

SECTION A-8
CONSTRUCTION COMPONENT



FOR THE COUNTY OF ORANGE
AND
THE ORANGE COUNTY FLOOD CONTROL DISTRICT



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A-8.0 CONSTRUCTION COMPONENT

The construction component of this plan is composed of the following elements:

1. Section A-8.1, Program Summary
2. Section A-8.2, Model Construction Program
3. Section A-8.3, Education and Training

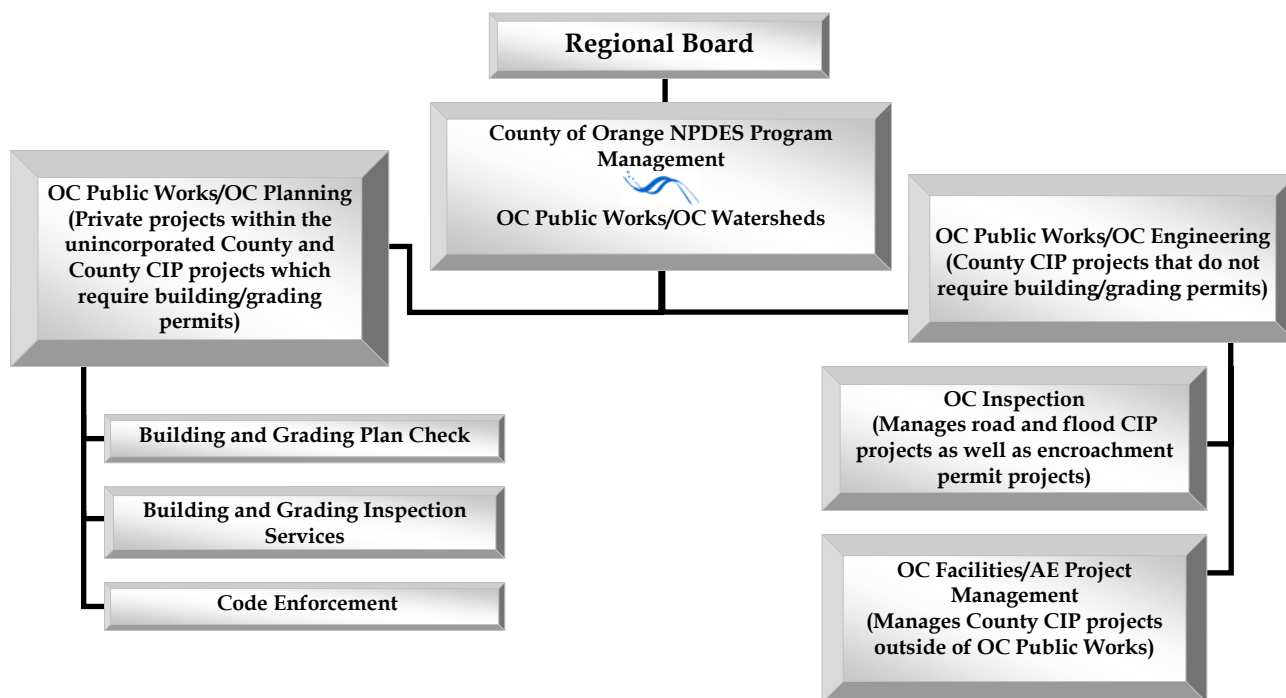
A-8.1 PROGRAM SUMMARY

A-8.1.1 Program Overview

Construction and grading activities are a potential source of pollutants in all phases of execution. The following sections present a detailed set of guidelines to prevent or minimize the impacts of stormwater runoff generated by construction activities within the jurisdiction of the County of Orange/Orange County Flood Control District (County) on receiving water bodies.

The County has key departments overseeing, implementing, and enforcing this program. These departments are identified in Figure A-8.1 below.

Figure A-8.1
County Construction Program Organization Chart





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The following outlines and describes County departments responsible for issuing building and/or grading permits for private development projects and inspecting these projects during construction as well as those that manage public works capital improvement (CIP) projects. As indicated in Figure A-8.1 above, all private development projects within the County's jurisdiction are overseen by a combination of OC Planning (permit review/issuance) and OC Inspection (inspection) while OC Public Works CIP projects are overseen by OC Inspection.

OC Public Works

Address: 300 N. Flower Street, Santa Ana, CA 92703, Tel (714) 834-2300

OC Public Works is responsible for:

- Administration of County public improvement projects and ensuring construction in the public right-of-way complies with adopted codes and engineering standards.
- Administration of County building improvement projects and ensuring construction complies with adopted codes and engineering standards.

OC Public Works (OC Road & Flood Projects) Contact - Director, Public Works
Other County Projects (OC Parks, Sheriff, HCA, etc.) Contact - Director, OC Facilities/AE Project Management

OC Inspection
(714)567-7800

1152 East Fruit Street, Santa Ana, 92701

OC Inspection is responsible for the construction administration and inspection of Road & Flood capital improvement projects. OC inspection ensures all construction in the public right-of-way complies with adopted codes and engineering standards, therefore, these projects do not require a grading or building permit from the County's planning department (OC Planning).

OC Inspection is also responsible for the construction inspection of capital infrastructure improvements constructed by private developers which are proposed for acceptance by the County of Orange or the Orange County Flood Control District for ownership, operation, and/or maintenance. In addition, OC Inspection provides construction inspection for County Public Property Permits which cover encroachments onto County or Flood Control District right of way. OC Inspection ensures all construction under their regulatory review and inspection complies with adopted codes and engineering standards.

OC Inspection also is responsible for geotechnical, soils, and materials testing for all County and Flood Control District capital improvement projects. OC Inspection also has an Environmental Regulatory Permits Section which is responsible for coordinating with the various resource regulatory agencies to assist in acquiring environmental regulatory agreements and permits for County and Flood Control District CIP projects.

OC Facilities/AE Project Management
(714)567-7744
1143 E. Fruit St., Santa Ana, 92701

Most County CIP projects other than road and flood projects are managed by OC Facilities/AE Project Management. This would include construction projects for Health Care Agency (HCA),



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Sheriff, Probation, Social Services Agency, Courts, OC Libraries, etc. OC Facilities/AE Project Management does not employ construction inspection staff so all projects are required to obtain grading/building permits from OC Planning. OC Inspection takes on inspection responsibility while the AE Project Manager is responsible for ensuring compliance with all NPDES requirements. Even if the County CIP project is within the jurisdiction of another city, the project still goes through OC Planning for grading/building permit issuance as any facility on County owned land is considered a County "Island".

OC Planning

Address: 300 N. Flower Street, Santa Ana, CA 92703, Tel (714) 834-2300

OC Planning is responsible for:

- Implementing the policies and objectives of the County set forth in the General Plan and Zoning Ordinance
- Reviewing proposed developments for consistency with the County's standards and policies relating to land use, and preservation of the environment
- Ensuring that all building construction in the County complies with adopted codes, and that permitting and licensing systems are efficient and serve the needs of the public, as well as the County.

General Plan Contact – Manager, Land Use Planning

CEQA Review Contact – Manager, Land Use Planning

Inspection Contact – Assistant Director/Building and Safety

A-8.1.2 Program Commitments

The major program commitments and the subsections in which they are described in detail include:

- Maintain/update inventories of construction sites/projects (A-8.2.2);
- Prioritize fixed facilities, construction sites/projects (A-8.2.3);
- BMPs for construction sites/projects (A-8.2.4);
- Documentation requirements (A-8.2.5);
- Inspection and enforcement (A-8.2.6); and
- Education and training (A-8.3).

A-8.1.3 Regulatory Requirements

This construction program was developed to fulfill the municipal activity commitments and requirements of:

- Section XV of the Santa Ana Region Fourth Term MS4 Permit (Order No. R8-2009-0030); and,
- Section F.3 of the San Diego Region Fourth Term MS4 Permit (Order No. R9-2009-0002).



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A-8.2 MODEL CONSTRUCTION PROGRAM

A.8.2.1 Model Program Overview

The County has incorporated the model construction program described in DAMP Section 8.2 as the basis for this section of its Local Implementation Plan (LIP). This construction program presents requirements and guidelines for pollution prevention methods that must be used by construction site owners, developers, contractors, and other responsible parties, in order to prevent illicit discharges into the MS4, implement and maintain structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites to the MS4, reduce construction site discharges of storm water pollutants from the MS4 to the maximum extent practicable (MEP), and prevent construction site discharges from the MS4 from causing or contributing to a violation of water quality standards.

A-8.2.2 Inventory of Construction Sites

A watershed-based inventory of all construction sites/projects is maintained by the County. This inventory includes all sites/projects meeting the definition of a construction project provided in **DAMP Section 8.1.5**, including those covered by the Construction General permit (CGP)¹, a County-issued grading, building, or encroachment permit, public works construction projects, and sites/projects where activities include:

- Soil movement;
- Uncovered storage of materials or wastes, such as dirt, sand or fertilizer; or,
- Exterior mixing of cementaceous products, such as concrete, mortar or stucco.

The County's comprehensive construction site inventory is included in **Exhibit A-8.I** of this LIP. The inventory will at a minimum be updated biannually; once in September and the second update in May. During the update process, projects for which building or grading permit(s) have expired or have been closed, and projects that have been completed, will be removed from the inventory. New projects will also be added to the inventory as they are initiated.

A-8.2.3 Prioritization of Construction Sites

After the inventory is compiled, construction sites/projects within the County's jurisdiction are prioritized into high, medium, or low categories, based on criteria which includes size, threat to water quality, proximity to Environmentally Sensitive Areas, etc., per the guidelines set forth in **DAMP Section 8.2.3**. Priorities will at a minimum be updated twice a year in conjunction with the biannual update of the inventory

A-8.2.4 BMPs for Construction Projects

All construction sites/projects, regardless of size, are required to implement BMPs to prevent discharges into the storm drain system or watercourses. The County has established a minimum set of BMPs and other management measures to be implemented at all construction

¹ State Water Resources Control Board (SWRCB) Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity



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sites/projects year round. BMP implementation requirements may vary seasonally (wet and dry seasons); however, dry season BMP implementation must plan for and address unseasonable rain events that may occur during the dry season.

All construction sites/projects are required, at a minimum, to implement and be protected by an effective combination of erosion and sediment controls and waste and materials management BMPs at all times. The minimum requirements are summarized in **Table A-8.1**. These minimum requirements are conveyed to construction contractors as part of the permit conditions and plan notes. In addition, they are reviewed as a part of the pre-construction meeting for projects that require a meeting with the inspector and/or project manager prior to beginning work.

Table A-8.1

Minimum Construction Site/Project Management Measures	
i.	Pollution prevention where appropriate;
ii.	Development and implementation of a site specific run-off management plan;
iii.	Minimization of areas that are cleared and graded to only the portion of the site that is necessary for construction;
iv.	Minimization of exposure time of disturbed soil areas;
v.	Minimization of grading during the wet season and correlation of grading with seasonal dry weather periods to the extent feasible;
vi.	Limitation of grading to a maximum disturbed area as determined by the City before either temporary or permanent erosion controls are implemented to prevent storm water pollution. The City has the option of temporarily increasing the size of disturbed soil areas by a set amount beyond the maximum, if the individual site is in compliance with applicable storm water regulations and the site has adequate control practices implemented to prevent storm water pollution;
vii.	Temporary stabilization and reseeded of disturbed soil areas as rapidly as feasible;
viii.	Wind erosion controls;
ix.	Tracking controls;
x.	Non-stormwater management measures to prevent illicit discharges and control storm water pollution sources;
xi.	Waste management measures;
xii.	Preservation of natural hydrologic features where feasible;
xiii.	Preservation of riparian buffers and corridors where feasible;
xiv.	Evaluation and maintenance of all BMPs, until removed; and
xv.	Retention, reduction, and proper management of all storm water pollutant discharges on site to the MEP standard.



Minimum Erosion and Sediment Controls	
i.	Erosion prevention is to be used as the most important measure for keeping sediment on site during construction;
ii.	Sediment controls are to be used as a supplement to erosion prevention for keeping sediment on-site during construction;
iii.	Slope stabilization must be used on all active slopes during rain events regardless of the season and on all inactive slopes during the rainy season and during rain events in the dry season; and
iv.	Permanent revegetation or landscaping as early as feasible.

Enhanced BMPs

Within the San Diego Region of Orange County, the County requires enhanced or additional BMPs should the project site pose an exceptional threat to water quality. In determining the potential threat, the City considers the following factors:

- a) Soil erosion potential or soil type;
- b) Site slopes;
- c) Project size and type;
- d) Sensitivity and proximity to receiving water bodies;
- e) Non-storm water discharges;
- f) Ineffectiveness of other BMPs;
- g) Proximity and sensitivity of aquatic threatened and endangered species of concern;
- h) Known effects of Advanced Sediment Treatment (AST) chemicals; and
- i) Any other relevant factors

If an exceptional threat to water quality is determined based on the above factors, the County will require implementation of advanced treatment for sediment at construction sites (or portions thereof).

Construction BMPs

The County has incorporated the BMPs from the California Storm Water Quality Association (CASQA) 2009 Construction Handbook/Web Portal as part of this element of its stormwater management plan. **Table A-8.2** below lists the construction BMPs and copies of the corresponding fact sheets are included as **Exhibit A-8.II** of the LIP. While the County encourages the use of these fact sheets, it is recognized that there are other BMP fact sheets available to the project proponent that may be used to achieve compliance with the requirements of this program.



Table A-8.2 Construction BMPs (From 2009 CASQA Construction Handbook)

CATEGORY	BMP #	BMP NAME
Erosion Control BMPs	EC-1	Scheduling
	EC-2	Preservation of Existing Vegetation
	EC-3	Hydraulic Mulch
	EC-4	Hydroseeding
	EC-5	Soil Binders
	EC-6	Straw Mulch
	EC-7	Geotextiles and Mats
	EC-8	Wood Mulching
	EC-9	Earth Dikes and Drainage Swales
	EC-10	Velocity Dissipation Devices
	EC-11	Slope Drains
	EC-12	Streambank Stabilization
	EC-13	Reserved
	EC-14	Compost Blanket
	EC-15	Soil Preparation / Roughening
	EC-16	Non-Vegetative Stabilization
Sediment Control BMPs	SE-1	Silt Fence
	SE-2	Sediment Basin
	SE-3	Sediment Trap
	SE-4	Check Dam
	SE-5	Fiber Rolls
	SE-6	Gravel Bag Berm
	SE-7	Street Sweeping and Vacuuming
	SE-8	Sandbag Barrier
	SE-9	Straw Bale Barrier
	SE-10	Storm Drain Inlet Protection
	SE-11	Active Treatment Systems
	SE-12	Temporary Silt Dike
	SE-13	Compost Socks and Berms
	SE-14	Biofilter Bags
Wind Erosion Control BMPs	WE-1	Wind Erosion Control
Tracking Control BMPs	TC-1	Stabilized Construction Entrance/ Exit
	TC-2	Stabilized Construction Roadway
	TC-3	Entrance/Outlet Tire Wash
Non-Stormwater Control BMPs	NS-1	Water Conservation Practices
	NS-2	Dewatering Operations
	NS-3	Paving and Grinding Operations
	NS-4	Temporary Stream Crossing
	NS-5	Clear Water Diversion
	NS-6	Illicit Connection/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	Material Over Water
	NS-15	Demolition Adjacent to Water
	NS-16	Temporary Batch Plants



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CATEGORY	BMP #	BMP NAME
Waste Management & Materials Pollution Control BMPs	WM-1	Material Delivery and Storage
	WM-2	Material Use
	WM-3	Stockpile Management
	WM-4	Spill Prevention and Control
	WM-5	Solid Waste Management
	WM-6	Hazardous Waste Management
	WM-7	Contaminated Soil Management
	WM-8	Concrete Waste Management
	WM-9	Sanitary/Septic Waste Management
	WM-10	Liquid Waste Management
Construction General Permit Guidance	Appendix B	Stormwater Pollution Prevention Plan Outline
	Appendix C	Rain Event Action Plan Template
	Appendix D	Field Monitoring and Analysis Guidance

A-8.2.5 Documentation Requirements

For the purposes of this program element, the County shall implement the documentation requirements provided in **DAMP Section 8.4.5**. These requirements apply equally to private development and public works projects.

Requirements for Construction General Permit Sites

Construction projects that are subject to the State’s Construction General Permit (CGP) are required to enroll through the State’s Stormwater Multi Application & Report Tracking System (SMARTS) and implement a Storm Water Pollution Prevention Plan (SWPPP) consistent with the corresponding Risk Level requirements prescribed in Order No. 2009-0009-DWQ (CGP).

Private Construction Projects Covered by the Construction General Permit

The following describes the process that is followed by a private construction project:

- The Legally Responsible Person (LRP) is responsible for enrolling the project through SMARTS. Prior to issuing a grading or building permit, the County will require proof of CGP coverage (See conditions of approval, **Section A-7.5.3** of this LIP).
- Once the project owner, developer or contractor receives a grading or building permit (if applicable), and prior to commencing construction activity, the SWPPP must be prepared by a Qualified SWPPP Developer (QSD), and signed by the LRP and must be implemented year-round throughout the duration of the project’s construction. County staff is not responsible for reviewing, approving or enforcing the SWPPP; these are responsibilities of the respective Regional Board. Inspector(s) may choose to use the SWPPP as a tool for on-site inspections.
- The County will inspect and enforce local permit(s) and ordinances, and will notify the Regional Board of non-compliance when the non-compliance meets the criteria of posing a threat to human or environmental health as discussed in **DAMP Section 8.2.6.7**.
- Once project construction is completed and the site fully complies with the final stabilization requirements of the General Permit, the LRP will submit a Notice of Termination (NOT) request through SMARTS.



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Public Agency Construction Projects Covered by the Construction General Permit

The following describes the process that is followed by a public works construction project:

- The County enrolls the project through SMARTS. For CIP projects within the Santa Ana Region covered by the Fourth Term MS4 Permit, a WDID number is not assigned to the project within SMARTS.
- The SWPPP is prepared by a QSD, certified by the County, and uploaded to SMARTS prior to the commencement of construction activities. The County enforces compliance with the SWPPP through its contract documents.
- During construction, the County will inspect and enforce the contract documents and will notify the Regional Board when non-compliance meets the criteria of posing a threat to human or environmental health as discussed in **DAMP Section 8.2.6.7**.
- Once the project is completed, the County will submit request an NOT through SMARTS.

Private Construction Projects Not Covered by the Construction General Permit

Private construction projects not covered by the CGP, but covered under a grading permit, are required to develop Erosion and Sediment Control Plans (ESCPs). These ESCPs must show proposed locations of the erosion and sediment control BMPs that will be implemented during the construction project to comply with the minimum requirements listed in **Table 8-1**.

Public Agency Construction Projects Not Covered by the Construction General Permit

Public agency construction projects not covered by the CGP are required by **DAMP Section 8.4** to comply with appropriate pollution prevention control practices in accordance with the current edition of the "Green Book" Standard Specifications for Public Works Construction and the provisions of **Section A-8**, and shall develop and implement ESCPs. Low priority construction sites shall meet the minimum requirements listed in **Table 8-1**.

A-8.2.6 Municipal Inspections and Enforcement

Inspection Responsibilities

The County will perform inspections of construction sites to verify that the requirements in **DAMP Section 8.2.6** are being implemented and maintained, that they appropriately comply with local permits and ordinances and the CGP (for public agency projects covered by the CGP), and that they continue to protect water quality. Construction sites are inspected, according to the established priority, until construction activity is complete.

Inspection Frequencies

The County will inspect construction sites based upon the priority of the project. The frequency of construction site inspections is shown in **Tables A-8.3** and **A-8.4**:



Table A-8.3 Inspection Frequencies of Construction Sites - Santa Ana Region

Priority	Criteria (only one need apply)		Inspection Frequency		
			Wet Season (Oct. - Apr.)	Dry Season (May - Sep.)	
High	All sites 20 acres and larger	Sites over 1 acre tributary to Clean Water Act Section 303(d) waters listed for sediment or turbidity impairments.	Sites tributary to and within 500 feet of an Area of Special Biological Significance (ASBS).	Monthly	Conduct at a frequency to ensure that sediment and other pollutants are properly controlled and that unauthorized, non-stormwater discharges are prevented.
Medium	All sites between 5 to 20 acres where none of the other above criteria apply.		Twice during wet season		
Low	All sites less than 5 acres where none of the other above criteria apply.		Once during wet season		

When BMPs or BMP maintenance is deemed inadequate or out of compliance, an inspection frequency of once every week will be maintained until BMPs and BMP maintenance are brought into compliance (regardless of site prioritization).

Table A-8.4 Inspection Frequencies of Construction Sites - San Diego Region

Criteria (only one need apply)			Inspection Frequency	
			Wet Season (Oct. - Apr.)	Dry Season (May - Sep.)
All sites 30 acres or more in size with rough grading or active slopes occurring during wet season.	All sites one acre or more, and tributary to a CWA section 303(d) water body segment impaired for sediment or within or directly adjacent to, or discharging directly to, the ocean or a receiving water within an ESA.	Other sites determined by the Copermittees or the Regional Board as a significant threat to water quality.	Biweekly (Once every two weeks)	As needed during the dry season. Sites that meet any of the criteria for biweekly inspections during the wet season must be inspected at least once in August or September each year.
All sites one acre or larger where none of the above criteria apply.			Monthly	
All sites less than one acre where none of the above criteria apply.			As needed to ensure compliance with ordinances and MS4 Permit.	

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

Inspection Documentation Procedures

Since different County departments are responsible for inspecting private versus public projects, inspection checklists specific to each department’s needs have been developed. The



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County’s construction site inspection checklists are included in **Exhibit A-8.III**. Records of all inspections and non-compliance reporting will be retained for a period of at least three years.

Enforcement Actions

Enforcement of construction projects will be undertaken by the County’s inspectors and/or other staff who possess internal enforcement authority through established policies and procedures. The inspectors will assess the threat to water quality from construction site runoff and determine if a failure of BMPs is resulting in the release of excessive sediments or other pollutants. Violations observed will be documented by the inspectors and corrective action taken.

If a significant and/or immediate threat to water quality is observed by an inspector, action will be taken by that inspector to require the developer/contractor to immediately cease the discharge. **Table A-8.5** outlines the County’s enforcement steps that will be taken by inspectors for private construction projects and for public agency construction projects.

**Table A-8.5
Enforcement Actions for Construction Projects**

PRIVATE CONSTRUCTION PROJECTS	PUBLIC WORKS CONSTRUCTION PROJECTS
Verbal Warning	Verbal Warning
Written Warning <ul style="list-style-type: none"> ▪ Notice of Non-Compliance ▪ Administrative Compliance Order ▪ Administrative Citations or Fines ▪ Cease and Desist Order 	Written Warning <ul style="list-style-type: none"> ▪ Notice of Non-Compliance
Stop Work Order	Enforcement of Contract
Revocation of Permit(s) and/or Denial of Future Permits	<ul style="list-style-type: none"> ▪ Withholding of Payment ▪ Bond ▪ Fines ▪ Stop Work Order ▪ Revocation of Contract
Grading Ordinance Enforcement	Grading Ordinance Enforcement
Water Quality Ordinance Enforcement	Water Quality Ordinance Enforcement
Civil and Criminal Court Actions	Civil and Criminal Court Actions

Non-Compliance Reporting

The County will consider a site non-compliant when one or more violations of local ordinances, permits, or plans exist on the site. If a non-compliant public or private construction project meets the criteria of posing a threat to human or environmental health as discussed in **DAMP Section 8.2.6.7**, then the Regional Board will be notified as required.

Oral notification to the Regional Board of non-compliant public or private construction projects that are determined to pose a threat to human or environmental health will be provided within



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24-hours of the discovery of non-compliance. Such oral notification shall be followed up by a written report and submitted to the Regional Board within 5 days of the incidence of non-compliance. Written notification(s) will identify the type(s) of non-compliance, describe the actions necessary to achieve compliance, and include a time schedule, subject to modification by the Regional Board, indicating when compliance will be achieved.

As required in Section IX of the Fourth Term MS4 Permit for the Santa Ana Region, quarterly reports to the Santa Ana Regional Board detailing non-compliance at any sites in the County's jurisdiction subject to the CGP will be provided.

In compliance with Section F.2 of the Fourth Term MS4 Permit for the San Diego Region, on an annual basis, prior to the start of the wet season, the County will provide a report summarizing all construction sites in the County's jurisdiction with alleged violations. Information provided shall include, but not be limited to, the following:

1. WDID number if enrolled under the General Construction Permit
2. Site Location, including address
3. Current violations or suspected violations

A-8.3 EDUCATION AND TRAINING

To assist responsible municipal staff and contract staff in understanding the DAMP's Model Construction Program, annual training sessions will be conducted. In addition to Permittee sponsored training, staff may also attend training seminars or workshops related to general water quality and stormwater management during construction, conducted by other organizations. Required training for municipal employees is included in **Table A-3.2** of this LIP.

A-8.3.1 Training Modules

To support implementation of the Construction Program element, two construction activity training modules were developed during the Third Term Permits as described in DAMP Appendix B, Section B-8. The two modules are *Municipal Activities Program Management* (**DAMP Appendix B, Exhibit B-8.I**) and *Inspecting Construction Site BMPs* (**DAMP Appendix B, Exhibit B-8.II**). The modules will be substantially updated in 2010-11 to reflect the requirements of the Fourth Term Permits.