulting in natural habitat loss and species endangerment, and it creates a plan to mitigate for the future potential loss of covered species and their habitat due to the direct impacts of future development within the MSCP area.
- Areas “equivalent” to the MSCP preserves include those designated under the Multiple Habitat Conservation Program (MHCP), a comprehensive habitat conservation planning process that addresses multiple species needs and preservation of native vegetation communities for the cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista.
- Several GIS maps showing existing and proposed MSCP boundaries are available from the San Diego Association of Governments (SANDAG) at <http://www.sandag.org/>. Likewise, MHCP maps will become available through SANDAG as they are developed.
- v. Other equivalent ESAs identified by the Copermittee. The existence of other ESAs should be considered in determining

program priorities, but determination of the specific types of areas that are applicable locally should be left to individual Copermittees.

- (2) Map the boundaries of inclusion. On a map, draw a line depicting a 200-foot buffer zone around the targeted water body. Any facility with property lines within this zone is potentially a high priority site.
- (3) Characterize the site discharge flow. Regardless of whether a commercial facility is within the buffer zone, the site is considered high priority only if the discharge (a) enters the targeted receiving water *and* (b) is not commingled with flows from other sites. In cases of limited resources, a Copermittee initially may designate as high priority all sites within 200 feet of an ESA.

Note. The water body might be affected by sites outside the buffer zone. For example, an outlying facility may discharge into a common conveyance running along an easement or crossing another property before discharging to the targeted water body. In this case, the facility might be classified as a high priority site if the discharge is not commingled.

B. DETERMINATION OF ADDITIONAL PRIORITIES

Although the Permit specifies minimum high priority commercial sites, section H.1.a.(4) further requires that prior to the February 21, 2002, submittal of their jurisdictional URMPs, Copermittees must conduct an initial prioritization to determine whether additional high priorities should be established. Since the designation of any category as high priority will necessarily result in the establishment of minimum requirements that must in turn be borne by the commercial sector, it is crucial that this designation be based on a sound and defensible methodology. Additionally, program priorities should be periodically re-evaluated to ensure that resources are appropriately allocated.

This section provides suggested guidance for determining initial program priorities and whether these priorities should be retained or others added in the future. Over time, monitoring or other data may provide support for the removal of a previously identified site³ from the Copermittee's high priority list. Sources of data and information that may be used individually or in combination to identify potential priorities are also described below.

1. Initial Prioritization (prior to submittal of Jurisdictional URMP)

Where possible, Copermittee prioritizations should focus on the identification of impacts, the pollutants of concern causing them, and the establishment of a nexus to commercial facilities. Copermittees will initially be limited in their ability to establish this nexus because little quantitative data currently exist to substantiate these conclusions. A greater initial reliance on qualitative sources of data and information will therefore be required. Locally collected data and information should generally be given higher priority. However, Copermittees should consider other sources, especially during their

³ Note: The priority ranking of mandated minimum high priority commercial facilities cannot be changed without a Permit amendment or other authorization from the SDRWQCB.

initial prioritization when availability will generally be lacking. Applicable data and information can generally be derived from a number of sources including the following:

(a) Review of monitoring results (including field screening). The Copermittees have conducted a wet weather monitoring program since 1993. Results of this program, as well as those of individual Copermittee dry weather field screening, may be useful in assessing initial program priorities. Additionally, Copermittees or other parties may have collected data within their jurisdictions or watersheds. Assessment of these data may also be useful in identifying potential priorities.

(b) Results of the non-stormwater discharge evaluation (Permit section B.3). Permit section B.3 requires that Copermittees evaluate categories of non-stormwater discharges currently exempted from the prohibitions of Permit section B.1. Results of this evaluation will provide important information as to whether these discharges may continue to be exempted. Because some of these sources are applicable to commercial areas, results will directly support further prioritization efforts by Copermittees.

(c) Review of complaints, violations, and field investigations. Most Copermittees have responded to stormwater complaints and other types of code compliance issues for many years. Depending on the availability of data, Copermittees may consider evaluating historical trends to identify types of recurring violations in commercial areas where problems have occurred most frequently. Interviewing field staff can also help to identify problem areas.

(d) Review of other anecdotal information (e.g., municipal staff street sweepers, trash collectors, or maintenance workers). Many municipal employees spend significant amounts of time outdoors performing their daily work activities. These workers often have extensive knowledge of the types and locations of recurring problems.

(e) Review of surveys (e.g., outreach surveys). Some surveys have been conducted to assess existing environmental conditions locally and elsewhere. While local information is preferable, surveys conducted in other areas may be of value in determining initial program priorities. Outreach surveys can also be useful because they provide an indication of the types of behaviors likely to be contributing to pollution problems.

Using these and other sources of data and information that the Copermittee determines are appropriate, an initial preliminary ranking of priorities should be conducted. Establishment of a matrix to compare activity or source categories with available data and information is recommended as a first step. Where possible, Copermittees should attempt to establish quantitative measures and consistent methodologies by which results can be evaluated.

2. Ongoing Prioritization Strategy

Regardless of the methods chosen by a Copermittee for its initial evaluation, program priorities should be reviewed periodically to ensure that they continue to reflect the best available data and information. In conducting these reviews, the following questions should be addressed:

- o Do the results support existing program priorities (continue)?
- o Do the results fail to support existing program priorities (discontinue)?
- o Do the results indicate that other priorities are needed (new listing)?

Based on these results, priorities should be amended as a more complete record is established.

Section V. Best Management Practice Requirements and Recommendations

This section provides a description of potential BMP options for each minimum high priority category. Particular BMPs are not advocated and are not presented herein as mandated minimums because their proper application is best determined by jurisdiction in the context of local program priorities. Copermittees must individually determine the specific BMPs they will use to meet their minimum requirements.

A. POLLUTION PREVENTION

Section F.3.c.(1) of the Permit indicates that each Copermittee shall implement pollution prevention methods in its Existing Commercial Facilities program and shall require their use by commerce where appropriate.

1. Benefits of Pollution Prevention

Pollution prevention comprises procedures and practices that eliminate or reduce the generation of pollutants at their source. In commercial operations, pollution prevention strategies enable the operator to reduce the volume of solid, liquid, and hazardous wastes, as well as the accompanying costs of storage, disposal, or treatment. Such strategies can be incorporated into the standard operating procedures of any commercial facility, whether a corporate chain store, a franchise, an independent shop, or a “mom ‘n’ pop” operation. Regardless of the size and complexity of the organization, managerial commitment, on-going employee training, and record keeping are essential to a successful pollution prevention program.

2. Elements of Pollution Prevention

The following pollution prevention principles apply to most commercial sites:

- o Use smaller quantities of toxic materials or substitute less-toxic materials.
- o Minimize the volume of cleaning water to decrease wastewater.
- o Provide signage to remind or instruct employees and customers.
- o Implement a spill response plan.
- o Segregate and recycle wastes.
- o Provide a schedule of preventive maintenance.
- o Train employees in pollution prevention initially and then periodically as needed.

3. Stormwater Pollution Prevention Plans

Permit section F.3.c *does not* require a SWPPP for each high priority facility. However, through its stormwater ordinance each Copermittee should retain the authority to require a SWPPP of any commercial facility within its jurisdiction, and operators of all commercial facilities should be encouraged to develop and implement a SWPPP.

Guidelines for developing a SWPPP are described in Section A of Water Quality Order No. 97-03-DWQ, *Water Discharge Requirements for Discharges of Storm Water*

Associated with *Industrial Activities Excluding Construction Activities*, issued by SWRCB.

B. MINIMUM BMPs FOR HIGH PRIORITY COMMERCIAL FACILITIES

1. Non-Structural BMPs

Non-structural BMPs consist of procedures and practices that prevent pollutants from entering stormwater or authorized non-stormwater discharges. Because of their low cost and simplicity, non-structural BMPs should be considered first in the development of a facility's BMP program. Many of these methods already may exist as part of the standard operating procedures for a site:

- o Good housekeeping;
- o Preventive maintenance;
- o Material handling and storage of significant materials;
- o Employee training;
- o Solid waste (non-hazardous) handling and recycling;
- o Record keeping;
- o Self inspection/quality assurance; and
- o Spill response plan.

2. Structural BMPs

Structural BMPs consist of specialized equipment, structural components, or engineered technologies that can be used when non-structural BMPs are ineffective. Because structural BMPs are site specific, the facility operator needs to evaluate each proposed use. Proper installation and regular maintenance of structural BMPs are imperative to their effectiveness. Examples are as follows:

- o Overhead coverage of outdoor work areas or chemical storage;
- o Retention ponds, basins, or surface impoundments that confine stormwater to the site;
- o Berms and concrete swales or channels that divert run-on and runoff away from pollutant sources;
- o Secondary containment structures; and
- o Treatment controls, e.g., infiltration devices and oil/water separators, to reduce pollutants in stormwater or authorized non-stormwater discharges.

3. BMP Standard

Order No. 2001-01 requires that BMPs be used to reduce pollutants in stormwater runoff *to the maximum extent practicable*.⁴ Copermitees are responsible for ensuring that facility operators implement appropriate BMPs to achieve the MEP standard.

⁴ Facilities classified as high priority **industrial** sites and subject to the statewide General Industrial Permit are required to reduce pollutants to technology-based standards utilizing best available technology economically achievable or best conventional technology.

4. Designated High Priority Commercial Facilities

Permit section F.3.c.(2) describes high priority commercial sites, as designated by the SDRWQCB, requiring a set of minimum BMPs. These sites have been listed in section IV. A.1 of this document, and the corresponding potential BMPs are presented in Appendix D.

A Copermittee may identify an unlisted facility as a high priority site. In such a case, the Copermittee should consider the following activities when assisting with or reviewing the BMP plan for this particular facility:

- o Loading/unloading;
- o Fueling;
- o Landscaping/grounds keeping;
- o Washing equipment and/or vehicles;
- o Cleaning and maintaining parking lots;
- o Storing significant materials;
- o Storing equipment and/or vehicles;
- o Cleaning and maintaining rooftops;
- o Storing solid wastes;
- o Discharging liquid wastes; and
- o Controlling pests.

Because the BMPs are site specific, not all of the aforementioned activities may pertain to a site. Additional BMP manuals should be consulted; examples are listed in the source list found in Appendix D.

5. Hazardous Materials Management

Many commercial facilities handle hazardous materials during different stages of operation. All hazardous materials and hazardous wastes must be handled, stored, or disposed of as required by all applicable local, state, and federal regulations.

For more information, facility operators should contact their County Hazardous Materials inspector or the County Hazardous Materials Division duty specialist at (619) 338-2231.

Operators of plant (flora) production facilities (greenhouses and nurseries) and certain non-plant-production operations (golf courses, pest control services, botanical or zoological gardens, cemeteries, parks, and recreational facilities) should contact the County Department of Agriculture, Pesticide Regulatory Program, at (858) 694-3122 for information regarding the storage and handling of hazardous materials and wastes.

Section VI. Inspections

Permit section F.3.c.(4) requires that each Copermittee conduct inspections of high priority commercial sites to ensure compliance with Order No. 2001-01 and pertinent local ordinances and permits. (High priority sites are described in sections IV.A.1 and IV.A.2 of this document.) The following guidelines are intended to provide consistency in inspection elements and procedures across jurisdictions. The forms presented in Appendix E may serve as a regional template that Copermittees, through on-going participation in the Industrial/Commercial Technical Workgroup, can revise and standardize during the development and implementation of their respective inspection programs.

A. PRE-INSPECTION PREPARATION (PROFILE)

Before visiting a facility, the inspector should review the existing commercial inventory to determine the site's primary commercial activity; the facility's proximity to water bodies; the components of its SWPPP, if applicable; and any history of complaints or regulatory noncompliance.

1. Information for Maintenance of the Inventory

Although not specified in Order No. 2001-01, the commercial inventory should describe the following:

- Name and address of the facility;
- SIC code;
- A narrative description of the principal commercial activity and associated pollutants; and
- Name of watershed and nearest water body.

If a commercial site can be inventoried as an industrial site, it should remain as part of the industrial inventory. See *Model Program Guidance: Existing Industrial Facilities* for more details.

2. Information Critical for the Inspection Program

The following information provides the inspector with a clearer definition of each high priority commercial facility.

- (a) Name of responsible party. To facilitate enforcement actions, notices of violation and other orders should be addressed to legally responsible individuals. For corporations, a corporate officer or manager with authority to sign documents may be identified; for partnerships, the general or principal partner will suffice. A duly authorized representative, such as the shop foreman, may sign and receive the notice or order, thereby acknowledging and assuming the responsibility for delivering the notice to the responsible parties.
- (b) History of the site. Over time, a facility's profile may include a history of complaints, noncompliance, or exceedances of water quality standards.

The results of inspection reports, namely, the type and location of violations, may be coded for electronic entry into the inventory database.

- (c) GIS maps. Depending of the available GIS layers, these mapping tools can show the proximity of the site to water bodies, including 303(d) and other priority bodies, as well as to major tributaries or monitoring sites.
- (d) SWPPP. Although Order No. 2001-01 does not require SWPPPs for commercial facilities, it is recommended that each Copermittee, through its local ordinance, reserve the authority to require any facility to develop, implement, and maintain a SWPPP.

B. THE SITE VISIT

1. Approach to the Site

Before entering the facility grounds, the inspector should make note of the following:

- (a) Nearby conveyances or water bodies;
- (b) Visible discharge points along perimeter of the site, including pipes opening into street curbs or catchment basins;
- (c) Outdoor areas of activity, such as loading, fueling, or waste storage; and
- (d) Signs of recent additions or remodels that may indicate a change in commercial activity.

2. The Management Office

After introductions, the inspector can obtain needed information from this initial contact with the facility operator:

- (a) Update of information for the commercial inventory, including changes in ownership or operations;
- (b) Clarification of observations noted before entering the facility, especially suspected illegal connections (if a SWPPP is maintained, any changes in activities, materials, or physical structures should be reflected in the SWPPP); and
- (c) Review of the SWPPP, if applicable, which can include these elements:
 - (1) Site map showing the facility's property line and discharge points, layout of buildings and areas of outdoor activities, and shop or work stations with floor drains⁵;
 - (2) List of activities, types of pollutants, and existing non-structural and structural BMPs to reduce these pollutants in stormwater discharge to the MEP standard;

⁵ All interior floor drains should be plumbed to the sanitary sewer. To check for a possible illegal connection, an inspector can run potable water through the suspect drain and then check for visible discharges outdoors, including inside catchment basins.

- (3) Pollution prevention methods;
- (4) Description of type and location of non-stormwater discharges; and
- (5) Inventory of materials, including storage and loading/unloading areas.

(For a more complete description of SWPPP elements, please refer to the statewide General Industrial Permit, Order No. 97-03-DWQ. Copermittees are encouraged to establish and adopt standard SWPPP requirements through continued involvement with the Existing Industrial/Commercial Facilities Technical Workgroup.)

3. Facility Walk-through With Operator, Manager, or Shop Supervisor

The site map should be used to access areas in which commercial activities are exposed to precipitation, thereby increasing the risk of pollutants entering stormwater. Attention should also be paid to run-on and runoff in these areas, as well as to pollution prevention measures. From the walk-through, an inspector can assess the following:

- (a) Accuracy of site map, commercial activities, materials list, and SWPPP;
- (b) Confirmation of additions or changes observed while approaching the facility;
- (c) Evidence of illegal discharges, i.e., on-going leaks or recent spills;
- (d) Detection of illegal connections, e.g., sump drains or floor drains discharging to the MS4; and
- (d) Effectiveness of BMP implementation in each area of commercial activity.

4. The Inspection Report

Sample stormwater inspection report forms are provided in Appendix E. Copermittees, environmental managers, and consultants have expressed a need to develop and use a standard inspection report form to ensure consistency across jurisdictions. In addition, self-audit checklists for facility operators would be based on such an inspection report. A standard inspection report, if feasible, will be developed further by the Existing Industrial/Commercial Facilities Technical Workgroup.

The inspection report should contain at least the following five sections:

- (a) General information to update the inventory;
- (b) Review of the SWPPP, if applicable;
- (c) Assessment of BMP implementation;
- (d) Documentation of violations and time frame for correction; and
- (e) Signature and acknowledgment of receipt.

Copermittees may choose to issue a separate notice of violation rather than incorporate it into the stormwater inspection report. *Section VII of this document provides more detailed guidelines concerning enforcement action.*

C. POST-VISIT ACTIVITIES

In the office, the inspector can update the inventory records and make referrals, as needed, to other departments or agencies.

As mentioned previously, information gathered from inspections or investigations can be coded for input to a Copermittee's electronic inventory database. For example, violations can be grouped by *type*: illegal discharge, illegal connection, and littering. An illegal discharge violation could be further classified by *substance*, such as grease/oil, sewage, heavy metals, pesticides, and detergents, while an illegal connection could be identified by *location* (paint booth, dumpster area, material storage yard, mixing area, wash racks, etc.) or by *facility* (sump drain, hand-wash sink, parts cleaning unit, floor drain, etc.). When incorporated into inspection report forms and data entry procedures, such coding could allow for greater grouping and retrieval of data, thereby providing information for program planning, e.g., increased frequency of inspection or focus of outreach efforts to specific commercial operators.

Section VII. Enforcement

A. OBJECTIVES OF AN ENFORCEMENT PROGRAM

Section F.3.c.(5) of Order No. 2001-01 requires that each Copermittee enforce its stormwater ordinance for all commercial sites and sources as necessary to maintain compliance.

The Copermittee's inspectors and staff members with enforcement authority will conduct enforcement action against commercial facility owners and operators failing to comply with the requirements specified in Order No. 2001-01 and their applicable ordinances. The inspectors, in accordance with the Copermittee's existing procedures for recording violations, will document properly each observed violation. Depending on the severity of the violation, enforcement can range from a verbal warning to large fines. In general, a Copermittee's enforcement program should strive to accomplish the following goals:

- To educate the regulated community;
- To promote compliance of the laws and regulations within the regulated community;
- To return violators to compliance in a timely manner;
- To initiate and conclude enforcement activities in a timely manner;
- To penalize violators, as appropriate, and to deprive violators of any significant benefit gained from violations;
- To prevent any business from having an unfair business advantage through non-compliance; and
- To treat similar facility owners and operators equally and consistently with regard to the same types of violations.

B. PROCEDURES FOR CORRECTIVE AND ENFORCEMENT ACTIONS

Copermittee inspectors should conduct follow-up inspections to determine if corrective actions have been taken in accordance with the Copermittee's ordinances and minimum BMP requirements. Escalating enforcement steps, providing flexibility for the inspectors to establish appropriate compliance time frames on a case-by-case basis, should be used as needed to ensure compliance.

If a significant and/or immediate threat to water quality is observed by a Copermittee's inspector, action should be taken to require the facility owner and/or operator to immediately cease the discharge. The threat to water quality shall be assessed by inspectors for runoff from a commercial site that will not be reasonably controlled by the protective measures in place or if a failure of BMPs is resulting in the release of pollutants to a degree that may be degrading water quality. The typical progressive enforcement steps that each Copermittee should apply to the inspection enforcement program are as follows:

- (a) Verbal warnings;
- (b) Written warnings;

- (c) Suspension, revocation, or denial of permits, if applicable;
- (d) Additional penalties and fines; and
- (e) Civil and/or criminal court actions.

A discussion of these measures is provided below. These measures are just some of the tools a Copermittee may use to enforce its permit and ordinance requirements.

1. Verbal Warnings

A common initial method of requesting corrective action and enforcing compliance is a verbal warning from the Copermittee's inspector to the commercial facility owner and/or operator. Verbal warnings are often sufficient to achieve correction of the violation, often while the inspector is present at the facility. After notifying the owner or operator of the violation, the inspector should document the violation and notification in the inspection file. A specific time frame for correcting the problem and a follow-up inspection date should be documented by the inspector. In judging the degree of severity, the Copermittee inspector may also take into account any history of similar or repeated violations at this facility.

2. Written Warnings

If the deficiency noted in a verbal warning is not corrected by the follow-up inspection or if the severity of the violation is such that a verbal warning is not strong enough, a written notice of violation should be issued describing the infraction that is to be corrected and the time frames for correction and a follow-up inspection. A copy of the notice should be given to the operator or authorized representative and placed in the active inspection file. If the violation is corrected to the satisfaction of the inspector on re-inspection, the inspector will document compliance in the inspection file.

3. Suspension, Revocation, or Denial of Permits

For those Copermittees implementing a stormwater permit program or its equivalent, it may be appropriate to suspend or revoke such permits in severe cases of non-compliance or significant discharges. Copermittees and their legal counsel should consider developing criteria and procedures in their respective permit-issuing program to implement this enforcement tool.

4. Additional Penalties or Fines

Because violations vary in threat to water quality, Copermittees may consider utilizing stormwater field citations for infractions or misdemeanors. Like traffic violations, the penalty for a stormwater infraction can be relatively minor for a first offense. Repeated violations could result in escalating fines or misdemeanor charges. Again, Copermittees and their legal counsel should consider including this tool in their enforcement program.

5. Civil and/or Criminal Court Actions

As a final resort, the Copermittee may use civil and or criminal court actions under the State Porter Cologne Water Quality Act or the Federal Clean Water Act, which may result in significant fines levied upon the non-compliant responsible parties.

C. RESPONSIBLE PARTIES

The following paragraphs describe situations that may be encountered by an inspector. Copermittees should consult with their legal counsel to ensure that their respective stormwater ordinances account for these and similar situations.

Sometimes an illegal discharge to a Copermittee's MS4 can be traced to a commercial operation. In this case, the facility owner or operator would be considered the responsible party. When discharges from several facilities are commingled, the discharges usually can be traced to the non-compliant facilities. Again, each facility owner or operator is considered a responsible party.

At times an illegal discharge from a facility can result from work performed by a contractor. In such cases, the contractor is considered the discharger. However, the facility owner or operator would also be responsible for illegal discharges from the facility. Contractual agreements should not release parties from responsibility for violations of the local stormwater ordinance.

Commercial sites, such as strip malls, consist of several facilities leasing buildings or space from a commercial landlord. In general, the facility operator is responsible for all activities, including maintenance, associated with the business. The landlord often assumes responsibility for equipment and services, such as the HVAC system and trash removal service, shared by several lessees. When investigating a stormwater violation, e.g., an illegal connection to the MS4, the Copermittee's inspector may need to determine whether the facility operator or commercial landlord is responsible. Or, a Copermittee may decide to hold both parties responsible as discharger (operator) and property owner (landlord).

Section VIII. Program Effectiveness

Assessing the performance of Copermittee program elements and the specific BMPs that comprise them is crucial to the successful implementation of a comprehensive receiving water pollution reduction program. This concept is addressed in Permit Section F.7.a, which requires that each Copermittee develop a long-term strategy for assessing the effectiveness of its individual Jurisdictional URMP. The effectiveness of each of the Copermittee's individual program elements, including the Existing Commercial Facilities Component Element, must accordingly be measured, assessed, and reported as part of each Jurisdictional URMP Annual Report. Permit Section J.2.i further requires that Copermittees collaboratively develop measures for, and track the long-term effectiveness of, the Watershed URMPs in which they participate.

The effectiveness of BMPs whether considered individually or collectively is ultimately measured over time by changes in the pollutant levels found in downstream receiving waters. Information collected through the Copermittees' wet and dry weather monitoring programs will be useful in identifying trends and assessing the effectiveness of their programs. However, Copermittees will likely not be able to rely on these data to assess the effectiveness of individual program elements or of BMPs that make up their overall program. The basis for measuring the overall effectiveness of Copermittee programs must therefore be a collective assessment of the effectiveness of the BMPs implemented within that program. As such, specific measures should be developed and tracked at both the programmatic and specific BMP level. A suite of measures, which allows for assessment on a variety of levels and time frames, should therefore be developed. These measures are generally divided into two types, direct and indirect.

Whether using direct or indirect measures of effectiveness, baseline conditions must be defined. All future comparisons showing improvements will be made relative to these baseline conditions. In addition, the largest incremental improvements in receiving water quality are often realized at the beginning of an implementation program. In the absence of a well-defined baseline, these improvements cannot be adequately measured.

A. DIRECT MEASURES

Direct measures are those that focus on characterizing the quality of water bodies receiving discharges from Copermittee MS4s or on assessing other parameters with an immediate or well-established nexus to changes in the quality of those waters. Examples of direct measurement include receiving waters monitoring, estimation of pollutant loadings from specified areas (catchments, municipalities, watersheds, etc.), and focused evaluations of structural BMPs. Direct measures generally include actual measurement or quantification of pollutants (e.g., reductions in concentrations of chemicals of concern) or of the amount of materials extracted or diverted by a BMP (e.g., through media filtration). Direct measures can generally be described according to the following categories.

1. Water Quality Measurement

The direct measurement of water quality, both with respect to receiving waters and discharges from Copermittee MS4s, is addressed through the Copermittees' Receiving Waters Monitoring Program (Permit Attachment B) and Dry Weather Analytical and Field

Screening Monitoring Program (Permit Attachment E). Results of these programs, as well as other relevant data collected by Copermittees or other parties, should be integrated into effectiveness assessment strategies. Permit Section F.7.a requires that the role of monitoring data in substantiating or refining the Copermittees' Jurisdictional URMP Effectiveness Component be addressed.

2. Waste Diversion (Non-Structural BMPs)

A number of program activities focus on removing or diverting pollutants or materials that might otherwise be introduced to receiving waters via the Copermittee's MS4. Examples include recycling, back lot sweeping, and conveyance facility cleaning. Such activities can be directly assessed by estimating or quantifying the contents of wastes recycled or collected, but, to be meaningful, evaluations should also consider the level of activity expended or other factors that may be relevant to the interpretation of results. For example, rather than quantifying only the amount of material collected through back lot sweeping, Copermittees should also report the amount per mile swept, the amount of staff hours spent on the activity, and any other quantifiable measure of effort.

3. Pollutant Reduction / Removal (Structural BMPs)

Copermittees may employ or require the use of a variety of structural controls (e.g., storm drain filters or overhead covering for outdoor storage areas) to minimize or to reduce the concentration of pollutants in discharges to their MS4. Evaluating structural controls may require the collection and analysis of materials collected or diverted from an MS4. For example, a direct measurement technique to assess the performance of a structural treatment BMP, such as a retention basin, would be the downstream collection and analysis of samples for pollutants of concern. Given the expense of collecting and analyzing water samples, most Copermittees will not have sufficient resources to measure directly the performance of all BMPs that are employed. Therefore, Copermittees should endeavor to develop statistically valid sampling protocols that will provide representative data for each of the BMP types they utilize. In some instances, photographs may also be valuable in documenting the functionality of structural source control BMPs (e.g., berms and secondary containment for waste oil storage).

B. INDIRECT MEASURES

Because direct measures can be difficult and expensive to obtain and because they often require long periods of time to fully assess, a variety of indirect measures are generally used to evaluate stormwater program effectiveness. Indirect measures are based on the assumption that the use of specific program activities is effective in decreasing stormwater pollution and therefore in protecting water quality. They are typically used to assess the performance of non-structural source control BMPs such as employee training and good housekeeping. As stated previously, tracking the level of effort expended during BMP implementation may often be required. Level of effort can be measured by quantifying the hours spent on a pollution prevention activity, the number of employees trained, the number of times a maintenance activity is conducted, or other similar measures.

Indirect measures typically focus on degrees of implementation or comparison to standards or goals rather than actual water quality assessment or measures of pollutant loading. By measuring the degree or success of implementation of BMPs, it may

therefore be possible to make inferences about water quality benefits. Indirect measures should be pursued in combination with more broadly focused direct measures, thus allowing Copermittees to prioritize limited resources, to conduct meaningful assessments on intermediate time frames, and to focus their efforts on particular BMPs and program elements.

Appendix A. Stormwater Permit Excerpts Relating to Existing Commercial Facilities

F.1. Land-Use Planning for New Development and Redevelopment Component

F.1.b. Modify Development Project Approval Processes

(2) Standard Urban Storm Water Mitigation Plans (SUSMPs)

Within 365 days of adoption of this Order, the Copermittees shall collectively develop a model Standard Urban Storm Water Mitigation Plan (SUSMP) to reduce pollutants and runoff flows from all new development and significant redevelopment projects falling under the priority project categories or locations listed in section F.1.b.(2)(a) below. Within 180 days of approval of the model SUSMP in the public process by the SDRWQCB, each Copermittee shall adopt its own local SUSMP, and amended ordinances consistent with the approved model SUSMP, and shall submit both (local SUSMP and amended ordinances) to the SDRWQCB.

Immediately following adoption of its local SUSMP, each Copermittee shall ensure that all new development and significant redevelopment projects falling under the priority project categories or locations listed in F.1.b.(2)(a) below meet SUSMP requirements. The SUSMP requirements shall apply to all priority projects or phases of priority projects which have not yet begun grading or construction activities. If a Copermittee determines that lawful prior approval of a project exists, whereby application of SUSMP requirements to the project is infeasible, SUSMP requirements need not apply to the project. Where feasible, the Copermittees shall utilize the 18 month SUSMP implementation period to ensure that projects undergoing approval processes include application of SUSMP requirements in their plans.

- (a) *Priority Development Project Categories - SUSMP requirements shall apply to all new development and significant redevelopment projects falling under the priority project categories or locations listed below. Significant redevelopment is defined as the creation or addition of at least 5,000 square feet of impervious surfaces on an already developed site. Significant redevelopment includes, but is not limited to: the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces. Where significant redevelopment results in an increase of less than fifty percent of the impervious surfaces of a previously existing development, and the existing development was not subject to SUSMP requirements, the numeric sizing criteria discussed in section F.1.b.(2)(c) applies only to the addition, and not to the entire development.*

- i. *Home subdivisions of 100 housing units or more.* This category includes single-family homes, multi-family homes, condominiums, and apartments.
- ii. *Home subdivisions of 10-99 housing units.* This category includes single-family homes, multi-family homes, condominiums, and apartments.
- iii. *Commercial developments greater than 100,000 square feet.* This category is defined as any development on private land that is not for heavy industrial or residential uses where the land area for development is greater than 100,000 square feet. The category includes, but is not limited to: hospitals; laboratories and other medical facilities; educational institutions; recreational facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; automotive dealerships; commercial airfields; and other light industrial facilities.
- iv. *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.
- v. *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), where the land area for development is greater than 5,000 square feet.
- vi. *All hillside development greater than 5,000 square feet.* This category is defined as any development which creates 5,000 square feet of impervious surface which is located in an area with known erosive soil conditions, where the development will grade on any natural slope that is twenty-five percent or greater.
- vii. *Environmentally Sensitive Areas: All development and redevelopment located within or directly adjacent to or discharging directly to an environmentally sensitive area (where discharges from the development or redevelopment will enter receiving waters within the environmentally sensitive area), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition.* Environmentally sensitive areas include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Resources Control Board (Water Quality Control Plan for the San Diego Basin (1994) and amendments); water bodies designated with the RARE beneficial use by the State Water Resources Control Board (Water Quality Control Plan for the San Diego Basin (1994) and amendments); areas

designated as preserves or their equivalent under the Multi Species Conservation Program within the Cities and County of San Diego; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. “Directly adjacent” means situated within 200 feet of the environmentally sensitive area. “Discharging directly to” means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands.

- viii. *Parking lots 5,000 square feet or more or with 15 or more parking spaces and potentially exposed to urban runoff.* Parking lot is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce.
- ix. *Street, roads, highways, and freeways.* This category includes any paved surface which is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
- x. *Retail Gasoline Outlets.* Retail Gasoline Outlet is defined as any facility engaged in selling gasoline.

[Sections F.1.a,F.1.c,F.1.d through F.2 are not included]

F.3.c. Commercial Component (Existing Development)

Each Copermittee shall implement a Commercial (Existing Development) Component to reduce pollutants in runoff from commercial sites. At a minimum the commercial component shall address:

- F.3.c.(1) Pollution Prevention
- F.3.c.(2) Source Identification
- F.3.c.(3) BMP Implementation
- F.3.c.(4) Inspection of Commercial Sites and Sources
- F.3.c.(5) Enforcement of Commercial Sites and Sources

F.3.c.(1) Pollution Prevention (Commercial)

Each Copermittee shall implement pollution prevention methods in its Commercial (Existing Development) Component and shall require its use by commerce, where appropriate.

F.3.c.(2) Source Identification (Commercial)

Each Copermittee shall develop and update annually an inventory of the following high priority threat to water quality commercial sites/sources listed below. (If any commercial site/source listed below is inventoried as an industrial site, as required under section F.3.b.(2) of this Order, it is not necessary to also inventory it as a commercial site/source).

- (a) Automobile mechanical repair, maintenance, fueling, or cleaning;
- (b) Airplane mechanical repair, maintenance, fueling, or cleaning;
- (c) Boat mechanical repair, maintenance, fueling, or cleaning;
- (d) Equipment repair, maintenance, fueling, or cleaning;
- (e) Automobile and other vehicle body repair or painting;
- (f) Mobile automobile or other vehicle washing;
- (g) Automobile (or other vehicle) parking lots and storage facilities;
- (h) Retail or wholesale fueling;
- (i) Pest control services;
- (j) Eating or drinking establishments;
- (k) Mobile carpet, drape or furniture cleaning;
- (l) Cement mixing or cutting;
- (m) Masonry;
- (n) Painting and coating;
- (o) Botanical or zoological gardens and exhibits;
- (p) Landscaping;
- (q) Nurseries and greenhouses;
- (r) Golf courses, parks and other recreational areas/facilities;
- (s) Cemeteries;
- (t) Pool and fountain cleaning;
- (u) Marinas;
- (v) Port-a-Potty servicing;
- (w) Other commercial sites/sources that the Copermittee determines may contribute a significant pollutant load to the MS4;
- (x) Any commercial site or source tributary to a Clean Water Act section 303(d) impaired water body, where the site or source generates pollutants for which the water body is impaired; and
- (y) Any commercial site or source within or directly adjacent to or discharging directly to a coastal lagoon or other receiving water within an environmentally sensitive area (as defined in F.1.b(2)(a)vii of this Order).

The use of an automated database system, such as Geographical Information System (GIS) is highly recommended, but not required.

F.3.c.(3) BMP Implementation (Commercial)

- (a) Each Copermittee shall designate a set of minimum BMPs for the high priority threat to water quality commercial sites/sources (listed above in section F.3.c.(2)). The designated minimum BMPs for the high threat to water quality commercial sites/sources shall be site and source specific as appropriate.
- (b) Each Copermittee shall implement, or require the implementation of, the designated minimum BMPs at each high priority threat to water quality commercial site/source within its jurisdiction. If particular minimum BMPs are infeasible for any specific site/source, each Copermittee shall implement, or require the implementation of, other equivalent BMPs. Each Copermittee shall also implement or require any additional site specific BMPs as necessary to

comply with this Order.

- (c) Each Copermittee shall implement, or require implementation of, additional controls for commercial sites or sources tributary to Clean Water Act section 303(d) impaired water bodies (where a site or source generates pollutants for which the water body is impaired) as necessary to comply with this Order. Each Copermittee shall implement, or require implementation of, additional controls for commercial sites or sources within or directly adjacent to or discharging directly to coastal lagoons or other receiving waters within environmentally sensitive areas (as defined in section F.1.b.(2)(a)(vii) of this Order) as necessary to comply with this Order.

F.3.c.(4) Inspection of Commercial Sites and Sources (Commercial)

Each Copermittee shall inspect high priority commercial sites and sources as needed. Based upon site inspection findings, each Copermittee shall implement all follow-up actions necessary to comply with this Order.

F.3.c.(5) Enforcement of Commercial Sites and Sources (Commercial)

Each Copermittee shall enforce its storm water ordinance for all commercial sites and sources as necessary to maintain compliance with this Order.

F.4. Education Component

Each Copermittee shall implement an Education Component using all media as appropriate to (1) measurably increase the knowledge of the target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) to measurably change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment. At a minimum the education component shall address the following target communities:

- Municipal Departments and Personnel
- Construction Site Owners and Developers
- Industrial Owners and Operators
- Commercial Owners and Operators
- Residential Community, General Public, and School Children
- Quasi-Governmental Agencies/Districts (i.e., educational institutions, water districts, sanitation districts, etc.)

F.4.a. All Target Communities

At a minimum the Education Program for each target audience shall contain information on the following topics where applicable:

- State and Federal water quality laws
- Requirements of local municipal permits and ordinances (e.g., storm water and grading ordinances and permits)
- Impacts of urban runoff on receiving waters
- Watershed concepts (i.e., stewardship, connection between inland activities and coastal problems, etc.)
- Distinction between MS4s and sanitary sewers
- Importance of good housekeeping (e.g., sweeping impervious surfaces instead of hosing)
- Pollution prevention and safe alternatives
- Household hazardous waste collection
- Recycling
- BMPs: Site specific, structural and source control
- BMP maintenance
- Non-storm water disposal alternatives (e.g., all wash waters)
- Pet and animal waste disposal
- Proper solid waste disposal (e.g., garbage, tires, appliances, furniture, vehicles)
- Equipment and vehicle maintenance and repair
- Public reporting mechanisms
- Green waste disposal
- Integrated pest management
- Native vegetation
- Proper disposal of boat and recreational vehicle waste
- Traffic reduction, alternative fuel use
- Water conservation

F.4.b. Municipal, Construction, Industrial, Commercial, and Quasi-Governmental (educational institutions, water districts, sanitation districts, etc.) Communities

In addition to the topics listed in F.4.a. above, the Municipal, Construction, Industrial, Commercial, and Quasi-Governmental (Educational Institutions, Water Districts, Sanitation Districts) Communities shall also be educated on the following topics where applicable:

- Basic urban runoff training for all personnel
- Additional urban runoff training for appropriate personnel
- Illicit Discharge Detection and Elimination observations and follow-up during daily work activities
- Lawful disposal of catch basin and other MS4 cleanout wastes
- Water quality awareness for Emergency/First Responders
- California's Statewide General NPDES Permit for Storm Water Discharges Associated with Industrial Activities (Except Construction).
- California's Statewide General NPDES Permit for Storm Water Discharges Associated with Construction Activities
- SDRWQCB's General NPDES Permit for Groundwater Dewatering

- 401 Water Quality Certification by the SDRWQCB
 - Statewide General NPDES Utility Vault Permit (NPDES No. CAG990002)
 - SDRWQCB Waste Discharge Requirements for Dredging Activities
 - Local requirements beyond statewide general permits
 - Federal, state and local water quality regulations that affect development projects
 - Water quality impacts associated with land development
 - Alternative materials & designs to maintain peak runoff values
 - How to conduct a storm water inspection
 - Potable water discharges to the MS4
 - Dechlorination techniques
 - Hydrostatic testing
 - Spill response, containment, & recovery
 - Preventive maintenance
 - How to do your job and protect water quality
-

F.5. Illicit Discharge Detection and Elimination Component

F.5.a. Illicit Discharges and Connections

Each Copermittee shall implement a program to actively seek and eliminate illicit discharges and connections into its MS4. The program shall address all types of illicit discharges and connections excluding those non-storm water discharges not prohibited by the Copermittee in accordance with Section B. of this Order.

F.5.b. Dry Weather Analytical Monitoring

Each Copermittee shall conduct dry weather analytical monitoring of MS4 outfalls within its jurisdiction to detect illicit discharges and connections in accordance with Attachment E of this Order.

F.5.c. Investigation / Inspection and Follow-Up

Each Copermittee shall investigate and inspect any portion of the MS4 that, based on dry weather analytical monitoring results or other appropriate information, indicates a reasonable potential for illicit discharges, illicit connections, or other sources of non-storm water (including non-prohibited discharge(s) identified in Section B. of this Order). Each Copermittee shall establish criteria to identify portions of the system where such follow-up investigations are appropriate.

F.5.d. Elimination of Illicit Discharges and Connections

Each Copermittee shall eliminate all detected illicit discharges, discharge sources, and connections immediately.

F.5.e. Enforce Ordinances

Each Copermittee shall implement and enforce its ordinances, orders, or other legal authority to prevent illicit discharges and connections to its MS4. Each Copermittee shall also implement and enforce its ordinance, orders, or other legal authority to eliminate detected illicit discharges and connections to it MS4.

F.5.f. Prevent and Respond to Sewage Spills (Including from Private Laterals and Failing Septic Systems) and Other Spills

Each Copermittee shall prevent, respond to, contain and clean up all sewage and other spills that may discharge into its MS4 from any source (including private laterals and failing septic systems). Spill response teams shall prevent entry of spills into the MS4 and contamination of surface water, ground water and soil to the maximum extent practicable. Each Copermittee shall coordinate spill prevention, containment and response activities throughout all appropriate departments, programs and agencies to ensure maximum water quality protection at all times.

Each Copermittee shall develop and implement a mechanism whereby it is notified of all sewage spills from private laterals and failing septic systems into its MS4. Each Copermittee shall prevent, respond to, contain and clean up sewage from any such notification.

F.5.g. Facilitate Public Reporting of Illicit Discharges and Connections - - Public Hotline

Each Copermittee shall promote, publicize and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s. Each Copermittee shall facilitate public reporting through development and operation of a public hotline. Public hotlines can be Copermittee-specific or shared by Copermittees. All storm water hotlines shall be capable of receiving reports in both English and Spanish 24 hours per day / seven days per week. Copermittees shall respond to and resolve each reported incident. All reported incidents, and how each was resolved, shall be summarized in each Copermittee's individual Jurisdictional URMP Annual Report.

F.5.h. Facilitate Disposal of Used Oil and Toxic Materials

Each Copermittee shall facilitate the proper management and disposal of used oil, toxic materials, and other household hazardous wastes. Such facilitation shall include educational activities, public information activities, and establishment of collection sites operated by the Copermittee or a private entity. Curbside collection of household hazardous wastes is encouraged.

F.5.i. Limit Infiltration From Sanitary Sewer to MS4/ Provide Preventive Maintenance of Both

Each Copermittee shall implement controls and measures to limit infiltration of seepage from municipal sanitary sewers to MS4s through thorough, routine preventive maintenance of the MS4. Each Copermittee that operates both a municipal sanitary sewer system and a MS4 shall implement controls and measures to limit infiltration of seepage from the

municipal sanitary sewers to the MS4s that shall include overall sanitary sewer and MS4 surveys and thorough, routine preventive maintenance of both.

[Section G not included]

F.6. Public Participation Component

Each Copermittee shall incorporate a mechanism for public participation in the implementation of the Jurisdictional URMP.

H. SUBMITTAL OF JURISDICTIONAL URMP DOCUMENT

The written account of the overall program to be conducted by each Copermittee within its jurisdiction during the five-year life of this Order is referred to as the “Jurisdictional URMP Document”.

1. Individual – Each Copermittee shall submit to the Principal Permittee(s) an individual Jurisdictional URMP document which describes all activities it has undertaken or is undertaking to implement the requirements of each component of the Jurisdictional URMP section F. of this Order.
 - a. At a minimum, the individual Jurisdictional URMP document shall contain the following information for the following components:
 - (4) Commercial (Existing Development) Component
 - (a) Which pollution prevention methods will be required for implementation, and how and where they will be required
 - (b) A completed watershed-based inventory of high priority commercial sites
 - (c) Which BMPs will be implemented, or required to be implemented, for high priority sites
 - (d) How BMPs will be implemented, or required to be implemented, for high priority sites
 - (e) Planned inspection frequencies for high priority sites
 - (f) Methods for inspection
 - (g) A description of enforcement mechanisms and how they will be used

Appendix B. 1998 Clean Water Act Section 303(d) List

Hydrologic Unit	Watershed	Major Water Bodies	Water Body Type	Pollutant / Stressor	Sources	Impaired Beneficial Uses	TMDL Priority
900.00	San Diego Bay	San Diego Bay; Shelter Island Yacht Basin (900.00)	B	Copper	Point / Nonpoint	Aquatic life	High
		San Diego Bay; Near Sub Base (900.00)	B	Benthic Comm. Effects, Sediment Toxicity	Point / Nonpoint	Aquatic life	High
		San Diego Bay; Near Grape Street (900.00)	B	Benthic Comm. Effects, Sediment Toxicity	Point / Nonpoint	Aquatic life	High
		San Diego Bay; Downtown Piers (900.00)	B	Benthic Comm. Effects, Sediment Toxicity	Point / Nonpoint	Aquatic life	High
		San Diego Bay; Near Switzer Creek (900.00)	B	Benthic Comm. Effects, Sediment Toxicity	Point / Nonpoint	Aquatic life	High
		San Diego Bay; Near Coronado Bridge (900.00)	B	Benthic Comm. Effects, Sediment Toxicity	Point / Nonpoint	Aquatic life	High
		San Diego Bay; Near Chollas Creek (900.00)	B	Benthic Comm. Effects, Sediment Toxicity	Point/ Nonpoint	Aquatic life	High
		San Diego Bay; San Diego Naval Station (900.00)	B	Benthic Comm. Effects, Sediment Toxicity	Point/ Nonpoint	Aquatic life	High
		San Diego Bay; Seventh Street Channel (900.00)	B	Benthic Comm. Effects, Sediment Toxicity	Point/ Nonpoint	Aquatic life	High
		San Diego Bay; North of 24th Street Marine Terminal (900.00)	B	Benthic Comm. Effects, Sediment Toxicity	Point/ Nonpoint	Aquatic life	High
901.00	San Juan	Aliso Creek, Mouth of (901.13)	E	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2	Medium
		Aliso Creek (901.13)	R	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2	Medium
		Pacific Ocean, Laguna Beach HSA (901.12)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Medium
		Pacific Ocean, Aliso HSA (901.13)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2	Low
		Pacific Ocean, Dana Point HSA (901.14)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2	Low
		San Juan Creek (Mouth) (901.200)	E	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low
		Pacific Ocean, Lower San Juan HSA (901.270)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low

Appendix B. 1998 Clean Water Act 303(d) List (Continued)

Hydrologic Unit	Watershed	Major Water Bodies	Water Body Type	Pollutant / Stressor	Sources	Impaired Beneficial Uses	TMDL Priority
901.00 (cont.)		Lower San Juan Creek (901.270)	R	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low
		Pacific Ocean, San Clemente HA (901.30)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low
902.00	Santa Margarita	Santa Margarita Lagoon (901.110)	E	Eutrophic	Point/ Nonpoint	Rec-1, Rec-2, Aquatic life	High
		Rainbow Creek (902.200)	R	Eutrophic	Point/ Nonpoint	Aquatic life	High
903.00	San Luis Rey	Pacific Ocean, San Luis Rey HU (903.00)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low
		Guajome Lake (903.110)	L	Eutrophic	Point/ Nonpoint	Aquatic life	Medium
904.00	Carlsbad	Pacific Ocean, Loma Alta HAS (904.10)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low
		Loma Alta Slough (904.100)	E	Eutrophic	Nonpoint	Aquatic life	Low
				High Coliform Count		Rec-1, Rec-2	
		Pacific Ocean, Buena Vista HA (904.20)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low
		Buena Vista Lagoon (904.210)	E	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2	Low
				Nutrients		Aquatic life	Medium
				Sedimentation/Siltation			
		Agua Hedionda Lagoon (904.310)	E	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low
				Sedimentation/Siltation		Aquatic life	Medium
		Pacific Ocean, San Marcos HA (904.50)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low
Pacific Ocean, Escondido Creek HA (904.60)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low		
San Elijo Lagoon (904.610)	E	Eutrophic	Point/ Nonpoint	Aquatic life	Low		
		High Coliform Count		Rec-1, Rec-2, Shellfish harvest, Fish consumption			
		Sedimentation/Siltation		Aquatic life		Medium	

Appendix B. 1998 Clean Water Act 303(d) List (Continued)

Hydrologic Unit	Watershed	Major Water Bodies	Water Body Type	Pollutant / Stressor	Sources	Impaired Beneficial Uses	TMDL Priority
905.00	San Dieguito	Pacific Ocean, San Dieguito HU (905.00)	C	High Coliform Count	Rec-1, Rec-2, Shellfish harvest	Rec-1, Rec-2, Shellfish harvest	Low
906.00	Mission Bay	Los Penasquitos Lagoon (906.100)	E	Sedimentation/Siltation	Point/ Nonpoint	Aquatic life	Medium
		Pacific Ocean, Scripps HA (906.30)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low
		Mission Bay (906.400)	B	Eutrophic	Point/ Nonpoint	Aquatic life	Medium
				High Coliform Count		Rec-1, Rec-2, Shellfish harvest	Low
				Lead		Aquatic life	Medium
		Famosa Slough & Channel (906.400)	E	Eutrophic	Nonpoint	Aquatic life	Medium
		Tecolote Creek (906.500)	R	Cadmium	Point/ Nonpoint	Aquatic life	Medium
				Copper			
Lead							
Zinc							
Toxicity							
High Coliform Count	Rec-1, Rec-2	Low					
907.00	San Diego	Pacific Ocean, San Diego HU (907.00)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low
908.00	San Diego Bay (Pueblo San Diego)	San Diego Bay, Lindbergh (908.210)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2	Low
		Chollas Creek (908.220)	R	Cadmium	Point/ Nonpoint	Aquatic life	High
				Copper			
				Lead			
				Zinc			
				Toxicity			
High Coliform Count	Rec-1, Rec-2	Low					

Appendix B. 1998 Clean Water Act 303(d) List (Continued)

Hydrologic Unit	Watershed	Major Water Bodies	Water Body Type	Pollutant / Stressor	Sources	Impaired Beneficial Uses	TMDL Priority
909.00	San Diego Bay (Sweetwater)	San Diego Bay, Telegraph HAS (909.11)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2	Low
910.00	San Diego Bay (Otay)	Pacific ocean, Coronado HA (910.10)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2, Shellfish harvest	Low
911.00	Tijuana	Pacific Ocean, Tijuana HU (911.00)	C	High Coliform Count	Point/ Nonpoint	Rec-1, Rec-2	Low
		Tijuana River Estuary (911.110)	E	Eutrophic	Point/ Nonpoint	Aquatic life	Low
				Lead			
				Nickel			
				Trash			
				Thallium			
				Pesticides			
		High Coliform Count	Point/ Nonpoint	Aquatic life, Fish Consumption	Rec-1, Rec-2, Fish consumption, Shellfish harvest		
		Tijuana River (911.110)	R	Eutrophic	Point/ Nonpoint	Aquatic life, Fish Consumption	Low
				High Coliform Count		Rec-1, Rec-2, Fish consumption	
				Org. Enrichment/Low D.O.		Aquatic life	
				Pesticides		Fish consumption	
				Solids		Aquatic life	
Synthetic Organics	Aquatic life, Fish Consumption						
Trace Elements	Aquatic life, Fish Consumption						
Trash	Fish consumption						

Water Body Types

B=Bays and Harbors
 C=Coastal Shorelines
 E=Estuaries

G=Ground Water
 L=Lakes/Reservoirs
 O=Ocean and Open Bays

R=Rivers/Streams
 S=Saline Lakes
 T=Wetlands,Tidal

W=Wetlands and Freshwater

Appendix C: Designated RARE Water Bodies in the San Diego Region*

WATERSHED										
San Juan	Santa Margarita	San Luis Rey	Carlsbad	San Diegüito	Peñasquitos/ Mission Bay	San Diego River	Pueblo SD	Sweetwater	Otay	Tijuana
INLAND SURFACE WATERS										
San Mateo Creek	Santa Margarita River	San Luis Rey River	Buena Vista Creek	Santa Ysabel Creek	Carroll Canyon	San Diego River		Sweetwater River	Dulzura Creek	Tijuana River
San Onofre Canyon S. Fork	De Luz Creek	Pilgrim Creek		San Diegüito River	unnamed Trib	Sycamore Cyn		unnamed Trib	Jamul Creek	Cottonwood Creek
Las Flores Cr	Pueblitos Canyon			unnamed Trib	San Clemente Canyon	2 unnamed Tribs			unnamed Trib	
Piedra de Lumbre Canyon				San Bernardo Valley		Clark Canyon			Otay River	
Aliso Canyon						Spring Canyon				
French Canyon						Murphy Canyon				
RESERVOIRS AND LAKES										
	O'Neill Lake	Lake Henshaw		Lake Hodges		El Capitán Reservoir				Lake Barrett
				Sutherland Lake		Cuyamaca Reservoir				Morena Reservoir
COASTAL WATERS										
Pacific Ocean	Pacific Ocean	Pacific Ocean	Pacific Ocean	Pacific Ocean	Pacific Ocean	Pacific Ocean	Pacific Ocean	Pacific Ocean	Pacific Ocean	Pacific Ocean
Dana Pt. Harbor	Oceanside Harbor	S. Luis Rey R. mouth	Batiquitos Lagoon	Del Mar Boat Basin	Mission Bay	San Diego River mouth	San Diego Bay	San Diego Bay	San Diego Bay	Tijuana Estuary
Aliso Creek mouth	Santa Margarita Lagoon		San Elijo Lagoon	San Diegüito Lagoon	L. Peñasquitos Lagoon					
San Juan Creek mouth			Agua Hedionda Lagoon							
San Mateo Creek mouth			Buena Vista Lagoon							
San Onofre Creek mouth			Loma Alta Slough							

* Source: Water Quality Control Plan, San Diego Basin, Region 9, Chapter 2.

Appendix D. Best Management Practices (BMPs): Tables and Sources

The following tables describe potential BMP options for each high priority commercial facility. Particular BMPs are not advocated and are not presented herein as mandated minimums because their proper application is best determined by jurisdiction in the context of local program priorities. Each Copermitttee must determine the specific BMPs it will use to meet its minimum requirements.

The BMPs presented are commonly cited in print and electronic resources as reviewed by Industrial/Commercial Technical Workgroup participants. The emphasis is on *non-structural* BMPs as an initial step toward low-cost, feasible implementation. The need for designed or engineered *structural* BMPs must be determined by the Copermitttee and the facility owner on a site-by-site basis.

Finally, larger commercial facilities often include several activities described elsewhere in this document. For example, the operation of a zoological garden involves landscaping, pest control, food service, equipment and vehicle maintenance, and construction. Cross-references to these and other activities have been included in several BMP tables.

Table 1. Automobile Servicing

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Repair or maintenance	Employee training Preventive maintenance Spill response plan Signage	Changing fluids Replacing parts	Oil/grease Transmission fluid Antifreeze (coolant) Brake fluid Heavy metals: Cu, Zn, Cr, Ni, Pb	<ul style="list-style-type: none"> • Service vehicle indoors • Ensure floor drains are plumbed to sanitary sewer; if not, then cover drains • Place secondary drip pans under fluid receptacles • Keep absorbent materials/pads readily accessible in work areas • Segregate waste fluids and store in approved containers • Recycle fluids whenever possible • Dispose of hazardous wastes properly • Send soiled rags to laundry service or dispose of them properly
Emergency outdoor repairs				<ul style="list-style-type: none"> • Use tarp and drip pans under vehicles
Salvage area				<ul style="list-style-type: none"> • Drain fluids from “parts” vehicles upon arrival to the yard • Recycle oil, antifreeze, batteries, etc.
Cleaning	Run a “dry” shop Use non-caustic cleaning agents Replace chlorinated solvents with aqueous cleaning solutions			<ul style="list-style-type: none"> • Collect dust, grindings, and shavings at work stations • Dry sweep work areas before mopping • Dispose of mop water to sanitary sewer only • Power wash engines on paved, bermed surfaces equipped with sump drain or oil/water separator

Table 2. Airplane Servicing

Area or Activity	Pollution Prévention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Interior of maintenance building Vehicle maintenance	Employee training Signage Preventive maintenance Record keeping	Spills Discarded maintenance materials	Engine fluids Dirt Sediment	<ul style="list-style-type: none"> ▪ Conduct work inside maintenance building ▪ Provide underdrains that discharge to oil-water separator, then to sanitary sewer ▪ Use drip pans ▪ Keep spill towels and absorbents readily accessible ▪ Maintain disposal logs ▪ Conduct periodic inspections
Contained area outdoors Helicopter/aircraft fueling		Spills	Diesel fuel Gasoline Jet A Jet B AVGAS	<ul style="list-style-type: none"> ▪ Fuel indoors only ▪ Keep spill response materials readily accessible (use dry methods) and report spills promptly ▪ Conduct operations on AC or concrete surface ▪ Post written fueling procedures ▪ Provide berms/curbs/dikes in fueling area ▪ Cover/protect storm drains during fueling ▪ Conduct periodic inspections ▪ Conduct preventive maintenance of fueling equipment ▪ Provide secondary containment ▪ Provide absorbent materials on the fueling truck/island
Wash rack or pad Aircraft washing:		Pressure washing	Rinsate (engine fluids/sediment)	<ul style="list-style-type: none"> ▪ Confine washing to airport-approved wash rack ▪ Initially wipe down surfaces instead of rinsing

With oil/water separator				<ul style="list-style-type: none"> ▪ Operator BMP training ▪ Maintain oil/water separator ▪ Conduct periodic inspections of equipment ▪ Isolate area with berms ▪ Discharge rinsate into oil-water separator, then to sanitary sewer ▪ Dry-wash aircraft or dispense rinsate through oil/water separator into holding tank; dispense with certified waste hauler
Without oil/water separator				
Outdoor areas	Employee training	Spills	Retardant agents	<ul style="list-style-type: none"> ▪ Avoid hot-fueling ▪ Employee training ▪ Provide secondary containment for all fluids ▪ Keep spill response equipment readily accessible
Aircraft fire-fighting activities	Spill response plan		Engine fluids Fuel	

Table 3. Boat Servicing

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Repair and maintenance Slips Dry dock	Employee training Recycling oil, solvents, and coolant Substitute less toxic materials, e.g., propylene in place of ethylene glycol in coolant	Engine work Hull work Bilge care Inboard and outboard motors Fueling	Oil/grease Heavy metals COD Paint (Pb, tributyl Sn) Suspended solids Solvents Detergents Emulsifiers Oil/grease Fuels	<ul style="list-style-type: none"> • Routinely inspect fuel lines, gaskets, and hoses for leaks • Use drip pan or bag around oil filter when changing it • Spot clean engine parts frequently with solvent-damp rags • Clean heavily soiled parts on land • Segregate waste fluids in approved containers • Tune engine frequently • Use spill-proof pumps or vacuum tank for changing oil/transmission fluid • Scrape, sand, or strip surfaces in dry dock • Keep dry dock clean of waste and debris • Use tarp or drop cloth to catch chips • Use dustless sanders or enclosures • Use approved paint for hull bottom • Use drip pans under engine • Use oil-absorbent or digestion pillows/pads instead of emulsifier or detergent cleaners • Avoid pumping bilge water when it

				<ul style="list-style-type: none"> • is oily or casts a sheen • Avoid overfilling fuel tank • Provide fuel-absorbent pads or booms at dispenser • Store fuel in approved marine containers • Display U. S. Coast Guard oil-discharge placard if required
Cleaning	<p>Minimize volume of water for washing</p> <p>Substitute less toxic materials (vinegar or baking soda for acids & caustics; phosphate-free cleaners)</p>	<p>Pressure washing</p> <p>Fish wastes Litter</p>	<p>Suspended solids Paint Heavy metals</p> <p>BOD COD Nutrients</p>	<ul style="list-style-type: none"> • Cover catch basins with filter fabric or tarp to catch solids • Use temporary dikes to divert wash water to collection area • Vacuum wash water and discharge it to sanitary sewer • Rinse decks/hull more often with water only • Provide trash bags/ash trays • Collect floating debris from slip • Clean fish at sea or at dockside fish station

Table 4. Equipment Servicing

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
<p>General maintenance area or pad</p> <p>Equipment maintenance and repair</p>	<p>Employee training</p> <p>Spill response plan</p> <p>Record keeping</p> <p>Signage</p> <p>Preventive maintenance</p>	<p>Vehicle fluid spills or leaks</p> <p>Stormwater run-on and runoff</p>	<p>Transmission fluids</p> <p>Radiator fluids</p> <p>Oil/grease</p> <p>Fuel</p>	<ul style="list-style-type: none"> ▪ Train employees in proper cleanup procedures of spills and leaks ▪ Clean equipment often to prevent excessive grease/oil buildup ▪ Use drip pans for any leaking vehicle/equipment ▪ Complete all maintenance indoors or under cover ▪ Dry sweep daily, disposed as trash ▪ Maintain an organized inventory of materials used in the maintenance shop ▪ Drain oil filters before disposal or recycling ▪ Store cracked batteries in a non-leaking secondary container ▪ Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop ▪ Inspect the maintenance/repair area regularly for proper implementation of control measures ▪ Segregate, label, and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, equipment batteries, hydraulic, and transmission fluid ▪ Use absorbent materials on small spills

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
		Container spills or leaks	Oil, grease, solvents, degreasers, and other cleansers	<ul style="list-style-type: none"> ▪ Plug floor drains that are connected to the storm or sanitary sewer ▪ Install spill kits in maintenance bay
<p>Cleaning and washing pad</p> <p>Equipment cleaning and washing</p>	<p>Minimize volume of water for washing</p> <p>Recycle wash water</p> <p>Substitute less toxic soaps/cleaners</p>	Washed equipment particulates and debris	<p>Sediment, brake dust, metals, grease, oil, and other toxic materials</p> <p>Nutrients (e.g., phosphates)</p> <p>Suspended solids</p> <p>BOD</p> <p>COD</p> <p>Oil/grease</p> <p>Hydrocarbons</p>	<ul style="list-style-type: none"> ▪ Train employees on proper washing procedures ▪ Use dry cleaning methods such as wiping down and dry sweeping instead of washing with water ▪ Avoid washing parts or equipment outside ▪ If outdoors, direct wash water towards surrounding, existing vegetation ▪ Use phosphate-free biodegradable soaps and detergents ▪ Use less water for cleaning and washing ▪ Contain and recycle wash water ▪ Inspect cleaning area regularly ▪ Clean storm drains regularly, and stencil “No Dumping” ▪ Evaluate feasibility of constructing a bermed or covered wash area draining to the sanitary sewer ▪ Self-contain and/or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer or to a permitted disposal facility

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Equipment fueling area	Employee training	<p>Spills</p> <p>Accidental leaks</p> <p>Spills and leaks during deliveries</p> <p>Hosing or washing down fuel area</p>	Fuel, oil, grease, solvents, car battery acid, and coolant	<ul style="list-style-type: none"> ▪ Discourage “topping off” of fuel tanks ▪ Use absorbent materials on spills ▪ Install covered spill kits next to fueling area ▪ Use dry cleanup methods for fuel area ▪ Perform preventive maintenance on storage tanks to detect potential leaks before they occur ▪ Always use secondary containment, such as a drain pan or drop cloth, when fueling to catch spills/leaks ▪ Install “shut-off” valves on nozzles ▪ Provide a smooth, impervious surface (e.g., Portland cement concrete) rather than asphalt in fueling area ▪ Provide overhead cover for fuel dispensing area
Equipment storage lot		Equipment leaks	Fuel, oil, grease, solvents, battery acid, coolant, soil, and	<ul style="list-style-type: none"> • Dry sweep parking area regularly to reduce the accumulation of soils and other debris

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
			other debris	<ul style="list-style-type: none"> ▪ Use drip pans under all vehicles and equipment waiting for maintenance ▪ Use absorbent material to clean up spills, and for general cleaning rather than hosing down the area. Remove the absorbent material promptly. ▪ Clean storm drains regularly, and stencil inlets with “No Dumping”

Table 5. Automobile/Vehicle Body Repair or Painting

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs	
Receiving/storing vehicles		Leaks	Automotive fluids Grease	<ul style="list-style-type: none"> • Use drip pans • Wipe down greasy parts with rags • Perform work indoors • Recycle/reuse paints • Filter and reuse solvents • Dry water-based paints/wet sanding material and dispose in trash • Reuse brushes for water-based paints: rinse to a sanitary sewer • Confine work to approved, enclosed area equipped with vacuum hood and filter • Dry-sweep or vacuum dust and dispose to trash • Use appropriate, well-maintained equipment (e.g., high-efficiency paint sprayers, electrostatic spray guns, air-atomized spray guns, high-volume/low pressure and gravity-feed guns) • Collect and treat wastewater or remove as hazardous waste • Refer to Cal-OSHA guidelines and state & local hazardous waste laws • Use self-contained cleaning vat • Recycle cleaning fluid 	
Painting Stripping Cleaning	Minimize volume needed for the job	Over-mixing	Paint Solvents		
		Spills	Thinners		
Non-hazardous paint: Scraping or sandblasting, body filling, wet sanding	Preventive maintenance Employee training	Open work area	Particulates Settable solids		
		Drift (wind)	Paint chips/dust Sand Glass Stone Metals		
Paint booth		Leaks			
		Overspray			
Hazardous paint removal			Suspended solids		
Cleaning equipment		Rinsate from dust control			

Table 6. Mobile Automobile/Vehicle Washing

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Washing	<p>Employee training</p> <p>Use less toxic detergents, e.g., aqueous cleaners</p> <p>Use phosphate-free detergents</p> <p>Minimize water for washing</p>	<p>Vehicle body</p> <p>Vehicle engine</p> <p>Wheels: Acid-based cleaning</p> <p>Line or gasket leaks</p>	<p>Suspended solids</p> <p>pH</p> <p>Oil/grease</p> <p>Phosphates</p> <p>Heavy metals</p> <p>COD</p> <p>BOD</p>	<ul style="list-style-type: none"> • Cover storm drain grates or curb inlets • Locate wash pad away from storm drains • Use berms to divert wastewater to collection area • Collect wastewater (by vacuum) for recycling or disposal to sanitary sewer • Provide wastewater tank for wash water that cannot be disposed properly while on site

Table 7. Vehicular Parking or Storage Lots

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Daily maintenance Unauthorized vehicular repair Rainy season preparation (before Oct. 1)	Employee training Signage Spill response plan	Drift (wind) Leaks Illegal disposal of vehicle fluids	Litter Organic debris Oil/grease Automotive fluids Sediment Heavy metals	<ul style="list-style-type: none"> • Post signs prohibiting littering, dumping, and vehicle servicing • Provide trash containers in convenient locations • Spot clean fluid leaks • Dispose of oil-soaked absorbents as hazardous waste • Use street sweepers periodically • Manually clean inlets or use vacuum trucks

Table 8. Retail or Wholesale Fueling

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Dispensers Tanks	Employee training Signage Preventive maintenance Spill response plan	Spills from individual vehicles or tanker trucks	Fuels Oil/grease Heavy metals COD Litter	<ul style="list-style-type: none"> • Post “no topping off” signs • Use dry sweep methods • Keep spill response materials readily accessible • Maintain surfaces paved with approved impervious material (e.g., Portland cement concrete) • Provide design (berms or intercepting drains/sumps) for spill containment and to prevent run-on • Use oil/fuel absorbent booms/pads in catchment basins • Provide overhead coverage that drains stormwater away from dispensing areas • Conform to state laws for spill containment and overflow prevention • Provide automatic shut-off latches on nozzles as permitted by local regulations • Provide secondary containment around fuel truck during transfer—driver stays with truck • Provide secondary containment for outdoor storage areas

Table 9. Pest Control Services

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Storage Application Cleaning	Employee training Good housekeeping Signage Spill response plan Integrated pest management Preventive maintenance	Leaks Overspray Continual or excessive use of pesticides	Pesticides	<ul style="list-style-type: none"> • Comply with state and county pesticide handling regulations • Provide secondary containment for containers in storage • Use dry sweep methods • Keep spill response materials easily accessible • Apply when windy conditions are not expected • Avoid applying before irrigation or rainfall • Follow manufacturer’s instructions on label to prevent excessive concentrations, overspray, and leftover solutions • Maintain applicator equipment in good condition • Triple- or pressure-rinse empty containers • Use rinsate for making next batch • Use non-chemical methods (e.g., traps, sticky tape, hot-wire lamp, high-pressure water spray) whenever feasible • Consider using non-chemical methods along water bodies

Table 10. Eating and Drinking Establishments

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Dumpster	Employee training	Emptying containers	Oil/grease	<ul style="list-style-type: none"> • Clean dumpster and grease bin areas daily • Replace leaking or dirty dumpster • Reduce liquid waste in trash and double-bag trash to prevent leaks • Dry sweep whenever possible • Cover storm drain inlets before hosing down pavement • Use berms to divert wastewater to collection area • Collect wastewater (vacuum) and dispose to sanitary sewer • Stop spills at the source • Keep spill response materials easily accessible, including near the receiving door • Use wet-clean method: Use rags or absorbent to collect residue; then mop and collect wastewater; dispose to sanitary sewer • Properly maintain outdoor grease interceptors • Wash equipment indoors • Properly maintain all sinks • Contract with hood-filter-element cleaning service • (Outdoor wash area): Provide bermed
Tallow & grease bin	Signage		Pesticides	
Equipment cleaning	Spill response plan	Improper pesticide application	Sediment	
Sidewalks	Recycling	Leaks	Litter	
Parking lot	Preventive maintenance	Spills	Paints	
Loading/unloading		Pressure washing		
Exterior pest control				
Landscaping				

				<p>surface with slope toward drain connected to sanitary sewer</p> <ul style="list-style-type: none"> • Consider contracting with certified pest control operator • Properly collect and dispose of green waste from landscaping activities
--	--	--	--	---

Table 11. Mobile Carpet, Drape, or Upholstery Cleaning

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Storage Wastewater disposal	Employee training Preventive maintenance Adequate equipment Minimize water for washing	Illegal discharges Leaks	Suspended solids BOD COD Organic matter	<ul style="list-style-type: none"> • Dispose of wastewater to sanitary sewer at the job site or to a holding tank • Dispose of wastewater in tank to sanitary sewer at company headquarters or at an approved establishment • Maintain tanks, hoses, and fittings in leak-proof condition <p>Note: High-volume discharges can disrupt septic systems of private homes. Also, routine disposal of such discharges to a municipal sewer may require approval from the local wastewater district.</p>

Table 12. Cement Mixing or Cutting

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Headquarters:	Employee training	Spills	pH	<ul style="list-style-type: none"> • Provide overhead coverage for production area • Dry sweep daily and properly recycle or dispose of loose aggregate, mortar, dust, etc. • Dry sweep gutters, alleys, streets, sidewalks, etc. • Properly cover storm drains • Use berms to prevent run-on • Divert slurries to collection area or sedimentation basin • Shovel/vacuum slurries daily • Designate area where all rinsate is confined, collected, and disposed to sanitary sewer, dead-end sump, process treatment system, etc., or discharge rinsate to hole where water percolates/evaporates and solids are recovered for disposal
Production		Drift (wind)	Suspended solids	
Mixing	Good Housekeeping	Excess process water	Oil/grease	
	Record keeping		Heavy metals	
Job site:				
Pouring	Recycling		Hydrocarbons	
Cutting				
Exposed aggregate finishing				
Cleaning				
Washout area				

Table 13. Masonry

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Acid washing	Employee training	Rinsate	pH	<ul style="list-style-type: none"> • Properly cover storm drains • Use portable berms to divert wash water from storm drains • Dry sweep as much as possible • Rinse with alkaline soap or neutralize rinsate and direct it to sanitary sewer or landscaping, where approved • Store materials downgrade from storm drains/water bodies whenever possible • Cover stock piles with tarp • Reuse excess cement, grout, or mortar
Mixing	Minimize volume of materials	Excess material	Settable solids	
Cleaning	Recycling			
Storage				
Maintenance				

Table 14. Painting and Coating

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Storage	Employee training	Storage	Hydrocarbons	<ul style="list-style-type: none"> • Store paints and solvents in approved containers under cover and with secondary containment • Construct tarp or plastic-sheeting enclosures to prevent drift • Cover storm drains to protect from dust, chips, and rinsate
On the job	Spill response plan	Sanding/blasting	Solvents	
	Preventive maintenance		Oil/grease	
Mixing/applying			Metals	

Clean up	Recycling	Spills Rinsate	Suspended solids COD	<ul style="list-style-type: none"> • Dry sweep daily • Provide drop cloths and drip pans in mixing areas • Properly maintain spray applicator equipment • Rinse water-based paint to sanitary sewer • Filter, reuse, and recycle thinners and other solvents • Comply with Cal-OSHA and hazardous materials guidelines when working with lead or tributyl tin paint
----------	-----------	-------------------	-------------------------	---

Table 15. Botanical or Zoological Gardens and Exhibits

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Pest management	-----	-----	-----	<ul style="list-style-type: none"> • Refer to Table 9 (Pest Control Services) • Refer to Table 16 (Landscaping) • Refer to Table 10 (Eating and Drinking Establishments) • Refer to Tables 1 (Automobile Servicing), 4 (Equipment Servicing), 7 (Vehicular Storage and Parking Lots), and 8 (Retail and Wholesale Fueling)
Landscaping	-----	-----	-----	
Food service	-----	-----	-----	
Fleet and equipment maintenance	-----	-----	-----	

Construction	Employee training	Visitors	Sediment	<ul style="list-style-type: none"> • Plan soil-disturbance projects for dry season • Stabilize bare-soil slopes with appropriate materials • Stabilize project entrance to minimize tracking of sediment • Dry sweep paved surfaces daily • Cover stockpiles during rainy or windy conditions • Cover and berm storm drain inlets in or downgrade from project site • Dispose of animal liquid and solid wastes to sanitary sewer, landfill, or other method approved by appropriate local and state agencies (e.g., wastewater districts, vector control)
Waste removal	Preventive maintenance	Animals	Suspended solids	
	Recycling	Leaks	Trash	
	Good housekeeping	Erosion	Litter	
			Bacteria	
			Nutrients	

Table 16. Landscaping

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Watering/irrigation	Employee training	Irrigation run-off	Sediment	<ul style="list-style-type: none"> • Properly match water delivery rate with soil infiltration rate • Properly match pesticide/herbicide application rate with soil infiltration
Installation	Preventive maintenance	Rainwater runoff	Oil/grease	

<p>Construction</p> <p>Plant maintenance</p> <p>Nutrient management</p> <p>Pest/weed management</p>	<p>Good housekeeping</p> <p>Integrated pest management</p> <p>Recycling (composting)</p>	<p>Soil preparation</p> <p>Stockpiling</p> <p>Trimming, mowing, and pruning</p> <p>Excessive concentration or overspray</p> <p>Continual or excessive use</p>	<p>Organic matter</p> <p>Fertilizer</p> <p>Herbicides</p> <p>Pesticides</p> <p>Nitrogen salts</p> <p>Nitrogen</p> <p>Phosphorus</p>	<p>rate</p> <ul style="list-style-type: none"> • Maintain irrigation efficiency and uniform distribution • Periodically inspect sprinkler heads • Utilize automatic timers to minimize runoff • Cover stockpiles • Control soil erosion: straw or sandbag dikes, mulch, silt fences, biofilter strips, etc. • Keep leaves, twigs, and clippings out of drain inlets and catchment basins • Collect and recycle all green waste • Mix and apply chemicals according to manufacturer's instructions • Keep containers and spray nozzles in good condition • Avoid overspray or application outside the target area • Use manual methods along water bodies • Triple-rinse containers and use rinsate to make next batch • Properly dispose of empty containers • Use appropriate predator species, whenever feasible • Establish and maintain habitat for predator species
---	--	---	---	---

Table 17. Nurseries and Greenhouses

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Irrigation	Employee training	Overwatering	Sediment	<ul style="list-style-type: none"> • Utilize appropriate low-volume watering methods (e.g., drip-, sub-, & pulse-irrigation) to minimize water volume • Use collection tray benches for overhead spraying • Maintain nozzles, intermitters, and other application equipment in optimal condition • Consider tail-water recovery systems or subsurface drains for recycling irrigation water • Routinely conduct soil and plant tissue analysis to determine fertilizer needs • Utilize appropriate methods (e.g., timed application or combination slow-release & constant liquid fertilizer) to reduce excessive fertilization • Apply pesticides under appropriate weather conditions to prevent drift • Apply pesticides within target area to prevent overspray • Minimize use of pesticides causing local problems
Green waste disposal or reuse	Signage	Tail water	Fertilizers	
Fertilizer application	Preventive maintenance	Leachate	Pesticides	
Pesticide application	Recycling	Stormwater runoff	Suspended solids (roof coating)	
Construction	Integrated pest management	Drift (wind) Overspray		

				<ul style="list-style-type: none"> • Utilize mechanical methods (trapping, vacuuming, net sweeping, etc.) where possible • Divert roof runoff (stormwater only) to subsurface drains or conveyances via gutter/downspout system • Divert roof runoff (stormwater with coating sediment) to settling pond—effluent may not be discharged to conveyance or receiving waters without individual NPDES permit • Use shade cloths instead of roof coatings, whenever possible • Store green waste away from conveyances and water bodies • Remove or compost green waste properly to minimize stockpiling • Cover stockpiles during rainy weather
--	--	--	--	---

Table 18. Golf Courses, Parks, and Other Recreational Areas/Facilities

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Pest management	-----	-----	-----	<ul style="list-style-type: none"> • Refer to Table 9 (Pest Control Services)
Landscaping	-----	-----	-----	<ul style="list-style-type: none"> • Refer to Table 16 (Landscaping)
Food Service	-----	-----	-----	<ul style="list-style-type: none"> • Refer to Table 10 (Eating and

Rest rooms	Employee training	Visitors	Litter	Drinking Establishments) <ul style="list-style-type: none"> • Erosion control: Limit area of soil disturbance, plan work for non-rainy day, stabilize bare-soil slopes, cover stockpiles, etc. • Water after heavy traffic to minimize soil compaction • Post signs: No Dumping, No Littering, No Car Maintenance in Lots, Keep Pets on Leash, Stay on Trail, Aluminum Cans Only, etc. • Provide maps showing locations of restrooms, trash containers, recycling bins, etc. • Provide trash containers in parking lots, campgrounds, and other convenient locations • Dry sweep paved surfaces • Manually clean stormwater catchment basins and culverts • Plumb rest room floor drains to sanitary sewer, septic system, or properly installed subsurface drain if approved by local codes • Provide vegetated buffer strips along water bodies, if feasible • Divert irrigation flows to minimize pesticides/fertilizers from reaching water bodies • Consider using low-maintenance turf to minimize chemical needs • Recycle (compost) green waste • Recycle clippings via mulching
Parking lots	Signage	Trail maintenance	BOD	
Trails	Preventive maintenance	Vehicle leaks	COD	
Water bodies and wetlands	Recycling	Pets	Sediment	
Wash rack or pad		Boats	Bacteria/viruses	
Construction		Green waste	Oil/grease	
Mowing		Solid waste	Heavy metals	
Irrigation		Wash water	Manure	
		Rinsate	Pesticides	
		Erosion	Fertilizers	
			Detergents	

				<p>method</p> <ul style="list-style-type: none"> • Use predator species, if feasible, and provide appropriate habitat • Plumb wash rack drainage system to sanitary sewer or approved recycling system
--	--	--	--	--

Table 19. Cemeteries

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Pest management	-----	-----	-----	<ul style="list-style-type: none"> • Refer to Table 9 (Pest Control Services) • Refer to Table 16 (Landscaping) • Refer to Tables 1 (Vehicular Repair) and 4 (Equipment Repair) • Refer to Tables 13 (Masonry) and 14 (Painting and Coating) • Refer to Table 18 (Golf Courses, Parks, and Recreational Facilities)
Landscaping	-----	-----	-----	
Vehicle and equipment maintenance	-----	-----	-----	
Construction and maintenance	-----	-----	-----	
Wetlands and lots	-----	-----	-----	

Table 20. Pool and Fountain Cleaning

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Storage Filter maintenance Water chemistry	Employee training Preventive maintenance	Spills Leaks Backwashing Algal control Acid washing Draining	Chlorine pH Organic matter Diatomaceous earth Copper Silver	<ul style="list-style-type: none"> • Store chemicals in approved, leak proof containers • Discharge backwash wastewater to sanitary sewer via indirect connection (all public pools and private pools of homes connected to <u>municipal sewer system</u>) • Discharge backwash wastewater onto level ground and allow to infiltrate soil OR discharge it through filter fabric device (homes with private <u>septic systems</u>) • Allow pool water to set for several days until free chlorine level is below 1 ppm • Neutralize pool water (7.2 –8.0) after acid washing before discharging to stormwater conveyance system • Minimize use of heavy metal algicides

Table 21. Marinas

Area or Activity	Pollution Prevention	Potential Pollutant Source	Type of Pollutant	Recommended BMPs
Fueling station	Employee training	Spills	Fuel	<ul style="list-style-type: none"> • Post sign: “No Topping Off” • Provide employee assistance or post instructions at fuel dispenser • Provide readily accessible spill clean-up materials • Provide portable dikes around line connections to capture leaks • Minimize paved surfaces and maximize lawn/garden buffer strips along bulkhead • Provide conveniently located trash containers/ashtrays on shore • Provide conveniently located recycling bins, including battery bin • Designate an on-shore pet area • Provide covered, on-shore work area for major hull/engine maintenance • Provide/require dustless sanders or plastic enclosures for major hull refinishing work • Provide portable dikes and spill recovery materials in work area • Provide drop cloth under hull for on-shore work • Restrict over-water hull activities to “touch-up” work • Require drop cloth between hull and dock for minor work, where
Bulkhead	Signage	Runoff	Oil/grease	
Dry dock	Recycling	Hull maintenance	Phosphates	
Skips	Spill response plan	Drift (wind)	Paint	
Pump-out station	Preventive maintenance	Engine work	Suspended solids	
Solid waste disposal	Substitute aqueous cleaners for solvents	Bilge water	Sediment	
		Wash water	Solvents	
		Sewage	Litter & debris	
Record keeping	Organic matter			

				<p>feasible</p> <ul style="list-style-type: none">• Provide hazardous waste storage/disposal plan• Require fuel- or oil-contaminated bilge water to be collected as hazardous waste• Provide map showing location of restrooms, work areas, and pump-out facility• Provide dump station and wand attachment for portable toilets• Provide fish-waste station
--	--	--	--	--

BMP SOURCE LIST

1. Alameda Countywide Clean Water Program: *California Industrial/Commercial Stormwater Inspection Program Handbook*. Eisenberg, Olivieri, & Associates, Oakland, March 1996.
2. Bruneau, A. H. et al. : *Water Quality and Golf Course Superintendents*. North Carolina Cooperative Extension Service, Publication No. WQWM-154 (<http://www.ces.ncsu.edu/Turffiles/pubs>).
3. California Stormwater Quality Task Force: *Best Management Practice Handbook—Industrial/Commercial*. March 1993.
4. California Stormwater Quality Task Force. *Best Management Practice Handbook---Construction*. March 1993.
5. California State Water Resources Control Board: *Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities*, Water Quality Order No. 97-03-DWQ. Sacramento, 1997.
6. California Storm Water Task Force: *Retail Gas Stations BMPs*. 1987.
7. City of Los Angeles Department of Public Works—Bureau of Sanitation Storm Water Program: *Development Planning BMP Handbook, pt. B, Appendices*. February 2001.
8. California Department of Transportation (Caltrans): Sanitary/septic waste management, in *Construction Site Best Management Practices Manual*. November 2000.
9. Cities of Monterey and Santa Cruz: *Model Urban Runoff Program: A How-to Guide for Developing Urban Runoff Programs for Small Municipalities*. July 1998.
10. Federal Aviation Agency: Advisory circular 150/5230.
11. Hewitt, R.S.: *San Diego County BMPs for Erosion and Sedimentation Control and Storm Water Detention/Retention*. Mission Resources Conservation District (Fallbrook), 1998.
12. National Clean Boating Campaign: Fact sheets (<http://cleanboating.com/research>).
13. Office of Water: *Clean Marinas, Clear Value: Environmental and Business Success Stories*. US EPA Publication No. 841-R-96-003. Washington, DC, 1996.
14. Office of Water: *Best Nonpoint Source Documents: U.S. Environmental Protection Agency, January 2001* (<http://www.epa.gov/owow/nps/bestnpsdocs.html>).
15. Pierce County (Washington): *Stormwater Pollution Prevention Manual: A Guide to Best Management Practices for Industries, Businesses and Homeowners* (<http://www.co.pierce.wa.us/services/home/environ/water/>).
16. San Diego County Department of Environmental Health: *Stormwater Management Program: Best Management Practices Manual*, 1998.
17. Uniform Fire Code, Part 4, sections 2401-2405 and 5202.
18. US EPA: Boat cleaning and sewage facility management, in *National Management Measures Guidance*, Ch. 4.11 & 4.13 (<http://www.epa.gov/owow/NPS/MMGI>).

Appendix E. Sample Inspection Report Forms

The sample forms shown on the following pages illustrate just two ways in which inventory data can be incorporated into an inspection form. To facilitate the sharing of data and to promote consistency, Copermittees are encouraged to develop a regional standard inspection form through the activities of the Industrial/Commercial Technical Workgroup.

Stormwater Facility Inspection Report

Reason for Inspection: () Initial Inspection () Routine Inspection () Follow-up Inspection () Facility moved/change in information
() Complaint Investigation

NAME OF FACILITY _____ SITE ADDRESS _____

CONTACT NAME _____ PHONE _____ BUSINESS TYPE _____ SIC _____

Is the property owner different than the facility owner? () Yes () No If Yes, complete the following:

NAME _____ PHONE _____

MAILING ADDRESS _____

Is the facility covered under any other programs or permits? (Check all that apply) () None () Wastewater discharge

() Air quality () Hazmat business plan () Underground storage tanks () Aboveground storage tanks

() Fire department () Hazmat waste generator () Other _____

Is the facility covered under a stormwater permit? () Does not need coverage () No, but may need to be

() Individual () General: Does the facility have a SWPPP? () Yes () No

N/A= Not Applicable; PTNL=Potential for Pollutant Discharge: 1-Low potential; 2= medium potential; 3= high potential

ACTUAL Type of Discharge: 0= BMPs are effective; 1= BMPs are fairly/almost effective; 2 = BMPs are not effective; 3 = BMPs are not implemented. PEX=Pollutant Exposure, NSW=Non-Stormwater Discharge

AREAS OF ACTIVITY	N/A	PTNL	ACTUAL Type of Activity			REMARKS: Describe recommendations, requirements, and time to implement. Check box if remark is required.
			BMP	PEX	NSW	
A. Outdoor processing/manufacturing						()
B. Outdoor materials storage						()
C. Outdoor waste storage/disposal						()
D. Outdoor vehicle and equipment storage						()
E. Outdoor parking						()
F. Outdoor wash pad						()
G. Other (describe)						()

ADDITIONAL COMMENTS:

ENFORCEMENT: () None () Verbal Warning () Written Notice () Administrative Action () Adm. Penalties () Legal Action

Facility Representative (Signature): _____ Date _____ Facility Representative (Print Name): _____ Inspector Signature: _____ (Note: Adapted from Alameda Countywide Clean Water Program, February 1996)



County of San Diego

Stormwater Inspection Report

WATERSHED _____

EST.# _____

SPECIALIST _____

DATE _____

BUSINESS PHONE _____

CITY _____ ZIP _____

BUSINESS NAME _____

ADDRESS _____

The County of San Diego conducted an inspection/investigation of this site under authority of the San Diego County Stormwater Management Ordinance (No. 8394). This Ordinance addresses stormwater quality management and the discharge of pollutants to the County's Stormwater Conveyance System and Receiving Waters. Responsible parties are required to utilize Best Management Practices (BMPs) and other controls to prevent and eliminate these discharges.

VIOLATIONS (Check at least one)

-]....No violations noted at time of inspection/investigation
-]....Illegal discharge(s) of pollutants into the Stormwater Conveyance System or Receiving Waters (SDCC § 68.805 [a])
 - Hazardous Waste Liquid Waste Solid Waste Grease Other: _____
-]....Illegal connection(s) to the Stormwater Conveyance System or Receiving Waters (SDCC § 68.805 [b])
-]....Littering (SDCC § 68.805 [c])

REQUIRED ACTIONS (If a violation has been noted, check at least one, and issue **Corrective Action Form**)

-]....Correct the violation(s) noted above. Complete and submit the Corrective Action Form within _____ days.
-]....Discontinue illegal discharge(s) to the Stormwater Conveyance System or Receiving Waters.
-]....Eliminate illegal connection(s) to the Stormwater Conveyance System or Receiving Waters.
-]....Properly dispose of litter or debris.

RECOMMENDATIONS (Check all that apply)

-]....Stencil storm drain inlets **NO DUMPING** to remind employees and visitors of stormwater requirements
-]....Train employees on BMPs (including pollution prevention measures).
-]....Provide secondary containment to prevent discharges.
-]....Use dry cleaning methods (e.g., sweeping or vacuuming) rather than hosing down surfaces.
-]....Conduct additional BMPs as recommended _____

OBSERVATIONS

Responsible Party (Print Name) _____ Job Title _____
 Signature of Responsible Party _____ Date _____
 Signature of Specialist/Investigator _____ Dept. _____ Date _____