





# Contents

Section 1	Introduction.....	1
1.1	Regulatory Background.....	1
1.1.1	Orange County NPDES Permits.....	1
1.1.2	General Construction NPDES Permit.....	2
1.1.3	Water Quality Ordinances.....	2
1.1.4	Grading Ordinances.....	2
1.2	Glossary.....	2
Section 2	Requirements of Construction Projects.....	3
2.1	Applicability.....	3
2.2	General Requirements.....	4
2.3.1	Discharge Prohibitions on Construction Sites.....	5
2.3.2	BMP Implementation.....	5
Section 3	Best Management Practices (BMPs) for Construction Projects.....	7
3.1	BMP Implementation Requirements.....	7
3.2	Minimum Requirements.....	8
3.3	Site Management Requirements.....	8
3.4	Construction BMPs.....	10
3.4.1	Erosion Control.....	10
3.4.2	Sediment Control.....	11
3.4.3	Waste Management.....	13
3.4.4	Materials Management.....	13
3.4.5	Non-Stormwater Management.....	13
3.5	BMP Standard Plans.....	14
3.6	BMP References.....	14
Section 4	Documentation Requirements.....	15
4.1	Documentation Requirements for Construction Projects Subject to the General Construction Permit.....	15
4.2	Documentation Requirements for Other Sites (< 1 Acre).....	16
Section 5	Municipal Inspection of Construction Sites.....	17
5.1	Prioritization of Construction Site Threat to Water Quality.....	17
5.2	Inspection Frequencies.....	17
5.3	Inspection Responsibilities.....	18
5.4	Enforcement Actions.....	19
<b>Glossary.....</b>		<b>23</b>

## List of Tables

Table 2-1	General Requirements for Construction Water Quality Management...	4
Table 3-1	BMP Implementation Requirements for Construction Projects.....	7
Table 3-2	Minimum Requirements for All Construction Sites.....	8
Table 4-1	Documentation Requirements for Construction Projects.....	15
Table 5-1	Minimum Inspection Frequency of Construction Projects.....	18

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# Section 1

## Introduction

This *Construction Runoff Guidance Manual* (Manual) presents the construction requirements developed as part of the countywide Drainage Area Management Plan (DAMP) for compliance with the third term National Pollutant Discharge Elimination System (NPDES) municipal stormwater permits issued by the Santa Ana (Order No. R8-2002-0010, NPDES No. CAS618030) and San Diego (Order No. R9-2002-0001, NPDES No. CAS0108740) Regional Water Quality Control Boards (Regional Boards). This Manual additionally complements requirements in the County and City Water Quality Ordinances and Grading Ordinances. The information in this Manual is intended to assist applicants for building or grading permits to understand the water quality requirements during the construction phase of new development and significant redevelopment projects.

The goal of this Manual and the program described in the DAMP is to control pollutant discharges from construction sites. Water from construction sites can be a major transporter of sediment and other pollutants. Activities and materials used on construction sites may be a source of pollutants. These include paints, lacquers, and primers; herbicides and pesticides; soaps and detergents; wood preservatives; equipment fuels, lubricants, coolants, and hydraulic fluids; and cleaning solvents.

These pollutants can leak from heavy equipment, be spilled, or can be eroded by rain from exposed soil or stockpiles. Once released, they can be transported into the receiving waters of Orange County, where they may become available to enter aquatic food chains, cause fish toxicity problems, contribute to algal blooms, impair recreational uses, and degrade drinking water sources.

### 1.1 Regulatory Background

Various permits and ordinances have been adopted to address water quality impacts from urban and construction site runoff. Summarized below are the relevant regulations and their applicability to construction sites.

#### 1.1.1 Orange County NPDES Permits

In early 2002, the San Diego and Santa Ana Regional Boards issued NPDES permits that regulate stormwater discharge from municipal storm drain systems. The permits require the County and cities to implement a program to eliminate significant pollutant discharges from construction activities by requiring the implementation of appropriate Best Management Practices (BMPs) on all construction sites. BMPs are activities, practices, procedures, or devices implemented to avoid, prevent or reduce pollution of the municipal storm drain system and receiving waters.

### **1.1.2 General Construction NPDES Permit**

In 1999, the State Water Resources Control Board adopted Order No., 99-08-DWQ, *National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Stormwater Runoff Associated with Construction Activity (General Construction Permit)*. This permit was subsequently amended to include smaller construction sites. The General Construction Permit requires that construction sites with 1 acre or greater of soil disturbance or less than 1 acre but part of a greater common plan of development apply for coverage for discharges under the General Construction Permit by submitting a Notice of Intent (NOI) for coverage, developing a stormwater pollution prevention plan (SWPPP), and implementing Best Management Practices (BMPs) to address construction site pollutants.

The County's and Cities' construction site requirements are coordinated with, but separate from the General Construction Permit. The General Construction Permit applies regardless of whether a construction site discharges directly to receiving waters or to a municipal storm drain system. Inspections of construction sites by County/Cities or by Regional Board staff are separate and carry different enforcement actions/mechanisms.

### **1.1.3 Water Quality Ordinances**

The County and Cities in Orange County have adopted Water Quality Ordinances. The purpose of the Ordinances is the improvement of water quality and compliance with NPDES permit requirements for the control of urban pollutants. The ordinances prohibit non-stormwater discharges to the municipal storm drain system unless covered by the discharge exceptions and require that pollutants in stormwater be reduced to the maximum extent practicable using BMPs. The Ordinances require that potential pollution causing activities comply with the requirements in the DAMP. The Ordinances further provide a legal mechanism for enforcement actions to be taken.

### **1.1.4 Grading Ordinances**

Municipal Grading Ordinances set the rules and regulations for grading operations including operations preparatory to grading on private property. In addition to other requirements, the Ordinances require that a project owner, developer or contractor prepare erosion control plans (ECPs), obtain a grading permit, and implement and maintain erosion and sediment control BMPs. The Ordinances additionally describe County/City inspection and legal enforcement mechanisms.

## **1.2 Glossary**

A glossary of key terms used in this Manual is included at the end of the document.

# Section 2

## Requirements of Construction Projects

### 2.1 Applicability

All construction project proponents are responsible for implementing BMPs to assure compliance with the Water Quality Ordinance and, where applicable, the Grading Ordinance. A **construction project** for the purposes of these requirements is any site for which building or grading permits are issued and where an activity results in the disturbance of soil such as soil movement, grading, excavation, clearing, road construction, structure construction, or structure demolition; and sites where uncovered storage (stockpiling) of materials and wastes such as dirt, sand or fertilizer occurs; or exterior mixing of cementaceous products such as concrete, mortar or stucco will occur.

The DAMP establishes a tiered BMP implementation system as a requirement of building and grading permits during the construction process. This system identifies minimum BMP requirements that must be implemented by the responsible parties for construction projects. Responsible parties include the owner of the construction property, the construction contractor, and any other individual or entity performing construction activities.

Projects that do not meet the definition of a construction project described above are exempt from the minimum BMP requirements. Examples of projects that might be considered exempt would be similar to the following:

- Interior Remodeling
- Mechanical Permit Work
- Electrical Permit Work
- Tenant Improvements
- Signs
- Changes of Use within an Existing Building
- Temporary Mobile Home and Trailer Permits
- Minor Permits Accessory to an Existing Building (such as patio covers and decks).

Exemption from the minimum BMP requirements does not relieve the project owner or contractor from adhering to the basic discharge prohibitions identified in the Water Quality and Grading Ordinances (see Section 2.3.1).

## 2.2 General Requirements

Construction projects are required to comply with two interrelated sets of municipal directives with respect to water quality management: (1) compliance with applicable discharge prohibition requirements set forth in the Water Quality Ordinance to prevent unauthorized non-stormwater discharges, and (2) implementation of BMPs to the maximum extent practicable, in accordance with the DAMP and local agency requirements, to reduce contaminants in stormwater discharges.

In addition, construction projects that involve 1 acre or greater of soil disturbance must comply with the General Construction Permit. The discharge prohibitions and BMP requirements are consistent with and complementary to the requirements of the General Construction Permit. Therefore, compliance with the State's General Construction permit will typically lead to compliance with the County/Cities' BMP implementation requirements. However, the County or Cities may require Erosion Control Plans (ECPs) showing all BMPs for construction, even when a project disturbs less than 1 acre of soil and is not covered by the General Construction Permit (i.e., not a part of a larger common plan of development).

Table 2-1 shows the general requirements and expectations for construction projects based on size of land disturbance.

**Table 2-1  
General Requirements for Construction Water Quality Management**

Project Description	Water Quality Requirements
Construction Projects $\geq$ 1 Acre Soil Disturbance	<ul style="list-style-type: none"> <li>■ Apply for local grading or building permit</li> <li>■ Comply with grading or building permit and local ordinances</li> <li>■ Submit Notice of Intent (NOI) for General Construction Permit Coverage to SWRCB</li> <li>■ Prepare a SWPPP</li> <li>■ Implement SWPPP</li> <li>■ Implement BMPs as required by the County/Cities and the General Construction Permit</li> <li>■ Submit General Construction Permit Notice of Termination (NOT) to Regional Board at project conclusion</li> </ul>
Other Projects	<ul style="list-style-type: none"> <li>■ Apply for local grading or building permit</li> <li>■ Comply with grading or building permit and local ordinances</li> <li>■ Implement BMPs as required by the County/Cities</li> </ul>

### **2.3.1 Discharge Prohibitions on Construction Sites**

Without exception, discharges of stormwater from a construction site to the municipal storm drain system or receiving waters are prohibited if the discharge contains pollutants that have not been reduced to the maximum extent practicable through the implementation of BMPs. In general, construction activities require the implementation of a combination of BMPs to control erosion and sediment transport, and pollutants from materials and waste management storage and activities.

Non-stormwater discharges from a construction site to the municipal storm drain system or receiving waters are prohibited. Exceptions to prohibitions of non-stormwater discharges include (a full list is available in the Water Quality Ordinance):

- Discharges composed entirely of stormwater, or
- Discharges for which the discharger has reduced to the maximum extent practicable the amount of pollutants through implementation of BMPs, or
- Discharges from certain activities that may be present on a construction site including landscape irrigation, diverted stream flows, rising groundwater and de minimis groundwater infiltration to the municipal storm drain system, passive foundation drains, and flows from riparian habitats and wetlands.

### **2.3.2 BMP Implementation**

Construction project owners, developers, or contractors must implement the BMP requirements in the DAMP or equivalent measures, methods, or practices. Proper selection of BMPs depends on numerous factors that are specific to individual sites and activities, and therefore the DAMP does not advocate or require the use of particular practices unless the County/City determines that BMPs implemented by the project proponent are not adequate to prevent discharges of pollutants. In that case, implementation of specific BMPs, additional BMPs, and/or other controls may be required. BMPs are described more fully in Section 3.

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# Section 3

## Best Management Practices (BMPs) for Construction Projects

This section presents construction stormwater management requirements and required temporary construction site BMPs. Permanent post-construction BMPs are not addressed in this document. These requirements can be found in the Model Water Quality Management Plan (WQMP), Exhibit 7.II in Section 7 of the DAMP.

### 3.1 BMP Implementation Requirements

All construction projects must implement BMPs to prevent or reduce pollutant discharges into the municipal storm drain system or receiving waters. The implementation requirements depend on size of disturbed soil area, and in the Santa Ana Permit area, proximity to Areas of Special Biological Significance (ASBS—see Glossary).

Based on the size of disturbed soil area and location of construction sites, two categories of BMP implementation have been identified<sup>1</sup>. These categories are described in Table 3-1 and correspond to priorities that the County and Cities assign to construction sites as discussed further in Section 5.1.

**Table 3-1**  
**BMP Implementation Requirements for Construction Projects**

Site Area	Priority	BMP Requirements
Total Disturbed Soil Area <1 Acre (except as noted below)	Low	<ul style="list-style-type: none"> <li>■ Meet minimum requirements (Section 3.2)</li> <li>■ Implement all appropriate Construction BMPs (Section 3.4)</li> </ul>
Total Disturbed Soil Area ≥1 Acres (covered by General Permit)  OR  Within the Santa Ana Regional Board jurisdiction where the total Disturbed Soil Area is <1 Acre and tributary to and/or within 500 feet of an ASBS	Medium	<ul style="list-style-type: none"> <li>■ Meet minimum requirements (Section 3.2)</li> <li>■ Implement Site Management Requirements (Section 3.3)</li> <li>■ Implement all appropriate Construction BMPs (Section 3.4)</li> <li>■ Comply with General Construction Permit (except if &lt;1 Acre)</li> </ul>
	High	

<sup>1</sup> The County or Cities may elect to require specific minimum BMPs for each prioritization category.

## 3.2 Minimum Requirements

All construction projects regardless of size are required, at a minimum, to implement an effective combination of erosion and sediment controls and waste and materials management BMPs. These minimum requirements are summarized in Table 3-2 and must be conveyed to construction contractors as part of the plan notes or on a separate erosion control plan as required by the agency.

**Table 3-2**  
**Minimum Requirements for All Construction Sites**

Category	Minimum Requirements
Erosion and Sediment Control	Sediments from areas disturbed by construction shall be retained on site using an effective combination of erosion and sediment controls to the maximum extent practicable and stockpiles of soil shall be properly contained to minimize sediment transport from the site to streets, drainage facilities or adjacent properties via runoff, vehicle tracking, or wind.
Waste and Materials Management Control	Construction-related materials, wastes, spills or residues shall be retained on site to minimize transport from the site to streets, drainage facilities, or adjoining property by wind or runoff.

BMPs that may be used to meet the minimum requirements are described later in this Section.

## 3.3 Site Management Requirements

The following requirements are for deployment of selected construction BMPs and apply to all projects with one acre or greater of soil disturbance and projects tributary to or within 500 feet of an ASBS within the Santa Ana Regional Board jurisdiction with less than 1 acre of soil disturbance. BMPs that may be used to meet the site management requirements are described later in this Section.

### Dry Season Requirements (May 1 through September 30)

- A. Wind erosion BMPs (dust control) shall be implemented.
- B. Sediment control BMPs shall be installed and maintained at all operational storm drain inlets internal to the project.
- C. BMPs to control off-site sediment tracking shall be implemented and maintained.

- D. Appropriate waste management and materials pollution control BMPs shall be implemented to prevent the contamination of stormwater by wastes and construction materials.
- E. Appropriate non-stormwater BMPs shall be implemented to reduce or prevent the contamination of stormwater from construction activities.
- F. There shall be a “weather triggered” action plan and the ability to deploy standby sediment control BMPs as needed to protect all exposed portions of the site within 48 hours of a predicted storm event (a predicted storm event is defined as a National Weather Service forecasted, 50% chance of rain).
- G. Sufficient materials needed to install standby *sediment control BMPs* (at the site perimeter, site slopes, and operational inlets within the site) necessary to reduce or prevent sediment discharges from exposed portions of the site shall be stored on site. Areas that have already been protected from erosion using physical stabilization or established vegetation stabilization BMPs as described in item H below are not considered “exposed” for purposes of this requirement.
- H. Deployment of permanent erosion control BMPs (physical or vegetation) should commence as soon as practical on slopes that are completed for any portion of the site. Standby BMP materials should not be relied upon to prevent erosion of slopes that have been completed.

### **Wet Season Requirements (October 1 through April 30)**

In addition to the Dry Season Requirements:

- A. Sediment control BMPs shall be implemented at all appropriate locations along the site perimeter, at all operational storm drain inlets and at all non-active slopes, to provide sufficient protection for storms likely to occur during the rainy season.
- B. Adequate physical or vegetation erosion control BMPs (temporary or permanent) shall be installed and established for all completed slopes prior to the start of the rainy season. These BMPs must be maintained throughout the rainy season. If a selected BMP fails, it must be repaired and improved, or replaced with an acceptable alternate as soon as it is safe to do so. Repairs or replacements must result in an adequate BMP or additional BMPs should be installed to provide adequate protection.
- C. The amount of exposed soil allowed at one time shall not exceed that which can be adequately protected by deploying standby erosion control and sediment control BMPs prior to a predicted rainstorm.
- D. All disturbed areas that are not completed but that are not being actively graded (non-active area) shall be protected from erosion with temporary or permanent

BMPs (erosion and sediment control). The ability to deploy standby BMP materials is not sufficient for these areas. Erosion and sediment control BMPs must actually be deployed. This includes all building pads, unfinished roads and slopes.

- E. Sufficient materials needed to install standby *erosion and sediment control BMPs* necessary to protect all exposed portions of the site from erosion and to reduce or prevent sediment discharges shall be stored on site. Areas that have already been protected from erosion using permanent physical stabilization or established vegetation stabilization BMPs are not considered “exposed” for purposes of this requirement.

### **3.4 Construction BMPs**

In order to meet the minimum requirements for all projects and the site management requirements for medium and high priority projects, construction contractors must select, install, and maintain appropriate BMPs on all construction projects. BMPs must be installed in accordance with an industry recommended standard or in accordance with the General Construction Permit. BMPs are tools that are used to ensure sites meet the requirements outlined above. Selection of BMPs is a site-specific process and as such, no specific type or number of BMPs is required<sup>2</sup>.

Described below are the construction BMPs from the California Stormwater Best Management Practice Handbook, Construction, 2003 Edition (see Section 3.6 for further information). The Handbook contains BMP fact sheets for six major categories of BMPs and guidelines on how to select erosion and sediment controls as well as material and waste management controls. These categories of BMPs and their applicability are discussed below.

- Erosion Control
- Sediment Control
- Wind Erosion Control
- Tracking Control
- Non-Stormwater Management
- Waste Management & Materials Pollution Control

#### **3.4.1 Erosion Control**

Erosion Control is any source control practice that protects the soil surface and prevents the soil particles from being detached by rainfall or wind. One or more of the following

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<sup>2</sup> The County or Cities may elect to require specific minimum BMPs for each prioritization category.

physical and/or vegetation stabilization BMPs, are required to prevent or reduce, to the maximum extent practicable, erosion from exposed slopes.

**Physical Stabilization:**

If physical stabilization is selected, materials must be appropriate to the circumstances in which they are deployed, and sufficient material must be deployed. Chemicals that may affect water quality should not be used.

- EC-3 Hydraulic Mulch
- EC-4 Hydroseeding
- EC-5 Soil Binders
- EC-6 Straw Mulch
- EC-7 Geotextiles & Mats

**Vegetation Stabilization:**

If vegetative stabilization is selected, the stabilizing vegetation must be installed, irrigated and established prior to the onset of the storm season (October 1). Established vegetation is defined as a subsurface mat of intertwined mature roots with a uniform vegetative coverage of 70 percent of the natural vegetative coverage or more on disturbed areas. In the event stabilizing vegetation has not been established by October 1, other forms of physical stabilization must be employed to prevent erosion during storm events until the stabilizing vegetation is established.

- EC-4 Hydroseeding (to establish interim vegetation)

**Wind Erosion (Dust) Control:**

Apply water or other dust palliatives as necessary to prevent or alleviate dust nuisance:

- WE-1 Wind Erosion Control

**3.4.2 Sediment Control**

Sediment Control is any practice that traps the soil particles after they have been detached and moved by wind or water. Sediment control measures are usually passive systems that rely on filtering or settling the particles out of the water or wind that is transporting them.

**Perimeter Protection:**

Protect the perimeter of the site or exposed area from sediment ingress/discharge in sheet flows using one or more of the following:

- SE-1 Silt Fence
- SE-5 Fiber Rolls
- SE-6 Gravel Bag Berm

- SE-8 Sand Bag Barrier
- SE-9 Straw Bale Barrier

**Storm Drain Inlet Protection:**

Protect all operational storm drain inlets internal to the project by using:

- SE-10 Storm Drain Inlet Protection

**Resource Protection:**

Protect Environmentally Sensitive Areas (ESAs) and watercourses from sediment in sheet flows by using one or more of the following:

- SE-1 Silt Fence
- SE-5 Fiber Rolls
- SE-6 Gravel Bag Berm
- SE-8 Sand Bag Barrier
- SE-9 Straw Bale Barrier

**Sediment Capture:**

Capture sediments in channeled stormwater by using one or more of the following:

- SE-3 Sediment Trap
- SE-10 Storm Drain Inlet Protection
- SE-2 Sediment Basin (Sediment Basin(s) must be designed in accordance with the General Permit or other industry standard).

**Velocity Reduction:**

Reduce the discharge velocity of stormwater by using one or more of the following:

- SE-1 Silt Fence
- SE-4 Check Dam
- SE-2 Sediment Basin
- EC-10 Outlet Protection/Velocity Dissipation Devices

**Off-site Sediment Tracking:**

Reduce or prevent sediment from being tracked off-site by using one or more of the following:

- TC-1 Stabilized Construction Entrance/Exit
- TC-2 Construction Road Stabilization
- TC-3 Entrance/Outlet Tire Wash

### **3.4.3 Waste Management**

Reduce or prevent the contamination of stormwater by wastes through proper management of the following types of wastes:

- Solid
- Sanitary
- Concrete
- Hazardous
- Equipment-related wastes

BMPs that must be implemented for handling, storing, and disposing of wastes generated by a construction project to reduce or prevent the release of waste materials into stormwater discharges include:

- WM-4 Spill Prevention and Control
- WM-5 Solid Waste Management
- WM-6 Hazardous Waste Management
- WM-7 Contaminated Soil Management
- WM-8 Concrete Waste management
- WM-9 Sanitary/Septic Waste Management
- WM-10 Liquid Waste Management
- NS-8 Vehicle and Equipment Cleaning
- NS-9 Vehicle and Equipment Fueling
- NS-10 Vehicle and Equipment Maintenance

### **3.4.4 Materials Management**

Reduce or prevent the contamination of stormwater from construction materials by covering and/or providing secondary containment of storage areas and/or by taking adequate precautions when handling materials. BMPs to implement for handling, storing, and using construction materials to prevent the release of those materials into stormwater discharges are:

- WM-1 Material Delivery and Storage
- WM-2 Material Use
- WM-3 Stockpile Management

### **3.4.5 Non-Stormwater Management**

Non-stormwater management BMPs limit or reduce potential pollutants at their source before they are exposed to stormwater. These BMPs are also referred to as “good housekeeping practices” that involve day-to-day operations of the construction site and

are usually under the control of the contractor. BMPs to implement for non-stormwater management, depending on the conditions and/or applicability of deployment are:

- NS-1 Water Conservation Practices
- NS-2 Dewatering Operations
- NS-3 Paving and Grinding Operations
- NS-4 Temporary Stream Crossing
- NS-5 Clear Water Diversion
- NS-6 Illicit Connection/ Discharge
- NS-7 Potable Water/Irrigation
- NS-8 Vehicle and Equipment Cleaning
- NS-9 Vehicle and Equipment Fueling
- NS-10 Vehicle and Equipment Maintenance
- NS-11 Pile Driving Operations
- NS-12 Concrete Curing
- NS-13 Concrete Finishing
- NS-14 Materials and Equipment Use Over Water
- NS-15 Demolition/ Adjacent to Water
- NS-16 Temporary Batch Plants

### **3.5 BMP Standard Plans**

Accepted standard plans that may be used for construction BMPs are found in the Orange County Environmental Management Agency (now RDMD) Standard Plans, 1996 Edition. This includes the following BMPs standard plans: Sandbag Velocity Reducer (No. 1328) and Temporary Drainage Inlet (No. 1330). These standard plans have been included at the end of this document.

### **3.6 BMP References**

The primary reference for construction, implementation, and maintenance of construction BMPs is the California Stormwater Best Management Practice Handbook – Construction. This handbook has been recently revised and the latest version can be purchased or downloaded from <http://www.cabmphandbooks.com>.

# Section 4

## Documentation Requirements

This section presents documentation requirements for construction projects. The documentation requirements are summarized below in Table 4-1.

**Table 4-1**  
**Documentation Requirements for Construction Projects**

Site Area	Documentation Requirement
Total Disturbed Soil Area < 1 Acre	<ul style="list-style-type: none"> <li>■ BMPs to meet Minimum Requirements as Standard Conditions in Grading or Building Permit, or as Plan Notes (Erosion Control Plan at the discretion of the County/City)</li> </ul>
Total Disturbed Soil Area ≥ 1 Acres (covered by General Construction Permit)	<ul style="list-style-type: none"> <li>■ Proof of Submittal of NOI</li> <li>■ Stormwater Pollution Prevention Plan (SWPPP)</li> <li>■ Erosion Control Plans (ECPs) meeting Minimum Requirements and Site Management Requirements</li> <li>■ BMPs to meet Minimum Requirements and Site Management Requirements as Standard Conditions or Plan Notes (if no Grading Permit)</li> </ul>

### 4.1 Documentation Requirements for Construction Projects Subject to the General Construction Permit

The following describe the process to be followed for a private construction project that is subject to the General Construction Permit (1 acre or greater of soil disturbance or less than 1 acre but part of a greater common plan of development):

- The project owner, developer, or contractor is responsible for preparing the Notice of Intent (NOI) and submitting it to the State Water Resources Control Board. Before receiving a grading or building permit, the project owner, developer, or contractor must submit to the County/City proof of submittal for General Construction Permit coverage.
- For grading permit projects, an Erosion Control Plan must be submitted in accordance with the County/City grading ordinance.
- Prior to the start of construction, a SWPPP meeting the requirements of the General Construction Permit must be prepared by the owner, developer, or contractor. The SWPPP must be implemented year-round throughout the duration of the project's

construction. A SWPPP Template is available for download from <http://cabmphandbooks.com>. It is important to note that the County/City and its staff are not responsible for reviewing, approving, or enforcing the SWPPP; these are responsibilities of the Santa Ana or San Diego Regional Boards and their staffs. County/City Inspector(s) may choose to use the SWPPP as an informal tool for on-site inspections; thus, the SWPPP must be made available upon the inspector's request.

- Once the project owner, developer, or contractor receives a grading or building permit (if applicable) and initiates construction, BMPs must be implemented throughout the duration of the project as specified in Table 3.1.
- To comply with the General Construction Permit, the contractor must perform inspections before and after storm events and once each 24-hour period during extended storm events to identify BMP effectiveness and implement repairs or design changes as soon as feasible depending upon field conditions. The results of all inspections and assessments must be documented and copies of the completed inspection checklists must be maintained with the SWPPP.
- The County/City will inspect and enforce issued and applicable ordinances as noted in Section 5, including implementation of BMPs as specified in Table 3.1. The County/City will notify the appropriate Regional Board of non-compliance when the non-compliance meets the criteria of posing a threat to human or environmental health.
- Once project construction is completed and the site fully complies with the final stabilization requirements of the General Construction Permit, the owner/developer will submit a Notice of Termination (NOT) to the State Water Resources Control Board.

## **4.2 Documentation Requirements for Other Sites (< 1 Acre)**

Private construction projects disturbing < 1 acre of soil must implement BMPs to comply with minimum requirements listed in Table 3-2. Projects covered under a grading permit are required to develop Erosion Control Plans (ECPs). These ECPs must show proposed locations of the erosion control BMPs that will be implemented during the construction. If the project is tributary to or within 500 feet of an ASBS in the Santa Ana Regional Board region, site management requirements (Section 3.3) shall also apply.

# **Section 5**

## **Municipal Inspection of Construction Sites**

The County/City will perform inspections of construction sites to verify that the requirements of the DAMP are being implemented and maintained, and that construction sites appropriately comply with requirements of local permits (building, grading, NPDES, etc.) and Ordinances (Grading, Water Quality, and others) as detailed in this Manual and as augmented by the local agency, and that they continue to protect water quality.

### **5.1 Prioritization of Construction Site Threat to Water Quality**

The County/City will evaluate the potential threat to water quality posed by the construction activity and assign a threat priority of low, medium, or high. Based on the threat of prioritization the County/City will set an inspection frequency to ensure that BMPs are adequate, are being implemented and maintained properly, and that no discharge violations are occurring. Factors considered in the threat prioritization include:

- Size and type of the construction project
- Time of Construction – rainy season (October 1 - April 30) versus dry season
- Location- tributary to an impaired waterway or near an ASBS or ESA
- Site topography

### **5.2 Inspection Frequencies**

Construction sites will be inspected, according to the priority established by the County/City, until construction activity is complete. The minimum frequency of construction site inspections is shown in Table 5-1:

**Table 5-1**  
**Minimum Inspection Frequency of Construction Projects**

Construction Site Priority	Rainy Season (October 1 - April 30)		Dry Season (May 1 - September 30)
	Projects within the jurisdiction of the Santa Ana Regional Board	Projects within the jurisdiction of the San Diego Regional Board	
<b>High</b>	Once per month	Once per week *	As needed
<b>Medium</b>	Twice during the season		As needed
<b>Low</b>	Once during the season	Twice during the season	As needed

\* Or monthly if the County/City has submitted a written statement to the San Diego Regional Board

### 5.3 Inspection Responsibilities

At a minimum, the following will be addressed during inspections:

- Ensure that the owner/developer/contractor is meeting the construction program requirements of the DAMP;
- Ensure that there is an effective combination of erosion, sediment, and material and waste management BMPs being implemented and maintained in order to reduce or prevent the discharge of pollutants into stormwater conveyances and receiving waters;
- Ensure that the owner/developer/contractor implements and maintains appropriate BMPs on a year round basis;
- Ensure no discharge violations (excessive sediment, oil sheen, trash, etc.) are occurring or pose a reasonable threat of occurring;
- Ensure that, if issues are noted during the inspections, appropriate corrective actions are taken.

The primary mechanism that inspectors will use to determine if the minimum requirements and BMPs for construction activities are being met will be to assess the site against the minimum requirements (Table 3-2) and the approved plans. The minimum

requirements are intended to be easy to interpret field observations that allow an assessment of site conditions during both dry and wet season conditions.

The inspector will utilize the following framework when conducting an inspection:

- Review contractor's self-inspection checklist to determine whether minimum self-inspections have been performed;
- Review the applicable County/City required erosion and sediment control plans and contract documents and determine whether they are being properly implemented;
- Determine if BMPs are being effectively implemented in accordance with the approved plans and suggested list of BMPs, and are maintained properly;
- Determine whether the owner/developer/contractor is making appropriate adjustments when ineffective BMPs are found; and
- Determine if discharges are occurring from the site or are flowing into onsite storm drain inlets and determine if such discharges are prohibited.

If a discharge violation is observed, or if BMPs are either not implemented or not being maintained properly, enforcement actions may be imposed. If the inspected site does not meet the minimum requirements, inspectors will follow-up within a reasonable period to assure that all applicable requirements are implemented.

## **5.4 Enforcement Actions**

The County/City inspectors and/or other staff who possess internal enforcement authority through established policies and procedures will undertake enforcement of construction projects. Inspectors will enforce compliance with the construction program, grading or building permit, and local ordinances such as the Water Quality Ordinance. The inspectors will document violations observed.

If an inspector observes a significant and/or immediate threat to water quality, action will be taken to require the developer/contractor to immediately cease the discharge and the County/City will be obligated to forward this information to the Regional Water Quality Control Board for review of additional enforcement action or remediation requirements.

The County/City enforcement steps that may be taken by inspectors include but are not limited to:

- Verbal Warning
- Written Actions under the Water Quality Ordinance
  - Notice of Non-Compliance

- Administrative Compliance Order
- Administrative Citations or Fines
- Cease and Desist Order
- Civil and Criminal Actions
- Written Actions under Building/Grading Ordinances
  - Corrective Action Notice
  - Stop Work Order
  - Revocation of Permit(s) and/or Denial of Future Permits
  - Civil and Criminal Actions

In selecting enforcement options, the inspector will normally apply similar enforcement actions to violations of a similar nature. However, a more severe enforcement action may be taken when a violator has either a history of non-compliance or has failed to take good faith actions to eliminate continued violations. If egregious or unusual circumstances are indicated, a higher level of enforcement action will be taken.

### **Verbal Warnings:**

Typically, the initial method of requesting corrective action and enforcing compliance will be a verbal warning from the inspector to the contractor. The inspector will notify the developer/contractor's project supervisor of the violation and document the violation and the notification to the contractor's project supervisor in the inspection file. A specific time frame for correcting the problem and a follow-up inspection date will be documented by the inspector. In judging the degree of severity, the inspector may also take into account any history of similar or repeated violations by the same developer or contractor at this or other sites.

### **Written Warnings:**

If a deficiency that was noted in a prior verbal warning is not corrected by the next inspection, or the severity of the violation is such that a verbal warning is not strong enough, a written warning will be issued. The written warning will describe the deficiency that is to be corrected, suggested corrective action(s), the specific time frame for correction, and a date for a follow-up inspection.

A copy of the written warning will be provided to the contractor's project supervisor and another copy may be provided to the owner/developer. A copy will be placed in the active inspection file. Once the violation has been corrected to the satisfaction of the inspector, the inspector will document compliance in the inspection file. Depending on the severity of the violation(s), the options for issuing written warnings for enforcement of local ordinances and grading/building permits on private construction projects may vary. Written warnings include, but are not limited to, Notice of Non-Compliance, Administrative Compliance Order, Administrative Citations or Fines, and Cease and Desist Order.

### **Stop Work Orders:**

If a written warning has not been addressed by the next inspection, or if the developer/contractor has not complied with their permit requirements, or if a significant threat to water quality is observed (such as a failure of BMPs resulting in a significant release of sediment or other pollutants off site), a stop work order will be issued by the inspector or the appropriate official. Stop work orders prohibit further construction activity until the problem is resolved and provide a time frame for correcting the problem.

The stop work order will describe the infraction and specify what corrective action must be taken. A copy of the stop work order will be given to the contractor's project supervisor and placed in the active inspection file. A copy of the stop work order will also be sent to the owner/developer. To restart work once a stop work order has been issued, the contractor's project supervisor must request the inspector to re-inspect the project and verify that the deficiencies have been satisfactorily corrected. If the inspector is satisfied with the corrections, the inspector may sign off on that phase of the project, and work may proceed. In severe cases, the building or grading permit may be revoked.

### **Revocation of Permit(s) and/or Denial of Future Permits:**

In severe cases of non-compliance or significant discharges, it may be necessary to revoke the grading and/or building permit that a developer/contractor is working under, withhold final approval, or deny future permits on the project. The developer/contractor would then have to re-apply for permits and meet any requirements that the County/City may place on the project.

### **Civil and Criminal Actions:**

In severe cases, the County/City may also use Civil and or Criminal court actions under local ordinances, such as the Water Quality Ordinance, which may result in significant fines levied upon the non-compliant responsible parties.

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# Glossary

The following definitions are important in understanding the County/City's construction stormwater protection program.

**ASBS** – Area of Special Biological Significance. The Water Quality Control Plan for Ocean Waters of California (California Ocean Plan) designates 35 Areas of Special Biological Significance, two of which lie within the Santa Ana Regional Board jurisdiction:

- Newport Beach Marine Life Refuge (HU801.110)
- Irvine Coast Marine Life Refuge (HU801.110)

**BMP** – Best Management Practices (BMPs) are activities, practices, procedures, or facilities implemented to avoid, prevent, or reduce pollution of the stormwater system and receiving waters.

**Construction Project** - any site for which building or grading permits are issued and where an activity results in the disturbance of soil such as soil movement, grading, excavation, clearing, road construction, structure construction, or structure demolition; and sites where uncovered storage of materials and wastes such as dirt, sand, or fertilizer occurs; or exterior mixing of cementaceous products such as concrete, mortar, or stucco will occur.

**Demolition** - an activity involving the demolishing or the destruction of a structure, facilities, or associated appurtenances.

**Erosion Control** - the activity of reducing or eliminating erosion (the wearing away of the ground surface as a result of the movement of wind, water, and/or ice) by using a combination of Best Management Practices to protect adjacent private property, watercourses, public facilities, and receiving waters from an abnormal deposition of sediment or dust.

**Erosion Control Plan** – A plan (including drawings, specifications, or other requirements) detailing the methods of implementing an erosion control system.

**Discharge** – the release spill, leak, pump, flow, escape, leaching, dumping or disposal of any liquid, semi-solid, or solid substance.

**Environmentally Sensitive Area (ESA)** – includes but is not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated in the Ocean Plan as Areas of Special Biological Significance (ASBS) or by the State Water Resources Control Board (Water Quality Control Plan and amendments); water bodies designated with the RARE beneficial use by the State Water Resources Control Board (Water Quality Control Plan and amendments); areas designated as preserves or equivalent under the Natural Community Conservation Planning Program; and any areas designated as Critical

Aquatic Resources (CARS) or other equivalent environmentally sensitive areas which have been identified by the County or City.

**Municipal Storm Drain System** – the street gutter, channel, storm drain, catch basin, constructed drain, lined diversion structure, wash area, inlet, outlet, or other facility, which is part of or tributary to the County-wide stormwater runoff system and owned, operated, maintained, or controlled by the County/City, and used for the purpose of collecting, storing, transporting, or disposing of stormwater.

**Non-stormwater** – any runoff or discharge not entirely composed of stormwater.

**Notice of Intent (NOI)** – an application submitted by the owner/operator of a project that constitutes his intent to be authorized by an NPDES permit issued for stormwater discharges associated with the construction activity indicated.

**Notice of Termination** - a form to discontinue coverage under an NPDES general permit for stormwater discharges associated with industrial activity and stormwater discharges associated with construction activity.

**Pollutant** – any liquid, solid or semi-solid substances that will interfere with or adversely affect the beneficial uses of the receiving waters, flora, or fauna of the state. A more detailed definition is included in the Water Quality Ordinance. Generally, pollutants can include such items as:

- Artificial materials
- Household wastes
- Metals and Non-metals
- Petroleum and related hydrocarbons
- Animal wastes
- Substances having a pH less than 6.5 or greater than 8.6, or unusual coloration, turbidity or odor
- Waste materials, sediment, and wastewater generated by construction sites and construction activities
- Pollutants defined by the Federal Clean Water Act
- Other constituents or materials, including but not limited to pesticides, herbicides, fertilizers, fecal coliform, fecal streptococcus or enterococcus, or eroded soils, sediment and particulate materials.

**Receiving Water** -A river, lake, ocean, stream, or other watercourse identified in the Basin Plan into which waters may be discharged.

**Regional Board** – Regional Water Quality Control Boards administer water quality requirements within a watershed region. There are nine Regional Boards under the SWRCB. The San Diego Regional Board and the Santa Ana Regional Board have jurisdiction in Orange County.

**Stormwater** -stormwater runoff and snow melt runoff

**SWRCB** – State Water Resources Control Board, California agency that implements and enforces water quality and NPDES permit requirements and oversees the Regional Boards.

**Stormwater Pollution Prevention Plan (SWPPP)** - Document required by the General Construction Permit to be developed and implemented by construction sites with 1 acre or greater of soil disturbance, or less than 1 acre but part of a greater common plan of development. The SWPPP emphasizes the use of appropriately selected, correctly installed, and maintained pollution reduction BMPs. This approach provides the flexibility necessary to establish BMPs that can effectively address source control of pollutants during changing construction activities.

**Waste Discharge Identification (WDID) Number**- an identification number assigned by the Storm Water Resources Control Board upon receipt of a complete NOI.

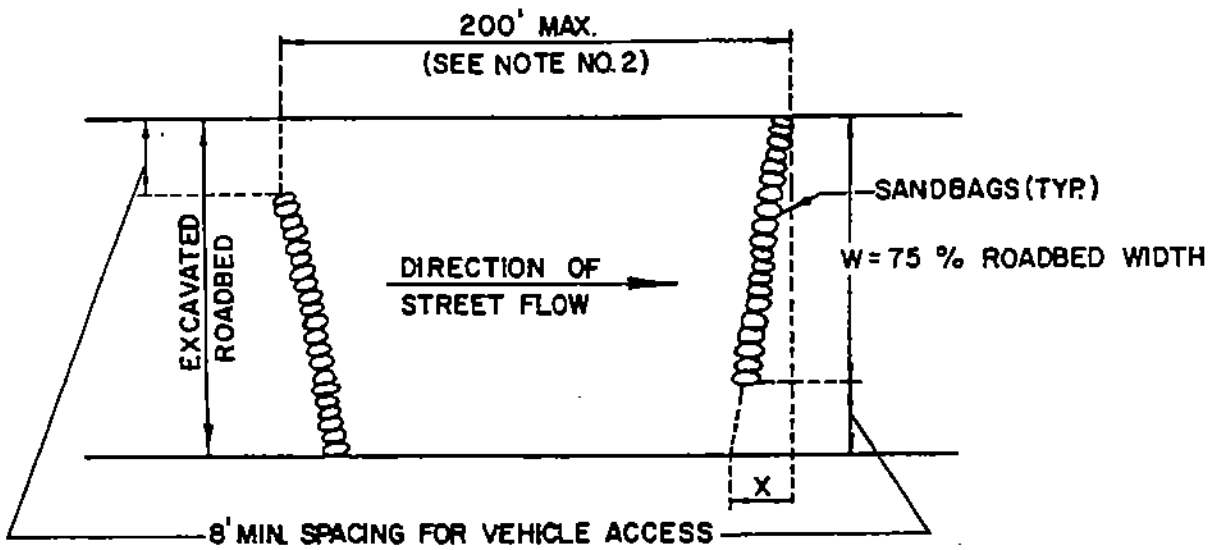
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Orange County Environmental Management Agency  
(Now County of Orange Resources & Development  
Management Department)

BMP Standard Plans

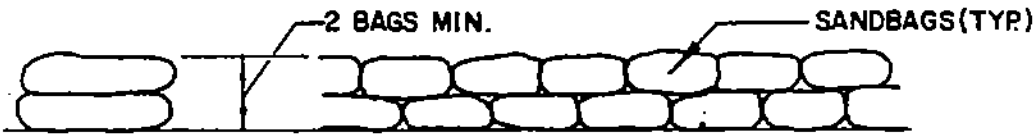
- Sandbag Velocity Reducer (No. 1328)
- Temporary Drainage Inlet (No. 1330)

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PLAN

W	X
20' - 30'	5'
31' - 40'	7'
41' - 50'	9'
51' - 60'	10.5'
61' - 70'	12'



TYPICAL SECTION

TYPICAL ELEVATION

NOTES:

1. Gravel bags are encouraged over the use of sandbags and may be required in areas which are particularly sensitive to sediment deposition.
2. Requirements for and spacing of velocity reducers for streets with grades of less than 4% shall be as shown on the approved Erosion Control Plan.
3. This standard detail shall be used as shown on the approved Erosion Control Plan.

ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY

APPROVED

*H.J. Krizan*  
H. J. KRIZAN DIRECTOR OF REGULATION

STD. PLAN

1328

Adopted: Res. 82-718

**SANDBAG VELOCITY REDUCER**

SHEET 1 OF 1

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6" X 6" - W1/4 X W1/4 W.W.M. OR APPROVED  
ALT. SCREEN AS SAFETY BARRIER.

2' MAX. HEIGHT OF  
BAGS AT SPILLWAY

3'  
MIN.

12"  
MIN.

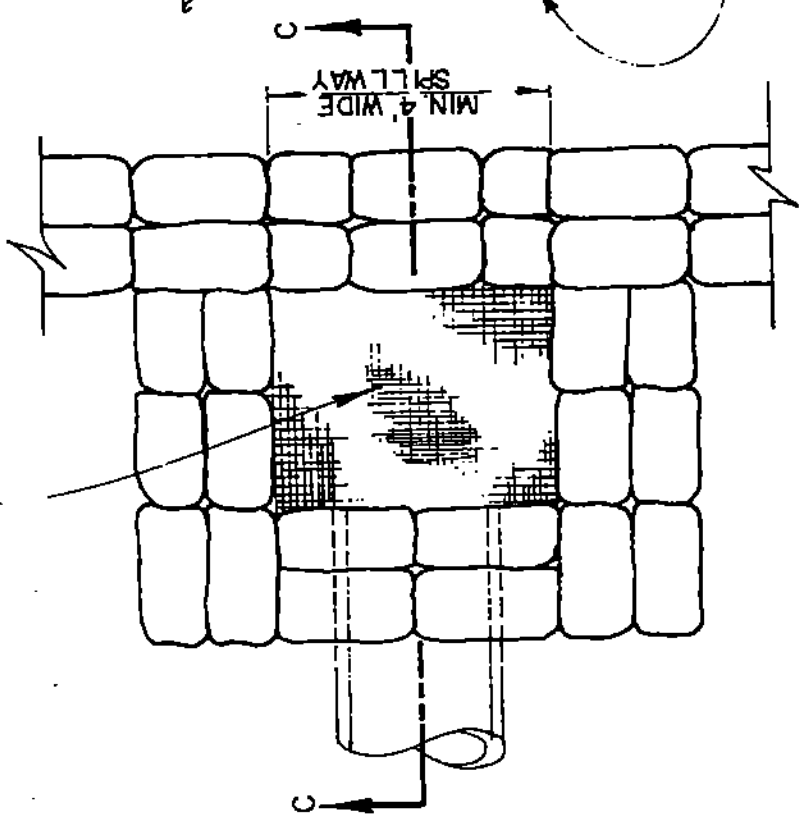
STREET  
SUB-GRADE

DOUBLE ROW  
SANDBAGS

BASE COURSE SANDBAGS  
ON EDGE.

2%  
SLOPE

STORM DRAIN PIPE. SEE  
PLAN FOR TYPE AND  
LOCATION.



SECTION C-C

PLAN

NOTES:

1. Gravel bags are encouraged over the use of sandbags and may be required in areas which are particularly sensitive to sediment deposition.
2. A portion of catch basin may be constructed in place of sandbags.
3. This standard detail shall be used as shown on the approved erosion control plan.

ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY

APPROVED *H.J. Krizan*  
H.J. KRIZAN DIRECTOR OF REGULATION

Adopted: Res. 82-718

STD. PLAN

1330

SHT. 1 OF 1

TEMPORARY DRAINAGE INLET