

**U.S. Environmental Protection Agency  
Region IX**

**California Regional Water Quality Control Board  
Los Angeles Region**

**Development Planning Program Review Report:  
Los Angeles County Municipal Storm Water  
NPDES Permit**

**November 2003**

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**Development Planning Program Review Report:**  
**Los Angeles County Municipal Storm Water NPDES Permit**  
**(NPDES Permit No. CAS004001)**

**EXECUTIVE SUMMARY**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board), with assistance from Tetra Tech, Inc., conducted a program review of four development planning programs implemented under the Los Angeles County Municipal Storm Water Permit (NPDES Permit No. CAS004001, Board Order No. 01-182) (MS4 Permit). This review was conducted March 18-19, 2003, and included the County of Los Angeles and the cities of Glendale, Los Angeles, and Santa Monica. The primary goal of the review was to determine the status of each permittee's implementation of the Development Planning and Standard Urban Storm Water Mitigation Plan (SUSMP) requirements. Secondary goals included the collection of program implementation information that could be used by the Regional Board to compile a model or "recommended" SUSMP program and a verification of the review process itself.

This report comprises four sections. Section 1 provides an introduction and an overview of the review process. Section 2 provides case studies for each of the four permittee's and includes a list of identified major findings. Section 3 provides an outline of the Regional Board's recommended Development Planning program. Section 4 provides an overview of the process that the Regional Board intends to follow in reviewing the implementation and compliance status of the permittee's covered under the MS4 permit. Attached as appendices are the Development Planning evaluation outline, the revised SUSMP that incorporates the changes from the 2001 MS4 permit, and a response to permittee comments.

Because the intent of this review was to determine the overall implementation status of each permittee's SUSMP program, the review team did not conduct formal permit compliance activities. However, the Regional Board does intend to incorporate compliance activities in future evaluations and for that reason has identified potential permit violations in this report to serve as an example for future evaluations.

This review report identifies potential permit violations, areas for improvement, recommendations and notable program aspects and is not a formal finding of violation. The review team did not evaluate all components of each permittee's Development Planning program. Therefore, the permittee's should not consider the following list of potential permit violations, areas for improvement, or recommendations a comprehensive evaluation of their entire Development Planning program.

### Potential Permit Violations

The following potential permit violations were identified (this report does not identify which permittee the potential permit violations apply to):

- *Required source control best management practices (BMPs) were not installed and/or implemented at completed new development sites.*

In more than one jurisdiction, plan reviewers had identified and approved applicable source control BMPs and had made their implementation a condition of approval. However, the source control BMPs were not directly included on the approved plans and were instead listed on interdepartmental approval letters or other clearance documents. Ultimately, the inclusion of these source control BMPs was not reviewed as part of the permittee's final inspection; only the treatment control BMPs were inspected. For example, in one jurisdiction storm drain stenciling was absent from all field sites visited where it had been called for in the plans. In another instance, the fossil filter material was missing from a catch basin insert (the insert was able to hold a filter but the filter was not present). In another jurisdiction, inlet stenciling was required at all of the sites, but was not present. Frequent parking lot sweeping was required, but did not appear to be occurring. During the course of the review, it was unclear whether the owners/tenants of the properties were implementing source control BMPs or were even aware of their existence.

Failure to ensure full implementation of source control BMPs appears to be a universal problem throughout MS4 programs in California. Program evaluations conducted in Orange, San Diego, and Sacramento Counties identified similar problems as those described above. It is also anticipated that the full implementation of source control BMPs within the other Los Angeles County permittees is lacking. Based on the completed evaluations statewide, it appears that the primary reasons are: 1) that source control BMPs are not routinely included on development plans and are therefore not inspected/evaluated by municipal inspectors during active construction or project sign-off; 2) that the ultimate occupant/tenant of the property is unaware of the BMP requirement(s) or purpose; and 3) and that the current programs and permits do not formally address/require the inspection and verification of post-construction BMPs. Failure to implement source control BMPs is a violation of Part 4.D.2 of the MS4 permit. Permittees need to continue to revise and implement procedures that better ensure the full implementation of source control BMPs. This identified problem will be a focus of future Regional Board evaluations.

- *Inappropriate Grading at a Single-Family Hillside Residential Development.*

Grading activities at one of the single-family hillside homes visited appeared to be a potential violation in that excavation had occurred within the steep slope areas outside of the building footprint, including the placement of large amounts of uncontrolled fill. Jurisdictional staff present indicated that such activities would not have been allowable on a grading plan, but at the time of our site visit they did not know whether a grading plan had actually been submitted.

## Areas for Improvement

Two areas were identified for improvement that appeared to unnecessarily limit the effectiveness and success of the permittees' programs. These areas could result in a future permit violation if left unattended. The areas include the following:

### County of Los Angeles

- *SUSMP Project Selection limits the application of the Environmentally Sensitive Areas (ESAs) provision.*

The permit requires under Section 2. e) the "implementation of SUSMP provisions no later than September 2, 2002, for all projects located in or directly adjacent to or discharging directly to an ESA, where development will:

(1) Discharge storm water and urban runoff that is likely to impact a sensitive biological species or habitat ...."

Implementation of the ESA provision appears to be limited to sensitive ecological areas (SEAs) based on the SEA map and to waters that are subject to TMDLs. The County should broaden implementation of the ESA SUSMP trigger to include areas identified in the Basin Plan as supporting the "Rare, Threatened, or Endangered Species (RARE)" beneficial use.

### City of Los Angeles

- *Preservation of natural areas within a development footprint was not a component of the City's SUSMP program.*

Watershed Protection Division (WPD) staff indicated that preserving natural areas was addressed in the City's landscape ordinance and natural areas were not routinely evaluated as part of their project conditioning and approval process. Staff were not aware of the exact required percentage, if any, of natural areas to be preserved at single-family residential developments. City staff tasked with approving source control BMPs should be familiar with these other City provisions and ordinances if they are to be used effectively as stand-alone BMPs or in conjunction with other BMPs.

## Recommendations

The program review identified recommendations for all of the permittees to consider. The recommendations are generally necessary for the permittees to implement a successful storm water program, but are not specifically required in the permit or SUSMP. The recommendations include the following:

### Applies to all four permittees

- *The application of specific BMPs did not necessarily match the pollutant sources.*  
The SUSMP requires the minimization of storm water pollutants of concern, which requires "the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in that runoff to the maximum extent practicable." The identification and application of specific BMPs appeared to be based solely on the generic SUSMP

discussion included with the MS4 permit rather than on specific pollutants of concern for each type of development. Identification and targeting of other specific pollutants of concern or pollutant generating areas (pervious or impervious) were not noted during the review. The permittees should revise their development planning process to identify specific pollutants of concern from each development and the BMP or combination of BMPs best suited to reduce those pollutants.

- *The permittees generally lacked methods to verify the maintenance of post-construction BMPs.*

The SUSMP requires that new developments provide proof of ongoing BMP maintenance, however it does not specifically require verification of maintenance (i.e., inspections). While the extent and approach of post-construction verification activities varies among the permittees, the evaluation found that the permittees are not conducting inspections to verify that ongoing post-construction BMP maintenance has been performed and are not evaluating the effectiveness of post-construction BMPs. The permittees also do not require (or provide) tenant education or notification as to the purpose of the BMPs or in some cases provide reminders of maintenance schedules and commitments. The permittees should conduct periodic inspections of source and treatment control BMPs to ensure proper installation, operation, and maintenance of controls. The permittees should also create tenant education programs that address maintenance requirements of BMPs. For example, the permittees could install or require, for appropriate locations, signage indicating that a treatment control BMP is present and its intended purpose.

### **Notable Program Aspects**

Several elements of the permittees' programs were particularly notable. The elements have been highlighted because they are either innovative or have proven to be effective. The notable examples are:

#### County of Los Angeles

- *The County applies the SUSMP requirements to a slightly broader range of projects than the eight categories defined in the permit.*  
All single-family residential hillside developments (regardless of footprint size) trigger the SUSMP requirements.
- *A high rate of SUSMP implementation is occurring within the County.*  
The County has conditioned approximately 200 projects for SUSMP BMPs since February 2002. During the 2001-2002 reporting period under its MS4 annual report, the County conditioned 70 projects for SUSMP requirements between February and June 2002, representing about 12 percent of all new development projects.
- *BMPs installed at nonresidential developments are inspected annually.*  
The Environmental Programs Division conducts annual inspections of facilities under the County's waste disposal operating permit, at which time facility storm water maintenance logs are reviewed for compliance with the permit's maintenance requirements that are specific to each of the SUSMP BMPs. Results of these inspections are entered into a

database that the Environmental Programs Division maintains for each facility holding a permit.

- *The County's information management capabilities and BMP tracking will benefit SUSMP implementation.*

The County has initiated development of a Web-based data entry and tracking system that should result in substantially enhanced information management and reduce the possibility that oversights may occur between the County divisions that have SUSMP responsibilities.

### City of Los Angeles

- *The WPD provides leadership, oversight, and technical support to other City departments implementing the SUSMP program.*

The WPD has a SUSMP Implementation Section staffed with three full-time equivalents (FTEs) (one for discretionary and two for ministerial) to provide direct assistance to the Department of City Planning (DCP) and the Department of Building and Safety (LADBS). Their oversight and support provides continuity across the discretionary, ministerial, and public agency project conditioning and approval process and ensures adherence to the SUSMP requirements.

- *Regular coordination meetings provide effective staff training and ensure the consistent application of SUSMP requirements and uniformity to project applicants.*

The monthly meetings sponsored by WPD provide effective training to implementation staff as real issues and remedies are discussed. In addition, the meetings ensure the consistent application of the program, which ultimately ensures that repeat project applicants learn and incorporate the required design elements into their original plans.

- *The Development Planning ordinance provides flexibility in implementing the SUSMP requirements.*

By referencing the technical implementation guide (the Development Handbook), the City is free to alter, modify, or change its technical criteria, conditioning and approval process without having to approve a revised ordinance.

- *A Covenant and Agreement (C&A) document must be recorded with the County Recorder and submitted to the City prior to approval for clearance of the grading/building permit.*

The C&A document is accompanied by an operations and maintenance (O&M) plan, which must describe the system operation and maintenance procedures, operating schedule, maintenance frequency, and routine service schedule. The O&M plan is a required component of the C&A and is a binding legal document.

- *The City's Project Database with GIS incorporation will benefit SUSMP implementation.*

For all SUSMP and Site Specific projects, pertinent project information is maintained in a database created by WPD. WPD has begun incorporation of this information into a GIS base tracking system. The City's database will result in substantially enhanced information management, reduce the possibility that duplicate BMPs may occur in sub-areas, and be able to evaluate SUSMP implementation effectiveness on a regional basis.

- *The City's BMP Handbooks benefit SUSMP implementation effectiveness.*  
The City developed two manuals titled: "Development Best Management Handbook Part B-Planning Activities" and "Reference Guide for Stormwater Best Management Practices". These two manuals are used by both City Staff and developers and have facilitated implementation of the SUSMP requirements and ensured consistent application of the program.

#### City of Santa Monica

- *The City applies the SUSMP requirements to a much broader range of projects than the eight categories defined in the MS4 permit.*  
Because Santa Monica is largely a built-out city, applying the SUSMP categories to new developments in the City would mean that very few projects would be required to implement new development controls. The City has chosen to apply new development requirements to any project that affects at least 50 percent of a site, and this provision greatly increases the number of projects required to implement new development controls. In Santa Monica, this primarily involves single-family residential redevelopments.
- *The City inspects treatment control BMPs as they are being installed.*  
The City inspector visits all projects installing treatment control BMPs to ensure that they are correctly installed. Most projects install infiltration pits. In these cases, the inspector must visit the project after the pit has been installed but before it is covered with landscaping. The inspector takes photos of the installed BMPs and enters information about the BMP into a citywide database of structural storm water controls.
- *The City has developed a detailed ACCESS database tracking all aspects of SUSMP implementation.*  
The City's database of BMPs includes more than 700 projects, and it tracks information such as the address, landowner, type of BMP installed, and the storage capacity of the BMP. The database even tracks BMP costs versus total project costs (currently, BMP costs average about 0.71 percent of total project cost). Various reports are available, including totals numbers of BMPs, land uses, zip codes, impermeable and permeable areas, and costs.
- *The City actively enforces illicit discharge and illegal watering ordinances.*  
During the field evaluation, the City inspector identified at least two instances of illegal watering, issued warnings, and informed the violators of best irrigation lawn water management.
- *The City has designated one person to manage the storm water program.*  
The City of Santa Monica has a storm water manager who oversees and coordinates all aspects of the storm water program. Having a single contact person for this program facilitates and streamlines the SUSMP program.
- *All project plans go through the Public Works department.*  
All project applicants, regardless of their size or purpose (including both ministerial and discretionary projects), must fill out an Urban Mitigation Plan Worksheet that is reviewed by the City's Urban Runoff Coordinator. This ensures that no project "slips through the cracks,"



and also allows the Urban Runoff Coordinator to inform all applicants of required BMPs, regardless of whether the project is subject to SUSMP requirements.

### City of Glendale

- *The City has designated one person to manage the storm water program.*  
The City of Glendale has a storm water manager who oversees and coordinates all aspects of the storm water program. Having a single contact person for this program facilitates and streamlines the SUSMP program.
- *All project plans go through the Public Works department.*  
All project applicants, regardless of their size or purpose (including both ministerial and discretionary projects), must fill out the SUSMP questionnaire and have it signed by the storm water manager. This ensures that no project “slips through the cracks,” and also allows the storm water manager to inform all applicants of required BMPs, regardless of whether the project is subject to SUSMP requirements.
- *The City requires owners to submit annual maintenance updates.*  
The City of Glendale requires that applicants file a notification letter annually, verifying that the devices have been maintained as per agreement. These self-inspection forms are required every January 1. The City plans to send reminders next year to those facilities that have not submitted the forms by January 15.

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## **1.0 INTRODUCTION**

### **1.1 Program Review Purpose**

The goal of the review was to determine the implementation status of the Standard Urban Storm Water Mitigation Plan (SUSMP) requirements by each of four copermitees. Secondary goals included the following:

- Collecting information to be used to develop a “recommended” Development Planning program.
- Verifying and documenting the review process.

40 CFR 122.41(h) and 122.41(i) provide the authority to conduct the program review.

### **1.2 Permit History**

The municipal separate storm sewer system (MS4) permit was issued on December 13, 2001, and is scheduled to expire on December 12, 2006. The current permit, the third issued to the permittees, requires that each permittee develop and implement a Storm Water Quality Management Program (SQMP) that includes a Development Planning program. The Development Planning program (permit provision Part 4.D) includes the SUSMP requirements.

### **1.3 Municipal Programs Reviewed**

The Development Planning programs of four permittees were reviewed for this report. These permittees were:

- County of Los Angeles
- City of Los Angeles
- City of Santa Monica
- City of Glendale

### **1.4 Logistics and Program Review Preparation**

Before initiating the on-site program review, Tetra Tech, Inc., reviewed the following materials:

- NPDES Permit No. CAS004001, Order No. 01-182
- Draft Annual Report Form for the Los Angeles MS4 Permit
- California Water Quality Control Board Los Angeles Region SUSMP, March 8, 2000
- Standard Urban Storm Water Mitigation Plan Manual, County of Los Angeles, May 17, 2000
- Development Best Management Practices Handbook, Part B Planning Activities, City of Los Angeles, August 2, 2002
- Permittee Web sites

On March 18-20, 2003, the Regional Board, with assistance from Tetra Tech, Inc., conducted the program review. The review schedule was as follows:

<b>Tuesday, March 18</b>	<b>Wednesday, March 19</b>	<b>Thursday, March 20</b>
<ul style="list-style-type: none"> <li>• Program review kickoff meeting</li> <li>• Office evaluation</li> <li>• Detailed review of permitted SUSMP projects</li> </ul>	<ul style="list-style-type: none"> <li>• Field review</li> <li>• Already completed SUSMP projects or projects under construction</li> </ul>	<ul style="list-style-type: none"> <li>• Exit interview</li> </ul>

Upon completion of the review, the review team held an exit interview with each permittee to discuss the preliminary findings. The review team presented general findings on SUSMP implementation but did not discuss the implementation status of the individual permittees. During the exit interview, the attendees were encouraged to ask questions and discuss the findings.

### **1.5 Development Planning and SUSMP Requirements**

The Development Planning program requirements appear in Part 4.D of the MS4 permit. The Development Planning requirements address three major components: peak flow control in natural drainage systems, standard urban storm water mitigation plans (SUSMPs), and site specific mitigation for projects not requiring a SUSMP. Other Development Planning requirements address numerical design criteria, maintenance, CEQA document and general plan updates, training, and technical guidance.

The peak flow control requirements apply in six natural drainage systems identified in the permit. By February 1, 2005, each permittee is required to implement numerical criteria developed by the County for peak flow control.

SUSMPs address storm water pollution from new development and redevelopment projects. The SUSMP contains a list of the minimum required BMPs that must be used for a designated project. Additional BMPs may be required by ordinance or code adopted by each permittee and applied generally or on a case-by-case basis. A SUSMP developed by the Regional Water Quality Control Board (RWQCB) and adopted by the permittees contains nine provisions applicable to all SUSMP projects, and additional requirements applicable to individual categories of SUSMP projects.

The site-specific mitigation requirements apply to projects not requiring a SUSMP but where one of eight or more project characteristics exist (for example, vehicle or equipment fueling areas). The permit requires implementation of a site-specific plan to mitigate post-construction storm water runoff from new development and redevelopment.

## 2.0 CASE STUDIES

The following table provides population, land area, and project information regarding each of the four permittees. The project information should be considered estimates. It should also be noted that the implementation start-up dates and selection criteria varies for each permittee. The project numbers are provided for basic informational purposes only.

**Table 1. Permittee Summary**

Permittee Name	Population	Area (square miles)	Ministerial Projects (annually)	Discretionary Projects (annually)	Total Projects (annually)
Los Angeles County	9,519,338 (total) 1,028,700 (unincorporated)	4,061 (total) 2,635 (unincorporated)	NA	NA	200
City of Los Angeles	3,694,820	469	80	41	121
City of Santa Monica	84,084	8	NA	NA	60-70
City of Glendale	194,973	31	NA	NA	50

NA: not available or not applicable.

Sources: U.S. Census Bureau, 2000; Los Angeles County, 2002.

The following case studies are organized into three main sections. The first section provides the *Development Planning Requirements* and primarily describes the pre-project conditioning and approval process. The second section discusses the *Field Evaluation* and primarily describes post-construction activities. The last section presents the *Review Findings* divided into areas for improvement and notable program aspects. The complete outline structure is presented below.

### *Development Planning Requirements*

- Ordinance/Legal Authority
- SUSMP Project Selection
- BMP Selection
- Design Standards, including waivers
- Project Approval and Conditioning
- Education

### *Field Evaluation*

- Tracking and Inspection
- Treatment Control BMP Implementation
- Source Control BMP Implementation
- Maintenance

### *Review Findings*

- Areas for Improvement
- Notable Program Aspects

All potential permit violations were presented in the Executive Summary of this report and are not presented again in the case studies. This review report is not a formal finding of violation. The review team did not evaluate all components of each permittee's Development Planning program. Therefore, the permittees should not consider the list of potential permit violations or areas for improvement to be a comprehensive evaluation of their entire Development Planning programs.

## **2.1 County of Los Angeles**

### *2.1.1 Development Planning Requirements in Los Angeles County*

#### Ordinance/Legal Authority

Chapter 12.8 of the County Code (Storm Water and Runoff Pollutant Control); Part 2 (General Provisions); Section 12.80.390 (Applicability of this chapter) states that "The provisions of this chapter shall apply to the discharge, deposit or disposal of any storm water and/or runoff to the storm drain system and/or receiving waters within any unincorporated area covered by a NPDES municipal storm water permit (Ord. 98-0021 § 1 (part), 1998)." Therefore, the County Code incorporates the requirements of its storm water ordinance and its MS4 permit by reference in the County Code. The SUSMP is not explicitly mentioned in the code.

The County has generally incorporated SUSMP requirements into its building code at Appendix Chapter 33 (Excavation and Grading). Section 3319 (NPDES Compliance) requires that all grading plans and permits comply with the NPDES permit, which includes the SUSMP provisions, although SUSMP is not explicitly mentioned in language of the code.

Section 3319.2 requires that a storm water pollution prevention plan (SWPPP) be issued prior to the issuance of a grading permit. Section 3319.3 requires, in addition to the SWPPP, a wet weather erosion control plan (WWECP) for grading activities that are not expected to be completed prior to November 1 of any year. The WWECP must be filed by October 1 and the additional BMPs required by the plan must be in place on the site by October 15. Additional plan checking fees (equal in amount to 10 percent of the original grading fee) must accompany the application for the WWECP. Section 3319.4 describes the effect of noncompliance of these provisions and identifies penalties and remedies.

SUSMP implementation is cross-referenced to the excavation and grading section of the code under Section 106.4.3 of the building code (Information on Plans and Specifications) where it states, "The plans shall show all mitigation measures required under the NPDES permit issued to the County of Los Angeles. For the application of NPDES permit requirements as they apply to grading plans and permits, see Appendix Chapter 33 of this code."

The review team did not collect specific information about incorporating SUSMP requirements into the County's general plan because the Department of Public Works was the only agency evaluated; however, reviews and approvals other County agencies (including the Department of Regional Planning) are required during the SUSMP review and approval process. Review

responsibility by the Department of Regional Planning includes CEQA determination and identification of whether a project is discretionary or ministerial.

### SUSMP Project Selection

Drainage and grading proposals for nonresidential development projects that are not related to a subdivision are reviewed by the Building and Safety Division within the Department of Public Works. Proposals that require building permits or grading permits (including retaining walls) are flagged for review by drainage engineers who have been trained in NPDES and SUSMP requirements. Preliminary conditioning for nonresidential development occurs following Building and Safety Division review to determine the appropriate maximum storm water discharge rate, discharge location(s), and the location of the required SUSMP treatment facilities, if applicable.

The Land Development Division within the Department of Public Works reviews drainage and grading proposals for all subdivision projects. Preliminary conditioning occurs following an applicant's submittal of a "tentative map" by the Subdivision Plan Checking Section, Grading and Drainage Unit within the Land Development Division. A "drainage concept" plan is evaluated at this point for the maximum storm water discharge rate, preliminary sizing, outfall(s), and identification of structural and/or nonstructural SUSMP treatment controls, if applicable.

The Significant Ecological Areas (SEA) Map was still under review by the State at the time our visit. Eventually, this map will be digitized for easier use in the plan review process, which is expected to result in an ability to identify the SEA boundary at a higher resolution for inclusion as an environmentally sensitive area (ESA) subject to SUSMP provisions.

Since February 2002, the County conditioned approximately 200 projects for SUSMP BMPs. The projects selected for SUSMP controls by the County are the standard projects and activities included in the California Water Quality Control Board Los Angeles Region SUSMP along with the addition of outdoor hazardous material, waste handling or storage areas; commercial or industrial waste facilities; outdoor manufacturing areas; outdoor horticulture activities, animal slaughtering and confinement operations, pet care facilities, stables, and kennels.

### BMP Selection

The Building and Safety Division and the Land Development Division use a "Grading Review Sheet" that specifically includes SUSMP requirements and thresholds and a notice that BMPs to satisfy the SUSMP requirements must be incorporated into the project grading plans.

In addition to the preliminary SUSMP BMP selection that occurs through the Building and Safety Division's review processes described above, the division's Grading and Drainage Section reviewers also use a SUSMP "Correction Sheet" for each project. This sheet provides information to the developer and facilitates continuity for County reviewers during the plan review process. In addition to providing a list of new development and redevelopment projects and activities that require SUSMP BMPs, the sheet provides information on agency referrals for related County permits, including an annual operating permit for a structural BMP (for nonresidential projects).

The Environmental Programs Division of the Department of Public Works also reviews all nonresidential development projects for on-site SUSMP treatment facility adequacy and maintenance permit requirements.

The County relies on the State of California BMP Manual that has since been revised. This manual is the primary technical basis for the County staff's BMP knowledge and endorsement of new development and redevelopment BMPs and standards, although the County is continuously reviewing BMP performance information (design, operation, and maintenance). County staff participate on the Los Angeles BMP Task Force and the State Task Force for the manual revision project. County staff with SUSMP responsibility also sit on a technical review committee within the County to foster communication among the divisions about BMP performance and related issues.

The identification of pollutants to target for SUSMP BMPs appears to be based solely on the generic SUSMP discussion included with the MS4 permit. Identification and targeting of other specific pollutants of concern or pollutant generating areas were not noted during the review.

#### Design Standards

Building and Safety Division's SUSMP "Correction Sheet" (described in more detail above) provides the detailed design standards for projects and activities requiring SUSMP BMPs, including criteria for redevelopment projects; hydraulic and hydrology requirements; and appendices for flow calculations, maintenance covenants, a list of sample BMPs that are "favored" by the County for implementing SUSMP requirements, and a catch basin inlet stencil (template).

The Environmental Programs Division requires industrial waste operating permits for all treatment devices on nonresidential private property. In addition to reviewing and approving the peak mitigated flow rate (the  $Q_{PM}$ ), these permits include operation and maintenance requirements, including annual inspections.

The Environmental Programs Division of the Department of Public Works reviews all nonresidential development projects for on-site SUSMP treatment facility adequacy, including verification that the appropriate design standards have been incorporated and signed-off on by either the Land Development Division or the Building and Safety Division. The County encourages new development proposals to meet the  $Q_{PM}$  rather than a volume-based standard, although several existing examples of volume-based controls were identified during the field visits.

The County has hired a consultant to evaluate peak flow control and to determine numeric criteria to prevent or minimize erosion of natural stream channels and banks caused by urbanization. The findings of this study could result in changes to the design standards used by the County in its plan review and approval process related to implementing the SUSMP requirements.



All single-family residential hillside developments (regardless of footprint size) are evaluated in a similar manner by the Building and Safety Division.

*Waivers.* The County has not granted any waivers for SUSMP requirements and has no provisions for doing so.

#### Project Approval and Conditioning

Each of the three divisions of the Department of Public Works with SUSMP implementation responsibility have developed and are using preliminary project review sheets/checklists that clearly identify SUSMP applicability for both discretionary and ministerial projects (e.g., the Grading Review Sheet used by the Building and Safety and Land Development Divisions). Non-subdivision project approval and preliminary conditioning are accomplished by the Building and Safety Division's plan checkers and require an additional document (the "Correction Sheet") as part of the approval and conditioning process. The review checklist prepared by the Land Development Division's Subdivision Plan Checking Section (Drainage Unit) is used to verify the inclusion of SUSMP BMPs, where appropriate, prior to the approval and conditioning of the plans.

No application requiring SUSMPs is approved until the Environmental Programs Division's SUSMP Plan Check Instruction Sheet is completed. This checklist identifies projects for which an off-site disposal permit is required (including discharges from certain SUSMP BMPs). This checklist also includes design criteria for both treatment and source control BMPs.

Although no specific evaluation was made of the training given to counter staff to enable them to identify applicable projects, it was noted that feedback and departmental contact information are generally provided to applicants only after the initial review of the plans (e.g., the SUSMP Plan Check Instruction Sheet used by the Environmental Programs Division).

Public project identification occurs via interdepartmental coordination, but the review and sign-off process for public projects is identical to the process for private projects.

#### Education

Regular (i.e., monthly) meetings occur among the divisions with NPDES storm water responsibility within the Department of Public Works (e.g., Land Development, Building and Safety, and Environmental Programs) to establish procedures and identify and rectify problems. A corresponding project-by-project coordination effort between other cooperating County agencies with SUSMP responsibilities or contract permittees was not identified during the evaluation.

Training (including cross training of County staff having plan review and in-field SUSMP-related responsibilities) is the responsibility of each division. Both "desk" and field training occurs at least annually within each division, typically for high level (management) staff from different divisions who have been trained together. These managers then train their staff in turn either in the office or through "tail gate" meetings in the field. Some cross training is occurring but not in a systematic manner, and it is not SUSMP-specific.

Outreach to developers tends to be reactive rather than proactive in that feedback about how well a specific preliminary map or plan submission meets, or is deficient in meeting, the SUSMP requirements is provided, but no generic up-front information is provided. In addition to the County's Web site, SUSMP information is available for dissemination through coordinated events with the Building Industry Association and the County's BMP Task Force. The County does not want to be perceived as endorsing or encouraging particular BMPs, particularly if their track record is relatively unproven.

### 2.1.2 *Field Evaluation*

#### Tracking and Inspection

The Land Development Division's review checklist (described above) can also be used to identify missing elements from the Drainage Concept Plan and the Storm Water Quality Plan. (These checklists were used to generate suitable field visit locations during this program review.) In all cases, however, the sample checklists were completely filled out for all categories, meaning that the initial submittal of the Tentative Map was wholly deficient with respect to SUSMP requirements.

Construction site inspectors are the first line of defense for identifying SUSMP implementation on grading projects. This is particularly important on single-family residential hillside developments because there often is no other opportunity for inspection.

The Environmental Programs Division of the Department of Public Works verifies the appropriateness of SUSMP structural BMPs and conducts annual maintenance inspections of all nonresidential development projects during their post-construction phase. The Environmental Programs Division also reviews source control measures on private industrial and commercial property during routine inspections. The Environmental Programs Division issues violation notices when BMP maintenance problems, such as missing filter media, are noted. Follow-up inspections confirm that corrective action has taken place.

#### Treatment Control BMP Implementation

The review team visited eight SUSMP projects, half of them light industrial/commercial projects and the other half residential projects. The field reviews indicated an overwhelming reliance on the use of structural flow control inserts such as continuous deflective separation (CDS) technology units and fossil filters to implement the treatment control SUSMP requirements at nonresidential sites. CDS units are also being installed in residential areas, although several examples of volume-based controls (infiltration basins, wet ponds, constructed wetlands) were seen in the field. These are no longer encouraged by the County due to ongoing performance and maintenance and because of the underlying geological formations and soils considerations that contribute to the clogging of infiltration basins. At all of the nonresidential sites visited during the review except one that was missing its fossil filter (the catch basin insert was able to hold a filter but the filter was not present), treatment control BMPs were installed in accordance with the approved plans.

### Source Control BMP Implementation

There appears to be a disconnect between the approval and conditioning of planned source control SUSMP BMPs and the actual installation and implementation of these source control practices in the field. For example, storm drain stenciling was absent from all field sites visited where they had been called for in the plans. The Land Development Division is currently working to ensure that stenciling instructions are consistently shown on construction plans and that the Construction Division ensures catch basins are stenciled prior to final clearance on the inspection.

### Maintenance

Maintenance covenants/agreements are required for the ongoing operation and maintenance of structural or treatment SUSMP devices.

Maintenance recordkeeping for structural treatment BMPs for nonresidential properties occurs as part of the industrial waste disposal operating permit process. The Environmental Programs Division conducts annual inspections of facilities under permit, at which time facility storm water maintenance logs are reviewed for compliance with the permit requirements that are specific to each of the BMPs. Results of these inspections are entered into a database that the Environmental Programs Division operates for all facilities holding a permit.

The County favors centralized treatment units to ease the maintenance burden, which translates into the use of fewer, larger units being located within County rights-of-way (even when they serve private developments) rather than numerous catch basin inserts.

### 2.1.3 *Review Findings*

#### Areas for Improvement

- *SUSMP Project Selection limits the application of the Environmentally Sensitive Areas (ESAs) provision.*

The permit requires under Section 2. e) the “implementation of SUSMP provisions no later than September 2, 2002, for all projects located in or directly adjacent to or discharging directly to an ESA, where development will:

- (1) Discharge storm water and urban runoff that is likely to impact a sensitive biological species or habitat ...”

Implementation of the ESA provision appears to be limited to sensitive ecological areas (SEAs) based on the SEA map and for waters that are subject to TMDLs. The County should broaden implementation of the ESA SUSMP trigger to include areas identified in the Basin Plan as supporting the “Rare, Threatened, or Endangered Species (RARE)” beneficial use.

#### Recommendations

- *The application of specific BMPs did not necessarily match the pollutant sources.*

The identification and application of specific BMPs appeared to be based solely on the generic SUSMP discussion included with the MS4 permit rather than on specific pollutants of concern. Identification and targeting of other specific pollutants of concern or pollutant generating areas (pervious or impervious) were not noted during the review. The County should revise their development planning process to identify specific pollutants of concern from each development and the BMP or combination of BMPs best suited to reduce those pollutants.

- *The County verifies the maintenance of post-construction BMPs for only a sub-set of the applicable sites.*  
Maintenance recordkeeping for structural treatment BMPs for nonresidential properties occurs as part of the industrial waste disposal operating permit process. The Environmental Programs Division conducts annual inspections of facilities under permit. Inspection and/or verification of maintenance for residential structural treatment BMPs do not occur. Additionally, the County does not have a program in place to assess the effectiveness of post-construction BMPs (source or treatment). The County should conduct periodic inspections of source and treatment control BMPs at all sites to ensure proper installation, operation, and maintenance of controls. The County should also create tenant education programs that address maintenance requirements of BMPs. For example, the County could install or require, for appropriate locations, signage indicating that a treatment control BMP is present and its intended purpose.
- *Cross training of staff could be improved.*  
Cross training of staff who have plan review and approval responsibilities and staff who have in-field SUSMP-related responsibilities is the responsibility of each division. The County should consider cross training of staff in more of a formal, systematic manner that focuses on SUSMP-specific requirements and issues.
- *The geographic magnitude and diversity of the County creates complicates implementation.*  
The County is responsible for a variety of activities to implement the SUSMP over a vast geographic area. About one-third of the County's 4,100 square mile area is unincorporated. When the "Contract Cities" where the County is providing SUSMP review are added to this, the total area is about 2,000 square miles. The SUSMP process could benefit from a reconsideration of how the review, approval, and implementation of storm water management are coordinated within the County. These functions are currently split between central and regional offices among three different divisions within the Department of Public Works.

#### Notable Program Aspects

- *The County applies the SUSMP requirements to a slightly broader range of projects than the eight categories defined in the permit.*  
All single-family residential hillside developments (regardless of footprint size) trigger the SUSMP requirements.
- *A high rate of SUSMP implementation is occurring within the County.*

The County has conditioned approximately 200 projects for SUSMP BMPs since February 2002. During the last reporting period under its MS4 annual report, the County conditioned 70 projects for SUSMP requirements between February and June 2002, representing about 12 percent of all projects.

- *BMPs installed at nonresidential developments are inspected annually.*  
The Environmental Programs Division conducts annual inspections of facilities under permit, at which time facility storm water maintenance logs are reviewed for compliance with the permit requirements that are specific to each of the BMPs. Results of these inspections are entered into a database that the Environmental Programs Division maintains for each facility holding a permit.
- *The County's information management capabilities and BMP tracking will benefit SUSMP implementation.*  
The County has initiated development of a Web-based data entry and tracking system that should result in substantially enhanced information management and reduce the possibility that oversights may occur between the County divisions that have SUSMP responsibilities.

## 2.2 City of Los Angeles

### 2.2.1 *Development Planning Requirements in Los Angeles*

#### Ordinance/Legal Authority

The City's primary ordinance addressing development planning is Ordinance No. 173494, which was passed in September 2000. The ordinance amends and expands existing sections of the Los Angeles Municipal Code to provide storm water pollution control for planning and construction of development and redevelopment projects. Rather than directly incorporating all of the development planning requirements, the ordinance refers to existing implementation guidance and technical criteria. This approach resulted in an ordinance that is only five pages in length and provides the City the flexibility to alter the development planning process and technical criteria without modifying the ordinance.

Specific excerpts of the ordinance include the following:

Section 1. Chapter IX, Article 1, Section 91.106.4.1 was amended by providing the Department of Building and Safety the authority to withhold grading and/or building permits for developments until the applicant incorporates all BMPs necessary to control storm water pollution in accordance with the "*Development Best Management Practices Handbook, Part B Planning Activities*" (Development Handbook) and the City receives a recorded Covenant and Agreement (C&A) declaring that the BMPs shall be installed and/or constructed and maintained in proper working condition at all times.

Section 4. Chapter VI, Article 4.4, Section 64.72 was amended to establish the objective, scope and delegation of responsibilities for other City departments. Specifically, the section authorizes the Board of Public Works to define and adopt storm water pollution control measures, grant waivers, conduct inspections, cite violators for infractions, and impose fines. Section 64.72.01 references the Development Handbook and states "... the Board of Public Works may from time to time, as it deems appropriate, change, modify, revise or alter storm water pollution control best management practices."

#### SUSMP Project Selection

The City adheres to the development and significant redevelopment project categories listed in the MS4 permit and the California Water Quality Control Board Los Angeles Region SUSMP. The site-specific mitigation requirements are also adopted from the MS4 permit. Although, some additional discretionary projects may be required to address storm water pollution as a result of the CEQA process, the City has not formally expanded the universe of applicable SUSMP project categories or site-specific mitigation projects.

From September 2000 to March 2003, the City had conditioned and approved approximately 41 discretionary projects. In contrast, from September 2002 to March 2003 the City had conditioned and approved approximately 80 ministerial projects with another 16 pending approval. The City forecasts that the number of ministerial projects will be significantly greater

than the number of discretionary projects. Also, the total numbers for both types of projects will fluctuate based on the performance of the local and regional economy.

### BMP Selection

The Development Handbook serves as the City's primary guide for BMP selection and provides selection matrices for both the SUSMP project categories and for projects with characteristics requiring site-specific mitigation. Table 3-1 of the handbook applies to the SUSMP project categories and consists of a matrix that lists the required source control BMPs and instructs the applicant to "select one or more applicable and appropriate treatment control BMPs from the list." The list of treatment control BMPs was adopted directly from the California Water Quality Control Board Los Angeles Region SUSMP.

While the City does not endorse specific treatment control BMPs, they have adopted prescriptive methods for several of the SUSMP project categories. The prescriptive methods, listed in Appendix C of the Development Handbook, provide detailed descriptions and specifications for each of the required source and treatment control BMPs. Applicants are not required to use the prescriptive methods but are advised that their use will streamline the review and approval process. Prescriptive methods are available for stand-alone restaurants, automotive repair shops, retail gasoline outlets, and parking lots (up to 20,000 square feet or 50 parking spaces).

Table 3-3 of the handbook applies to projects with characteristics requiring site-specific mitigation and consists of a matrix that lists the potential source and treatment control BMPs. Unlike Table 3-1 BMPs, specific source control BMPs are not required and there are no prescriptive methods.

The City developed the *Reference Guide for Storm Water Best Management Practices* (Reference Guide) in July 2000 to provide general guidance to City managers, engineers, planners, and field staff regarding how to identify, assess, and select appropriate BMPs. The Reference Guide is divided into construction, source control, and treatment control BMP sections for ease of use. City staff indicated that the Reference Guide was initially helpful in elevating their technical expertise and is currently used as a reference guide and training tool for staff. Additional descriptions of selected source and treatment control BMPs are provided in Appendix F of the Development Handbook. In addition, the City expects to use the State of California BMP Manual that is currently under revision.

The identification of pollutants to target for SUSMP BMPs appeared to be based solely on the generic SUSMP discussion included with the MS4 permit and the BMP matrices within the Development Handbook. Identification and targeting of other specific pollutants of concern or pollutant generating areas (pervious or impervious) were not noted during the review.

### Design Standards

The City does not officially prescribe a specific volume based or flow rate numeric sizing criteria in the Development Handbook. However, through consultation, applicants are instructed to treat or infiltrate projected runoff for the new development by an amount equal to or greater than the volume of runoff produced from a 0.75 inch storm event (Volumetric Treatment Control BMP Option (3) in the MS4 permit). While Appendix G of the Development Handbook provides

sample calculation sheets that were copied from the Los Angeles County SUSMP Manual (LACDPW, 2000), Watershed Protection Division (WPD) staff created their own calculation spreadsheet using macros to verify data supplied by the applicant. No other flow or volume based criteria are routinely used or specifically endorsed.

*Waivers.* Ordinance No. 173494 includes a provision for granting waivers and requires that funds collected in lieu of treatment be deposited in a Storm Water Pollution Abatement Fund. The waiver may be granted only when all other structural or treatment control BMPs have been considered and deemed infeasible. The City has adopted the recognized situations of impracticability defined in the California Water Quality Control Board Los Angeles Region SUSMP (a complete list is provided in the City of Glendale section of this report). The City also adopted the provision that any other justification for impracticability must be separately petitioned and submitted to the Regional Board for consideration as defined in the California Water Quality Control Board Los Angeles Region SUSMP. The City can grant a waiver after approval by the Regional Board.

The City of Los Angeles has not issued any waivers to date.

#### Project Approval and Conditioning

The Department of City Planning (DCP) and the Department of Building and Safety (LADBS) mainly process development project approvals with oversight and technical guidance provided by the Department of Public Works' WPD. WPD provides oversight in the form of project applicability and quality assurance reviews, applicant communication, project tracking, and program administration. Technical support is provided for treatment and source control BMP selection and approval, numeric sizing criteria, and maintenance requirements. The WPD has a SUSMP Implementation Section staffed by three full-time equivalents (FTEs) (one for discretionary projects and two for ministerial projects).

Entitlement approvals (i.e., discretionary projects) are primarily processed by DCP with WPD oversight. Building and grading permits (i.e., ministerial projects) and public projects are processed by LADBS with technical assistance and oversight from WPD. Counter staff from DCP and LADBS initially screen projects for applicability and are often the first City employees to inform the applicant of the need for storm water controls and SUSMP requirements. As the applicant advances through the approval process, WPD SUSMP implementation staff provide additional and more detailed consultation and instruction until the final plans conform to all of the SUSMP requirements.

*Discretionary Projects.* The City uses the CEQA process as the primary mechanism to ensure that the SUSMP requirements are incorporated into the discretionary project approval process. When an applicant submits an application for a discretionary project, DCP counter staff determine whether the project qualifies for a CEQA exemption. If the project is not exempt, the applicant files an Environmental Assessment Form (EAF) and is informed that storm water controls will be required. At this point, applicants are instructed to contact DCP and/or WPD staff for consultation and to access the Development Handbook on WPD's website at [www.lastormwater.org](http://www.lastormwater.org). In some cases, more experienced applicants are aware of the process and requirements and have already incorporated appropriate BMPs.



DCP plan checkers review the EAF, project plans, and the Development Handbook to ensure appropriate source and treatment control BMPs are incorporated into the project plans. The project plans are then routed to WPD for additional oversight and review. After completing its review, WPD provides DCP a letter that outlines the required BMPs for project approval. The letter identifies and describes in narrative terms the treatment control and source control BMPs to be installed. At the time of the review, the treatment control BMPs and any constructed source control BMPs (e.g., trash enclosure, roofed area) were clearly noted on the plans. Other required operational source control BMPs appeared to be only listed in the interdepartmental letter. At any time during the review process, DCP and/or WPD staff may request that the applicant make alterations and updates to the submitted plans. The project owner is also required to submit a Covenant and Agreement (C&A) document to DCP as a condition for project approval (see the maintenance discussion in section 2.2.2, *Field Evaluation*, for additional C&A information). Both DCP and WPD retain complete files of all SUSMP applicable information. Following approval by DCP, building/grading permits are obtained from LADBS.

*Ministerial projects.* All ministerial projects are entered into the City's electronic plan check and inspection system (PCIS) upon receipt of design plans at LADBS' counter. During review of the plans, LADBS counter staff determine whether the project meets any of the SUSMP categories or displays any of the characteristics of site-specific mitigation. A one-page notice has been posted at all plan check office locations that informs developers that compliance with new storm water regulations is required for all new construction, significant redevelopment, and projects with characteristics requiring site-specific mitigation. The notice provides a brief explanation as to why a storm water mitigation plan is required and instructs the applicant to contact WPD for questions and additional information. The qualifying projects are then routed to a LADBS plan checker who reviews the plans, verifies the SUSMP applicability, and provides the applicant with a corrections sheet that refers the applicant to WPD for clearance of storm water requirements.

Applicants then work with WPD staff to ensure the plans contain all the appropriate source and treatment control BMPs and that a C&A has been recorded with the Los Angeles County Recorder and submitted to WPD. WPD staff perform the majority of the applicant communication and education, ensure the applicability of the BMP(s), verify that appropriate sizing criteria were used for all treatment control BMPs, and review and approve the C&A. Similar to discretionary projects, the treatment control BMPs and any constructed source control BMPs (e.g., trash enclosure, roofed area) are clearly noted on the final plans, including any storm water stenciling requirements. The additional required operational source control BMPs are incorporated within the C&A requirements, such as on-going BMP maintenance. WPD maintains all of the SUSMP applicable information in its project files. Ultimately, WPD staff must stamp the final plans "Approved" and clear the project in PCIS prior to issuance of building and grading permits by LADBS.

### Education

WPD sponsors regular coordination meetings with city department staff that includes DCP, LADBS, Contract Administration, Bureau of Engineering, Environment Affairs Department, Port of Los Angeles, DWP, and Airports to discuss general program issues, implementation

issues and answer questions. From 2000 to 2002, monthly coordination meetings were held; since the beginning of 2003 bi-monthly meetings are being held. City staff indicated that the monthly and bi-monthly meetings have been instrumental in the successful implementation of the SUSMP program. In addition, WPD, LADBS, and DCP staff worked together throughout 2000 to the present to develop and implement the SUSMP program for discretionary and ministerial projects.

In 2000 and 2001, WPD provided training to DCP and LADBS staff on the new storm water requirements for new and redevelopment projects. The training included SUSMP requirements, BMPs, and flow calculations. The Development Handbook was used as the main training material, along with past development projects.

Since 2001, LADBS had posted in all plan check office locations a one-page notice indicating that storm water mitigation plans are required for all new construction, significant redevelopment, and projects with characteristics requiring site-specific mitigation. The notice provides a brief explanation as to why the mitigation plan is required and instructs the applicant to contact WPD for questions and additional information.

In 2002, WPD provided internal training to staff on the new storm water requirements for new and redevelopment projects. This 4-session training with final test included SUSMP requirements, BMPs, flow calculations, and plan review. The Development Handbook was used as the main training material, along with past development projects.

The Development Handbook is located on [www.lastormwater.org](http://www.lastormwater.org) and provides all new developers with the entire requirements of the new storm water regulations. WPD staff refer developers to this site for not only background information, but for BMP options, vendor information, flow calculation sheets, and C&A forms.

### *2.2.2 Field Evaluation*

#### Tracking and Inspection

WPD tracks the implementation status of both the discretionary and ministerial projects in two databases. Each database contains a project identifier, ownership, contact and location information, treatment control type, and key approval information (e.g., date submitted, reviewer, status, and clearance or sign-off date). Information regarding source control BMPs, installation date, inspections, receiving water, and coordinates are not maintained. At the time of the review, the City had just initiated plans to incorporate the BMP database into the City's GIS system. This merger will ultimately enhance information management, reduce the possibility that duplicate BMPs may occur in sub-areas, and enable evaluation of SUSMP implementation effectiveness on a regional basis.

To ensure that all storm water BMPs are constructed or installed in accordance with the approved plans, a Storm Water Observation Report (SOR) must be submitted to the City prior to the issuance of the Certificate of Occupancy. The SOR is to be prepared, signed, and stamped by a California licensed engineer or architect. In addition, the constructed or installed BMPs are to

be inspected by LADBS field staff during their normal inspection process. WPD does not routinely conduct inspections of constructed or installed BMPs.

The City is not currently conducting inspections of BMPs after projects are completed.

#### Treatment Control BMP Implementation

The City has approved a wide range of treatment control BMPs for both discretionary and ministerial projects. Approved BMPs include, but are not limited to, catch basin inserts and filters, clarifiers, CDS units, Stormceptor units, oil/water separators, sand filters, Baysaver separation systems, detention basins, and infiltration ditches and swales. A review of the discretionary projects spreadsheet showed that approximately 50 percent of the 41 sites used catch basin inserts (or equivalents), approximately 20 percent used structural end-of-pipe systems (e.g., Stormceptors and clarifiers), approximately 15 percent used detention or infiltration systems, and approximately 15 percent used multiple BMPs in series. The use of BMPs in series was occurring in the some of the most recently approved projects (i.e., 2002 – 2003). Catch basin inserts are the predominant BMP for approved ministerial projects.

Two discretionary and one ministerial projects were visited during the course of the review. Two of the projects were completed and the individual treatment control BMPs were operational. At these two sites, the treatment control BMPs had been installed as specified on the plans, a SOR had been received and was on file, and C&As and associated operation and maintenance plans were recorded and present. The third site visited was a university parking lot that was under construction. The treatment control BMPs consisted of a large sand filter infiltration unit (measuring approximately 80 feet in length) and one catch basin insert, which had yet to be installed. The C&A and operation and maintenance plan was on file.

The specifications, locations, and other technical criteria for the treatment control BMPs were clearly displayed on the approved plans for both discretionary and ministerial projects, which facilitates the correct installation and the inspection by both the licensed engineer or architect and the LADBS field inspector.

#### Source Control BMP Implementation

Tables 3-1 and 3-3 of the Development Handbook list 15 individual source control BMPs applicable to SUSMP project categories and projects with characteristics requiring site-specific mitigation. Commonly applied source control BMPs included inlet stenciling, installing enclosed trash containers, etc. Additional requirements included maintaining treatment control devices in accordance with the manufacturer's specifications, maintaining a log verifying that the source control BMPs are properly deployed and maintained, and ensuring BMP maintenance and operation during transfer of ownership. The City maintains a list of boilerplate source control BMP requirements that can be inserted into documents and plans for applicable discretionary and ministerial projects.

WPD staff are tasked with evaluating, conditioning, and ultimately approving the source control BMPs for both discretionary and ministerial projects. For ministerial projects, the required source control BMPs are included on the final plan's document in the form of construction notes and/or in the C&A. For discretionary projects, the required source control BMPs appeared to be

included only in the interdepartmental approval letter from WPD to DCP. The source control BMPs were not listed on the reviewed approved plans.

As previously stated, two discretionary projects were visited during the on-site review. Construction had been completed at these two discretionary projects. The required source control BMPs, were either not installed, or it could not be determined whether they were being implemented. Inlet stenciling was required at all of the sites but was not present. Frequent parking lot sweeping was required but did not appear to be occurring (i.e., the lot was dirty and debris was present). The required source control BMPs were listed in the interdepartmental letter but were not included on the approved plans.

### Maintenance

Maintenance of BMPs is the sole responsibility of the owner/tenant. Only those BMPs installed at public agency projects are to be maintained by the City. The City requires a recorded C&A to be submitted along with the final design plans. The C&A must be signed by the legal owner and recorded with the County Recorder. The City has the authority to withhold the grading or building permit until this requirement is satisfied. The owner must also submit an operation and maintenance (O&M) plan as an attachment to the C&A. The O&M plan must describe the system's operation and maintenance procedures, operating schedule, maintenance frequency, and routine service schedule. The O&M plan is a required component of the C&A and is a binding legal document.

The City does not educate tenants or require (or provide) signage indicating the purpose and operation of the treatment controls, nor does the City send out reminders about maintenance or conduct periodic inspections to verify that maintenance is performed.

### 2.2.3 *Review Findings*

#### Areas for Improvement

- *Preservation of natural areas within a development footprint was not a component of the City's SUSMP program.*

Watershed Protection Division (WPD) staff indicated that preserving natural areas was addressed in the City's landscape ordinance and natural areas were not routinely evaluated as part of their project conditioning and approval process. Staff were not aware of the exact required percentage, if any, of natural areas to be preserved at single-family residential developments. City staff tasked with approving source control BMPs should be familiar with these other City provisions and ordinances if they are to be used effectively as stand-alone BMPs or in conjunction with other BMPs.

#### Recommendations

- *The application of specific BMPs did not necessarily match the pollutant sources.*  
The identification and application of specific BMPs appeared to be based solely on the generic SUSMP discussion included with the MS4 permit and the anticipated pollutant list contained within BMP matrices in the Development Handbook rather than on specific

pollutants of concern. Identification and targeting of other specific pollutants of concern or pollutant generating areas (pervious or impervious) were not noted during the review. The City should revise their development planning process to identify specific pollutants of concern from each development and the BMP or combination of BMPs best suited to reduce those pollutants.

- *Post-construction activities were lacking.*  
The City does not currently conduct inspections to verify that ongoing BMP maintenance has been performed. There is no plan in place to evaluate the effectiveness of installed BMPs. Nor does the City require (or provide) any form of tenant education or notification as to the purpose of the BMPs or reminders of maintenance schedules and commitments. The City should consider periodic inspections of source and treatment control BMPs to ensure proper installation, operation, and maintenance of controls. The City should also consider creating tenant education programs. For example, the City could install or require, for appropriate locations, signage indicating that a treatment control BMP is present and its intended purpose.

#### Notable Program Aspects

- *The WPD provides leadership, oversight, and technical support to other City departments implementing the SUSMP program.*  
The WPD has a SUSMP Implementation Section staffed with three full-time equivalents (FTEs) (one for discretionary and two for ministerial) to provide direct assistance to the Department of City Planning (DCP) and the Department of Building and Safety (LADBS). Their oversight and support provides continuity across the discretionary, ministerial, and public agency project conditioning and approval process and ensures adherence to the SUSMP requirements.
- *Regular coordination meetings provide effective staff training and ensure the consistent application of SUSMP requirements and uniformity to project applicants.*  
The monthly meetings sponsored by WPD provide effective training to implementation staff as real issues and remedies are discussed. In addition, the meetings ensure the consistent application of the program, which ultimately ensures that repeat project applicants learn and incorporate the required design elements into their original plans.
- *The Development Planning ordinance provides the City flexibility in implementing the SUSMP requirements.*  
By referencing the technical implementation guide (the Development Handbook), the City is free to alter, modify or change its technical criteria or conditioning and approval process without having to approve a revised ordinance.
- *A C&A document must be recorded with the County Recorder and submitted to the City prior to approval for clearance of the grading/building permit.*  
The C&A document is accompanied by an O&M plan, which must describe the system operation and maintenance procedures, operating schedule, maintenance frequency, and

routine service schedule. The O&M plan is a required component of the C&A and is a binding legal document.

- *The City's Project Database with GIS incorporation will benefit SUSMP implementation.*  
For all SUSMP and Site Specific projects, pertinent project information is maintained in a database created by WPD. WPD has begun incorporation of this information into a GIS base tracking system. The City's database will result in substantially enhanced information management, reduce the possibility that duplicate BMPs may occur in sub-areas, and be able to evaluate SUSMP implementation effectiveness on a regional basis.
- *The City's BMP Handbooks benefit SUSMP implementation effectiveness.*  
The City developed two manuals titled: "Development Best Management Handbook Part B-Planning Activities" and "Reference Guide for Stormwater Best Management Practices". These two manuals are used by both City Staff and developers and have facilitated implementation of the SUSMP requirements and ensured consistent application of the program.

## 2.3 City of Santa Monica

### 2.3.1 *Development Planning Requirements in Santa Monica*

#### Ordinance/Legal Authority

The City's primary ordinance addressing development planning is Ordinance No. 1992 passed in 2000 (Chapter 7.10 of the Santa Monica Municipal Code – Urban Runoff Pollution). This ordinance has two main goals: (1) to ensure that project sites maximize on-site percolation of runoff and (2) to ensure that rain water does not become polluted.

Subsection 7.10.040 describes good housekeeping practices that apply to all properties within the City of Santa Monica. These practices include the following:

- Prevent runoff of irrigation water
- Prohibit washing down paved areas
- Prohibit uncovered outdoor storage of unsealed building, lawn, and automotive care containers
- Inspect trash receptacles weekly; receptacles must have solid covers and be closed.
- Prohibit leaks or runoff from vehicles, machinery, and equipment
- Require that parking lots be swept monthly; lots with more than 10 spaces and public parking lots are to be vacuum swept quarterly
- Prohibit dumping and improper storage or disposal of hazardous wastes

Subsection 7.10.050 describes urban runoff reduction requirements for new development. New development is generally defined as any construction project where 50 percent of the structure is improved, or any project that creates or adds at least 5,000 square feet of impervious surfaces. New developments are required to submit an urban runoff mitigation plan to the Department of Environmental and Public Works Management. Details of the urban runoff mitigation plan are discussed below.

Subsection 7.10.060 describes urban runoff requirements for construction sites. For projects that are required to submit a SWPPP to the Regional Board, the City requires that the SWPPP also be submitted to the City at the same time. In addition, the ordinance prohibits runoff containing sediments from leaving the site, tracking of sediment off the site, and washing of vehicles that causes runoff.

Subsection 7.10.070 describes enforcement and penalties. The first violation receives a written notice. Subsequent violations could result in a penalty of up to \$500.

#### SUSMP Project Selection

The City of Santa Monica reviews new developments based on the percentage of the project area disturbed or rebuilt and not the eight categories found in the MS4 permit, allowing the City to address smaller projects, such as single-family homes, which would not typically fall under the SUSMP requirements. The City uses the following thresholds to determine whether post-construction BMPs are required:

- Vacant site or a site where 50 percent or more of the square footage of a structure is removed prior to construction
- Repair/rehabilitation of an existing structure in an amount exceeding 50 percent of the replacement cost of the structure
- Project that (a) results in improvements to 50 percent or more of the square footage of a building, (b) creates or adds at least 5,000 square feet of impervious surfaces, or (c) creates or adds 50 percent or more of impervious surfaces
- City project that does not meet any of the thresholds above, but where runoff controls are feasible and economical.

The City estimates that approximately 70 projects per year (mostly residential single family projects) are required to comply with the new development standards. A breakdown between discretionary and ministerial projects was not available because the data is not recorded in these categories.

#### BMP Selection

BMP selection is left to the project proponent; however, the vast majority of projects choose to implement infiltration pits. The urban runoff packet handed out to developers in Santa Monica includes a sheet listing example BMPs and suggested materials for use in infiltration BMPs.

For technical guidance, the City refers to the Los Angeles County SUSMP Manual.

#### Design Standards

The design standard used by the City of Santa Monica is specified in the City urban runoff ordinance. Project applicants are required to develop an urban runoff mitigation plan that provides for the infiltration or treatment of projected runoff for the new development by an amount equal to or greater than the volume of runoff produced from a storm event (Section 7.10.050(b)). The ordinance defines a storm event as “0.75 inches of rainfall within a consecutive 24-hour period.”

Project applicants are required to complete and sign a two-page Urban Mitigation Plan: Worksheet & Summary. The worksheet asks for the impervious area (in square feet) and multiplies this by 0.0625 feet (or 0.75 inches) to calculate a planned mitigation volume in cubic feet. Infiltration pits or similar controls must be designed to control this volume.

*Waivers.* The City’s urban runoff ordinance (Section 7.10.050(g)) allows waivers in three circumstances:

- Extreme limitations of space for treatment,
- Unfavorable or unstable soil conditions that preclude infiltration, and
- Risk of groundwater contamination because a known unconfined aquifer lies beneath the land surface or an existing or potential underground source of drinking water is less than 10 feet from the soil surface.

For any other justification of a waiver, the City must submit a separate petition to the Regional Board. Projects granted a waiver must pay a fee approximately equal to the savings in cost to the potential BMP into the City’s storm water mitigation fund. The City stated that very few projects actually receive waivers. Waivers are primarily granted to projects within the



downtown core where space limitations or underground parking eliminate any possibility of infiltration practices.

#### Project Approval and Conditioning

A senior engineer, plan reviewer, and the urban runoff coordinator conduct project review and conditioning. The urban mitigation plan worksheet is reviewed and attached to project plans for approval. All projects must be approved by the urban runoff coordinator on final installation before a certificate of occupancy is granted.

#### Education

The City has two primary handouts addressing new development requirements. The Urban Runoff Packet handed out to project proponents summarizes the new development treatment and source control requirements in the City. Included in this packet is the urban mitigation plan worksheet that property owners are required to complete, specifying the type and size of BMP they will use to mitigate storm water runoff. This packet also includes example BMPs, suggested infiltration systems, suggested modular permeable paving products, and a list of storm water references.

The City has also developed a brochure titled “Storm Water BMPs for New Developments,” which is a storm water design primer for developers, architects, and builders. This brochure describes retention practices and illustrates typical BMPs for residential, multifamily, commercial, and industrial developments.

Two city staff members – the urban runoff coordinator and a senior engineer, primarily implement the new development program. Both staff members appeared to be adequately trained on new development requirements and controls.

#### *2.3.2 Field Evaluation*

##### Tracking and Inspection

The urban runoff coordinator has developed an ACCESS database that tracks each project and the date, types of BMPs installed and other relevant information.

The BMPs specified on the urban mitigation plan worksheet must be inspected by the City before a certificate of occupancy is granted. The City’s urban runoff coordinator inspects the installation of all BMPs to ensure they are designed and installed properly, and photographs each installation for the City’s records.

At this time, the City does not conduct inspections of BMPs after projects are completed.

##### Treatment Control BMP Implementation

The primary treatment control BMP used by most projects is the infiltration pit. Some of these pits are extensive. While a depth of 6 feet is average, depths up to 35 feet can be found. The review team visited a variety of projects with infiltration pits, projects under construction as well as completed projects. The evaluation team did not observe any evidence of BMP failures.

The City has also approved several projects that made use of permeable pavement, grassed swales, oil/water separators, and filters. In addition, the City has installed several CDS units near outfalls to capture gross pollutants.

#### Source Control BMP Implementation

The City's ordinance largely requires source control BMPs (or good housekeeping BMPs) on all properties. Exceptions are commercial, industrial, and multi-family buildings where trash receptacles are required to be covered, closed, and inspected weekly.

The City's source control BMPs stress water conservation. The review team observed the City's urban runoff coordinator informing several property owners about improper irrigation system use or pavement washing.

#### Maintenance

The worksheet that is required for all new development projects includes a brief space asking for the maintenance plan. Most worksheets reviewed during the evaluation included only brief information here, such as "periodically inspect." Because most of the BMPs installed in the City are infiltration pits, inspections and maintenance of these practices are difficult to perform unless the BMP is failing.

The City has not encountered any failing infiltration pits; however, most have been installed within the past few years.

The City does not send out reminders about maintenance or conduct periodic inspections to verify that maintenance is performed. At the time of the evaluation, the City was beginning to develop a process to notify owners of older BMPs of the need to perform maintenance. The City began sending out annual proof of inspection letters in March 2003.

### 2.3.3 *Review Findings*

#### Recommendations

- *The application of specific BMPs did not necessarily match the pollutant sources.*  
The SUSMP requires the minimization of storm water pollutants of concern, which requires "the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in that runoff to the maximum extent practicable." The main BMP used in the city is the infiltration pit. Identification and targeting of other specific pollutants of concern or pollutant generating areas (pervious or impervious) were not noted during the review. The City should revise their development planning process to identify specific pollutants of concern from each development and the BMP or combination of BMPs best suited to reduce those pollutants.
- *The City has not yet begun to address the maintenance of structural controls.*  
Although project proponents are required to describe a brief maintenance plan on the City's Urban Mitigation Plan worksheet, the City has not yet developed a program to verify that the BMPs are being maintained. The City should consider requiring projects to submit annual

proof of inspections and conducting periodic inspections of structural or treatment controls to ensure proper installation, operation and maintenance. Priority for inspections could be given to those projects that have not yet submitted annual self-inspection forms. The City should also create tenant education programs that address maintenance requirements of BMPs. For example, the City could install or require, for appropriate locations, signage indicating that a treatment control BMP is present and its intended purpose.

### Notable Program Aspects

- *The City applies the SUSMP requirements to a much broader range of projects than the eight categories defined in the permit.*  
 Because Santa Monica is largely a built-out city, applying the SUSMP categories to new developments in the City would mean that very few projects would be required to implement new development controls. The City has chosen to apply new development requirements to any project that affects at least 50 percent of a site, and this provision greatly increases the number of projects required to implement new development controls. In Santa Monica, this primarily involves single-family residential redevelopments.
- *The City inspects treatment control BMPs as they are being installed.*  
 The City inspector visits all projects installing treatment control BMPs to ensure that they are correctly installed. Most projects install infiltration pits. In these cases, the inspector must visit the project after the pit has been installed but before it is covered with rock and landscaping. The inspector takes photos of the installed BMPs and enters information about the BMP into a citywide database of structural storm water controls.
- *The City has developed a detailed ACCESS database tracking all aspects of SUSMP implementation.*  
 The City's database of BMPs includes more than 700 projects, and it tracks information such as the address, landowner, type of BMP installed, and the storage capacity of the BMP. The database even tracks BMP costs versus total project costs (currently, BMP costs average about 0.71 percent of total project cost). Various reports are available, including total numbers of BMPs, land uses, impermeable and permeable areas, and costs.
- *The City actively enforces illicit discharge and illegal watering ordinances.*  
 During the field evaluation, the City inspector identified at least two instances of illegal watering, issued warnings, and informed the violators of best irrigation lawn water management.
- *The City has designated one person to manage the storm water program.*  
 The City of Santa Monica has a storm water manager who oversees and coordinates all aspects of the storm water program. Having a single contact person for this program facilitates and streamlines the SUSMP program.
- *All project plans go through the Public Works department.*  
 All project applicants, regardless of their size or purpose (including both ministerial and discretionary projects), must fill out an Urban Mitigation Plan Worksheet that is reviewed by

the City's Urban Runoff Coordinator. This ensures that no project "slips through the cracks," and also allows the Urban Runoff Coordinator to inform all applicants of required BMPs, regardless of whether the project is subject to SUSMP requirements.

## 2.4 City of Glendale

### 2.4.1 *Development Planning Requirements in City of Glendale*

#### Ordinance/Legal Authority

Section 13.42 of the Glendale Municipal Code covers storm water and urban runoff pollution prevention control and the SUSMP (it codifies the City's Ordinance No. 5268, published in 2001). In addition to the SUSMP, this chapter also covers pollutant discharge control, illicit discharges and illicit connections, control of pollutants from construction activities, and control of pollutants from new development projects.

Subsection 13.42.030 describes pollutant discharge control. It describes general discharge prohibitions (e.g., hazardous materials), industrial and commercial discharges, and spill dumping and disposal prohibitions.

Subsection 13.42.040 describes illicit discharges and illicit connections. It describes illicit discharges (exempt and conditionally exempt), illicit connections, and industrial waste permits for storm drain connections.

Subsection 13.42.050 describes control of pollutants from construction activities on five or more acres. It states that no person shall commence construction activity on sites 5 acres or greater without first demonstrating that such person has, "filed a 'notice of intent' in compliance with the California General Permit, or has obtained a waste discharge identification number from the State Water Resources Control Board and has prepared a state storm water pollution prevention plan."

Subsection 13.42.060 describes control of pollutants from construction activities on fewer than five acres. For sites between 2 and 5 acres, a SWPPP is required. For smaller sites less than 2 acres, minimum storm water quality protection is required.

Subsection 13.42.070 describes control of pollutants from new development construction projects. The City requires that new development projects submit a SWPPP and that the BMPs be implemented and maintained during and following project completion.

Subsection 13.42.080 describes the SUSMP in detail. The Municipal Code contains language that refers to the adopted California Water Quality Control Board Los Angeles Region SUSMP, which allows the SUSMP to be automatically amended, modified, or changed by regulation or by a court of competent jurisdiction.

#### SUSMP Project Selection

The City of Glendale reviews all project proposals that are submitted to the Public Works Department. Applicants must fill out a SUSMP questionnaire, which is designed to determine whether a project is subject to SUSMP requirements, based on its size and purpose. The questionnaire includes the following thresholds to determine SUSMP applicability:

**Development:**

- Ten or more unit homes
- 1 acre of industrial or commercial impervious surface area
- Automotive service facilities
- Retail gasoline outlets
- Restaurants
- Parking lots with 5,000 square feet or more of surface area, or more than 25 parking spaces
- Redevelopment projects (described below)
- Projects located in an environmentally sensitive area

**Redevelopment:**

- Creating, adding, or replacing 5,000 square feet or more of impervious area on an already developed site
- Altering more than 50 percent of impervious surfaces of a previously existing development
- Replacing impervious surfaces not considered part of routine maintenance activities

The City of Glendale has designated one person to coordinate and oversee the storm water program. One of the storm water manager's responsibilities is to review the form and sign it if SUSMP requirements apply.

The City estimates that approximately 50 SUSMP projects were approved in the past year. A breakdown between discretionary and ministerial was not provided.

**BMP Selection**

Although the City of Glendale does not endorse particular BMPs, the City refers applicants to the Los Angeles County's sizing manual and the City of Los Angeles' matrix of BMPs in "Development Best Management Practices Handbook, Part B: Planning Activities." The City gives handouts describing storm water BMPs to all applicants, regardless of the applicability of SUSMPs or the need for coverage under the California General Construction Permit.

**Design Standards**

The City of Glendale recommends using a time of concentration of 15 minutes and a rainfall intensity of 0.267 inches per to calculate the  $Q_{PM}$ .

*Waivers.* The General Municipal Code includes a Waiver for Impracticability. This waiver may be granted only when all other structural or treatment control BMPs have been considered and deemed infeasible by the director of Public Works. The waiver may be revoked by the Regional Water Quality Control Board for cause and with proper notice. As adopted from the California Water Quality Control Board Los Angeles Region SUSMP, situations of impracticability include, but are not limited to the following:

- Extreme space limitations
- Unfavorable or unstable soil conditions for infiltration
- Potential groundwater contamination

- Any other justification of impracticability approved by the Regional Board or the Regional Board's Executive Officer.

The City of Glendale has not issued any waivers to date.

#### Project Approval and Conditioning

As the projects arrive for review, all the other departments involved verify that the storm water manager has signed the SUSMP form. Prior to approval of the final plan, the storm water manager checks the SUSMP features and a civil engineer from the City's Land Development Division verifies the hydraulics computations.

#### Education

The City of Glendale educates applicants for construction projects through BMP handouts in addition to meetings between the applicant and storm water manager to discuss BMP implementation. Staff in the City's Planning Division have been trained in SUSMP requirements.

The City has developed a series of brochures that discuss applicable BMPs in each of the following areas:

- Food service industry
- Fresh concrete and mortar application
- General construction and site supervision
- Home repair and modeling
- Landscaping, gardening and pest control
- Painting
- Roadwork and paving

#### 2.4.2 *Field Evaluation*

#### Tracking and Inspection

The City of Glendale keeps a binder containing all SUSMP questionnaires and the Environmental Engineering Department maintains a database of the locations of all permanent BMPs. Construction inspectors verify that BMPs are in place before a certification of occupancy is issued. The City does not regularly inspect the BMPs for proper operation and maintenance.

#### Treatment Control BMP Implementation

The field evaluation team visited a school construction site and three commercial parking lots (two completed, one under construction). Treatment controls observed in the field included Stormceptors, vortechnic boxes, filter inserts, and grassy swales. A school under construction employed some low impact development site design features. For example, the rainwater flows down grade across the soccer field and baseball field, encouraging infiltration. BMPs were installed as indicated in the plans and appeared appropriate for the pollutant type and land use.

#### Source Control BMP Implementation

Trash storage bins are covered by a roof and enclosed by doors to prevent contamination of storm water. Non-storm water flows in trash bin areas are diverted to the sanitary sewer, and the

City is considering implementing this practice for loading docks, where feasible. All construction or development projects are required to keep pollutants off exposed surfaces; cover and maintain dumpsters; keep materials out of the rain; designate an area for auto parking, refueling, and maintenance away from gutters and storm drains; maintain portable toilets; and minimize water usage for dust control. Source control BMPs were installed as per plan.

### Maintenance

Post-construction maintenance is the responsibility of the property owner and is conditioned through maintenance agreements and covenants. The site owner/operator must file a notification letter, annually, indicating that the devices were maintained as per agreements. The City does not currently conduct inspections to verify that maintenance has been performed.

### 2.4.3 *Review Findings*

#### Recommendations

- *The application of specific BMPs did not necessarily match the pollutant sources.*  
The SUSMP requires the minimization of storm water pollutants of concern, which requires “the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in that runoff to the maximum extent practicable.” The identification and application of specific BMPs appeared to be based solely on the generic SUSMP discussion included with the MS4 permit rather than on specific pollutants of concern for each type of development. Identification and targeting of other specific pollutants of concern or pollutant generating areas (pervious or impervious) were not noted during the review. The City should revise their development planning process to identify specific pollutants of concern from each development and the BMP or combination of BMPs best suited to reduce those pollutants.
- *The City does not verify maintenance of BMPs.*  
The City of Glendale inspects the installation of BMPs prior to approval of the certificate of occupancy, but does not currently conduct inspections to verify that BMPs are maintained. The City should consider periodic inspections of structural or treatment controls to ensure proper installation, operation and maintenance. Priority for inspections could be given to those projects that have not yet submitted annual self-inspection forms. The City should also create tenant education programs that address maintenance requirements of BMPs. For example, the City could install or require, for appropriate locations, signage indicating that a treatment control BMP is present and its intended purpose.

#### Notable Program Aspects

- *The City has designated one person to manage the storm water program.*  
The City of Glendale has a storm water manager who oversees and coordinates all aspects of the storm water program. Having a single contact person for this program facilitates and streamlines the SUSMP program.



- *All project plans go through the public works department.*  
All projects applicants, regardless of their size or purpose (including both ministerial and discretionary projects), must fill out the SUSMP questionnaire and have it signed by the storm water manager. This ensures that no projects “slip through the cracks,” and also allows the storm water manager to inform all applicants of required BMPs, regardless of whether the project is subject to SUSMP requirements.
- *The City requires owners to submit annual maintenance updates.*  
The City of Glendale requires that applicants file a notification letter annually, verifying that the devices have been maintained as per agreement. These self-inspection forms are required every January 1. The City plans to send reminders next year to those facilities that have not submitted the forms by January 15.

### **3.0 DEVELOPMENT PLANNING PROGRAM RECOMMENDED BY THE REGIONAL BOARD**

The elements below document a “recommended” Development Planning program for Los Angeles permittees to consider as they implement new development and SUSMP programs. Based largely on the SUSMP adopted by the Regional Board and the review of the four Development Planning programs summarized in this report, the elements below are considered to meet, and in some cases exceed, the requirements in the Los Angeles NPDES MS4 permit and the California Water Quality Control Board Los Angeles Region SUSMP.

#### **3.1 Ordinance/Legal Authority**

The permit required that codes and ordinances be amended by August 2002 to give legal effect to the SUSMP requirements and the SUSMP changes contained in SWRCB Order No. 01-182. A recommended local SUSMP ordinance should contain the following elements:

- Clear definitions consistent with the Los Angeles Regional Water Quality Control Board SUSMP
- Identification of specific categories of projects that must comply with the ordinance
- General requirements applicable to all projects
- Requirements applicable to individual priority project categories
- Authority to conduct inspections prior to, during and after construction to verify BMP installation and maintenance
- Requirements to maintain BMPs
- Sanctions and penalties for noncompliance

In addition, the ordinance should, where practicable, refer to technical documents and manuals that specify in more detail the BMPs, standards, and controls to be used on sites. These technical documents and manuals can then be updated and revised as necessary without requiring a change in the ordinance.

#### **3.2 Project Selection Criteria and Checklist**

A recommended Development Planning program should use a checklist or similar formal criteria for determining which projects are required to address development planning requirements. The checklist, or equivalent, should be applied to all projects, including discretionary, ministerial, and public projects. The checklist, or equivalent, must ensure that projects are reviewed for the following five topics:

- Peak flow control in natural drainage systems
- Single-family hillside homes
- SUSMP applicable categories
- Site specific mitigation requirements for projects not requiring a SUSMP
- Redevelopment projects

The project selection checklist should ideally be an interactive, database-driven tool connected to the permittees’ existing Development Planning databases. This would allow consistent application of the checklist by all permittee review staff and retention and review of checklists. Because of the large variety of information required to complete the checklist, interdepartmental

coordination and training are necessary. Specifically, the counter staff at the cooperating departments should be trained in the identification of applicable projects.

The following sections describe what a checklist, or equivalent, must include to determine the applicability of development planning requirements.

### *3.2.1 Peak Flow Control in Natural Drainage Systems*

The checklist must determine whether a project is located in one of the following natural drainage systems (Permit Part 4.D.1):

- Malibu Creek
- Topanga Canyon Creek
- Upper Los Angeles River
- Upper San Gabriel River
- Santa Clara River, and
- Los Angeles County coastal streams (see Basin Plan, Table 2-1).

### *3.2.2 Single-Family Hillside Homes*

The checklist must identify whether a project is a single-family hillside home (Permit Part 4.D.2.b). Hillside is defined as “property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is 25 percent or greater and where grading contemplates cut or fill slopes” (Permit Part 5).

Hillside areas should be clearly identified on base maps so that the permittee’s plan review staff, developers, and others can easily identify these areas in each jurisdiction.

### *3.2.3 SUSMP Applicable Categories*

At a minimum, the checklist should require SUSMP implementation for the following categories of projects (Permit Part 4.D.2.c):

- Single-family hillside residences
- One acre or more of impervious surface area industrial/commercial developments
- Automotive Service Facilities (SIC 5013, 5014, 5541, 7532-7534, 7536-7539)
- Retail gasoline outlets
- Restaurants (SIC 5812)
- Ten or more unit homes (includes single-family homes, multifamily homes, condominiums, and apartments)
- Parking lots of 5,000 square feet or more of surface area or with 25 or more parking spaces
- Projects located in or directly adjacent to or discharging directly to an ESA

If the permittees expand the universe of applicable project categories or modifies the definition of the project categories described above, these additional project categories and modifications should be formally included on the checklist.

### 3.2.4 *Site Specific Mitigation Requirements for Projects Not Requiring a SUSMP*

If a project is not identified as one of the SUSMP categories in section 3.2.3 above, the checklist must determine whether one or more of the following project characteristics exist (Permit Part 4.D.6):

- Vehicle or equipment fueling areas
- Vehicle or equipment maintenance areas, including washing and repair
- Commercial or industrial waste handling or storage
- Outdoor handling or storage of hazardous materials
- Outdoor manufacturing areas
- Outdoor food handling or processing
- Outdoor animal care, confinement, or slaughter
- Outdoor horticulture activities

### 3.2.5 *Redevelopment Projects*

The checklist must identify projects that undergo significant redevelopment (Permit Part 4.D.7). Significant redevelopment means land-disturbing activity that results in the creation or addition or replacement of 5,000 square feet or more of impervious surface area on an already developed site.

For projects where the existing development was not subject to post-development storm water quality control requirements, new development requirements must apply when

- Redevelopment results in an alteration to more than 50 percent of impervious surfaces of a previously existing development (the entire project must be mitigated);
- Redevelopment results in an alteration to less than 50 percent of the impervious surfaces of a previously existing development (only the alteration must be mitigated, and not the entire development).

Redevelopment requirements do not apply where the following exemptions are met:

- Redevelopment does not include routine maintenance activities that are conducted to maintain the original line and grade, hydraulic capacity, original purpose of facility or emergency redevelopment activity required to protect public health and safety
- Existing single-family structures

## 3.3 **Design Standards**

### 3.3.1 *Permit Requirements*

The permit requires that Development Planning numerical design criteria be applied to generally the same projects as the SUSMP applicable categories in section 3.2.3 above. Numerical design criteria generally do not need to be applied if the project has less than 5,000 square feet of impervious surface area or less than one acre of project area for a single-family hillside residential development.

Each permittee must require that post-construction treatment control BMPs incorporate, at a minimum, either a volumetric or flow-based treatment control design standard, or both, as identified below, to mitigate (infiltrate, filter, or treat) storm water runoff (Permit Part 4.D.3):

## a) Volumetric Treatment Control BMP

- (1) The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998); or
- (2) The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in the California Stormwater Best Management Practices Handbook – Industrial/ Commercial (1993); or
- (3) The volume of runoff produced from a 0.75-inch storm event, prior to its discharge to a storm water conveyance system; or
- (4) The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for “treatment” (0.75-inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event.

## b) Flow Based Treatment Control BMP

- (1) The flow of runoff produced from a rain event equal to at least 0.2 inch per hour intensity; or
- (2) The flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County; or
- (3) The flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.

### 3.3.2 Design Standard Selection

Permittees should select a design standard, or allow projects to select from an appropriate series of design standards for BMP design. Projects subject to an Environmental Impact Statement or an Environmental Impact Report should be required to select a design standard that is site specific rather than the default design standard of 0.75 inch. Projects should be designed so that post-development peak storm water discharge rates are less than or equal to pre-development peak storm water discharge rates.

The permittee should provide clear guidance to projects describing the method(s) to use to calculate flow rates and volumes for BMP design. This guidance can be presented as sample worksheets, computer or Web-based programs, or technical guidance documents.

Permittees should also clearly state whether the design standards apply to the entire project footprint or to only the pollutant-generating surfaces (pervious and impervious). This can be articulated in a technical design manual or other guidance provided by the permittee to the development community.

For projects with BMPs in series or parallel, the permittee should develop guidance on calculating effective flow rates and volumes for these BMPs.

### 3.3.3 *Design Standard Waivers*

A waiver from the SUSMP requirements may be granted if impracticability for a specific property can be established. A waiver of impracticability shall be granted only when all other Structural or Treatment Control BMPs have been considered and rejected as infeasible. Recognized situations of impracticability include (i) extreme limitations of space for treatment on a redevelopment project, (ii) unfavorable or unstable soil conditions that preclude infiltration, and (iii) risk of groundwater contamination because a known unconfined aquifer lies beneath the land surface or an existing or potential underground source of drinking water is less than 10 feet from the soil surface. Any other justification for impracticability must be separately petitioned and submitted to the Regional Board for consideration.

Permittees should clearly define the situations in which a waiver could apply and specify the documentation necessary to support a waiver.

Permittees are encouraged to collect an “in-lieu-of” fee when projects cannot implement SUSMP requirements due to impracticability. This fee can then be used to provide regional or other treatment to mitigate any impacts from the waiver.

## 3.4 **BMP Selection**

The project selection criteria and checklist (described in section 3.2) will identify projects that require development planning controls. For these projects, the selection of appropriate BMPs is critical to the overall success of the Development Planning program.

### 3.4.1 *Criteria for BMP selection*

Develop Planning programs must include a technical BMP manual for use by staff and project applicants. A recommended BMP manual will address the following topics:

- Site design requirements such as slope stabilization, preservation of natural areas, and low impact design techniques
- Identification of the pollutants of concern and pollutant generating areas for various project types
- Proper selection and use of source control BMPs, including:
  - A boilerplate list of standard conditions for various project types
  - Required BMPs for specific development categories
  - Educational considerations for BMPs
  - Maintenance requirements for BMPs
- Proper selection and use of structural control BMPs, including:
  - A matrix to assist in selecting the appropriate BMP
  - Design criteria for various BMPs
  - Educational considerations for BMPs
  - Maintenance requirements for BMPs
- Pre-Approved “boiler-plate” BMP descriptions for certain project categories, including:
  - One acre industrial/commercial development
  - Automotive service facilities
  - Retail gasoline outlets
  - Restaurants
  - Parking lots

- Examples of projects that have effectively applied the principles described in the guidance

### 3.4.2 *Limitation on Use of Infiltration BMPs*

Three factors significantly influence the potential for storm water to contaminate groundwater. They are (i) pollutant mobility, (ii) pollutant abundance in storm water, (iii) and soluble fraction of pollutant. The risk of contamination of groundwater may be reduced by pretreatment of storm water. A discussion of limitations and guidance for infiltration practices is contained in *Potential Groundwater Contamination from Intention and Non-Intentional Stormwater Infiltration, Report No. EPA/600/R-94/051, USEPA (1994)*.

In addition, the distance of the groundwater table from the infiltration BMP may also be a factor in determining the risk of contamination. A water table distance separation of 10 feet in depth in California presumptively poses negligible risk for storm water not associated with industrial activity or high vehicular traffic.

Infiltration BMPs are not recommended for areas of industrial activity or areas subject to high vehicular traffic (25,000 or greater average daily traffic (ADT) on a main roadway or 15,000 or more ADT on any intersecting roadway) unless appropriate pretreatment is provided to ensure that groundwater is protected and the infiltration BMP is not rendered ineffective by overload.

Infiltration BMPs can also be limited in areas where slope instability/failure is a concern.

### 3.5 **Final Project Approval and Conditioning**

Final project approval will ensure that the project met the selection criteria for new development projects, that the correct design standards were applied, and that appropriate BMPs were selected for the project. Projects should be conditioned with appropriate source or structural controls and operation and maintenance requirements.

Where multiple departments are involved in approvals, coordinated project approvals including documentation is essential. This could include required project sign-off forms for each department or a computer tracking system that does not allow final project approval without approval from all relevant departments.

The permittee should also ensure that approved project conditions or requirements are available to both permittee inspection staff and the owner or tenant of the project.

### 3.6 **Education**

A development planning program should include education and training for several audiences:

- Permittee employees in targeted positions (whose jobs or activities are engaged in development planning)
- Developer community
- Construction operators
- Property owners

Permittee employees could include plan review staff and inspectors. Targeted permittee employees must be trained annually regarding the development planning requirements (Permit Part 4.D.13). This training should include identification of pollutants of concern, proper BMP selection for treatment and source controls, and proper operation and maintenance of BMPs.

The developer community includes developers, site development engineers, builders, and contractors. The developer community should receive training and education through a variety of mechanisms including workshops, field tours, demonstration projects, meetings, and printed publications such as technical manuals, fact sheets, and newsletters.

Property owners include residential property owners, homeowners associations, commercial/industrial property owners, and public agency property owners. Property owners should receive training and education on the existence and purpose of treatment control and other BMPs, restrictions on the use of these BMPs, maintenance requirements, and what to do when the property is transferred to another owner.

### **3.7 Tracking and Inspection**

Project selection and plan review (essentially the “in-office” activities) are only half of the development planning process for a project. The second half of the development planning process involves adequate tracking, inspection and maintenance of the controls approved on individual plans.

Tracking of projects should begin in the plan review stage with a database or geographic information system (GIS). This database or tracking system should include information on both public and private projects. In addition to the standard information collected for all projects (such as project name, owner, location, start/end date, etc.), the tracking system should also include:

- Source control BMPs (type, number)
- Treatment control BMPs (type, number)
- Lat/Long coordinates of controls using GPS
- Photographs of controls, if necessary
- Maintenance requirements
- Frequency of required maintenance and inspections

Inspections should occur both during construction and after construction is complete to verify as-built conditions for both source control and treatment control BMPs. Inspectors should have access to final approved plans and conditions to ensure BMPs are implemented as designed.

The inspection process will also include inspections to verify that BMP performance and maintenance (further described in section 3.8).

### **3.8 Maintenance**

All developments subject to either SUSMP or site specific plan requirements must provide verification of maintenance provisions for structural and treatment control BMPs (Permit Part 4.D.8). The verification of maintenance can be provided through legal agreements, covenants, CEQA mitigation requirements, or conditional use permits.



The verification must include, at a minimum, the developer's signed statement accepting responsibility for maintenance until the responsible party is legally transferred and one of the following (Permit Part 4.D.8):

- A signed statement from a public entity that it is assuming responsibility for structural or treatment control BMP maintenance and that the BMP meets all local agency design standards, or
- Written conditions in the sales or lease agreement, which requires the recipient to assume responsibility for maintenance and conduct a maintenance inspection at least once a year, or
- Written text in project conditions, covenants, and restrictions (CCRs) for residential properties assigning maintenance responsibilities to the Home Owners Association for maintenance of the structural and treatment control BMPs, or
- Any other legally enforceable agreement that assigns responsibility for the maintenance of post-construction structural or treatment control BMPs.

The permittee should also verify maintenance of structural and treatment control BMPs. This can be accomplished by requiring property owners to submit periodic (annual or semi-annual) certifications that maintenance has been performed. The permittee should verify maintenance by performing inspections of selected structural and treatment control BMPs, by conducting on-site inspections, drive-by inspections, or follow-up to complaints.

Where maintenance will be performed by the permittee or another public agency, the permittee or public agency should provide adequate resources to conduct maintenance, set clear performance standards and schedules for maintenance, develop a system for tracking maintenance, and document maintenance performed in the annual MS4 report.

Where a permittee or public agency will assume maintenance of structural and treatment control BMPs from a private development, the public agency should ensure that adequate resources exist to conduct maintenance of the controls.

### **3.9 Effectiveness Evaluations**

Effectiveness evaluations should be performed on several levels:

- Evaluations of the effectiveness of the project selection criteria and plan review/BMP selection process (*evaluation of project selection and plan review adequacy*)
- Evaluation of the effectiveness of numerical design criteria and SUSMP provisions in protecting water quality (*evaluation of design standard adequacy*)
- Evaluation of the effectiveness of individual, or combinations, of structural or treatment controls, including maintenance (*performance evaluations of individual BMPs*)
- Evaluation of the effectiveness of education and outreach material provided to the development community on SUSMP and Development Planning requirements/controls (*education/outreach evaluations*)
- Evaluation of the effectiveness of the Development Planning program in protecting water quality (*program evaluations*)

Permittees should implement evaluations of the Development Planning program at several levels to ensure the program is being implemented to the maximum extent practicable. Evaluations do

not need to rely on water quality-based information (e.g., water quality monitoring). They could be based on surveys; random reviews of a subset of plans, projects, or BMPs; or other methods.

In order to conduct effective evaluations, goals or performance standards against which the program can be evaluated should be set. These goals or performance standards should contain measurable targets for various Development Planning aspects.

## 4.0 RECOMMENDATIONS FOR SUSMP REVIEWS

The Regional Board intends to review the Development Planning programs of additional permittees under the LA MS4 Permit. The following sections outline the anticipated components of future reviews. The process has been divided into pre-review, on-site, and post-review activities.

### 4.1 Pre-review Activities

Pre-review activities consist of notice, schedule development, information gathering, and logistics.

**Notice of Pending Review** – 40 CFR 122.41(h) and 122.41(i) provide the Regional Board the authority to conduct the program review. While advanced notice is not required, the Regional Board intends to provide a formal written notice of the pending review approximately 3 weeks prior to commencement of on-site activities. The advance notice is intended to provide the permittee sufficient time to advise appropriate staff of the pending review so that they may arrange their schedules accordingly.

**Delivery of Preliminary Review Schedule** – A preliminary review schedule will be developed and provided to the permittee as either an attachment to the formal notice or as a separate document. The draft schedule will state the anticipated dates of the review and selected locations and times of kickoff and out brief meetings, and it will highlight the major review elements. The major review elements will be further described as taking place in the office or in the field.

**Information Gathering** – Prior to commencement of the on-site review, the Regional Board may ask the permittee to provide supplemental information. This information may include but is not limited to: (1) lists of past, current, and known future development and significant redevelopment projects (both discretionary and ministerial), (2) handout materials provided to project applicants, developers, and contractors, (3) project-specific files for individual SUSMP applicable projects, (4) current inventories of structural controls and associated operation and maintenance plans and maintenance agreements, and (5) internal training materials.

**Delivery of Review Topics** – The Regional Board will develop a list of topics that will serve as an outline for the pending review. The review topics document to be provided prior to the permittee telephone conference discussed below will be organized to follow the preliminary schedule.

**Pre-Review Telephone Conference** - Approximately 1 week before the start of on-site activities, the Regional Board will set-up a telephone conference with the permittee(s) to discuss the purpose, goals, procedures, logistics, and output of the review. EPA and/or their designated contractor(s) may also participate in the teleconference. Primary goals of the teleconference are to finalize the preliminary schedule and arrange on-site logistics (e.g., specifically when and where to meet on the first day of on-site activities). Only those individuals directly tasked with overseeing the program implementation should participate in the teleconference.

**Delivery of Final Schedule** – Once established, the final review schedule will be provided to the permittee.

A sample schedule is provided below:

<b>Sample Schedule - Los Angeles MS4 Program Review – SUSMPs</b>		
<b>City of X, X and X</b>		
Each Permittee will follow the schedule below.		
<b>Day</b>	<b>Time</b>	<b>Permittee</b>
3 weeks in advance		Deliver notice letter, preliminary schedule, and plan conference call.
1 week in advance		Conduct group teleconference (30-45 minutes) and fax question outline immediately prior.
Day 1	8:30 AM	<b>Kickoff Meeting</b> (Location: at each permittee’s office)
	9:00 AM	<b>Office evaluation – Pre-project Conditioning</b> - Ordinance - Project Selection - BMP Selection - Design Standards - Final Project Approval and Conditioning - Inspection Procedures
	1:00 PM	<b>Office evaluation – Post-construction Review</b> - Tracking and Inspection - Maintenance - Tenant Education - Evaluating Effectiveness
Day 2	8:30 AM	<b>Field review</b> – active or planned SUSMP projects - Visit already completed SUSMP projects or projects under construction.
	1:00 PM	Continue field review.
Day 3	9:00 AM	<b>Outbrief of preliminary findings</b> – All participants together for a joint meeting. Location TBD.

**4.2 On-site Activities**

On-site activities consist of the kickoff meeting, office and field reviews of individual program elements, and the out brief meeting.

**Kickoff Meeting** – The kickoff meeting is intended to reiterate the purpose, goals, procedures, logistics, and output of the review. Unlike the pre-review telephone conference, this meeting is intended for a wider audience of permittee managers and line staff. The kickoff meeting is expected to last about 30 minutes and the permittee is encouraged to ask questions.

**Office and Field Reviews** – The Regional Board has provided an outline of what it considers a recommended program (see Section 3 of this report) and intends to use the outline in the future as a tool to evaluate all permittee programs. In addition, a Development Planning outline has been provided in Appendix A of this report. Permittees should consider the recommended program and questionnaire as the benchmarks for SUSMP programs within Los Angeles County and use them as guides for the pending SUSMP review.

The office and field reviews are intended to be in-field verifications of the implementation status of the permittees' programs. In general, office activities are intended to provide the permittee the opportunity to describe how a specific element of the program is being implemented. Subsequent field activities are intended to demonstrate that activities are occurring as described.

**Out Brief Meeting** – The voluntary out brief meeting is an opportunity for the permittee to hear the preliminary findings of the review. The Regional Board will present the preliminary findings organized by individual element. The copermitttee is encouraged to ask questions or comment on the specific findings, but all questions or comments should be withheld until the Regional Board has presented the preliminary findings.

### 4.3 Post-review Activities

Post-review activities consist of the preparation of the draft and final report, a grace period to remedy potential permit violations, and subsequent Regional Board inspection.

**Draft and Final Report** – Upon completion of the on-site activities, a draft review report will be prepared. At their discretion the Regional Board and EPA may circulate the draft report for comment by the permittees whose programs were reviewed. The draft review report will identify potential permit violations, areas for improvement, and positive attributes. The report itself is not a formal finding of violation. Program areas for improvement are areas of concern for successful program implementation. Positive attributes indicate a permittee's overall progress in implementing the program. The review team identifies only the positive attributes that are innovative (beyond minimum requirements). Some areas may be found to be simply adequate; that is, not particularly deficient or innovative. The review team does not evaluate all components of each permittee's program. Therefore, the permittee should not consider the list of findings in the report to be a comprehensive review of all individual program elements.

The Regional Board and EPA will review the draft report internally, consider any comments submitted by permittees, and a final report will then be produced. The final report will be distributed to the permittees. Permittees may respond to the final report in writing however, the final report will not be amended.

**Grace Period to Remedy Potential Permit Violations** – Upon delivery of the final report, the Regional Board will allow a grace period of 60 days for the permittee to remedy the identified potential permit violations. No later than 60 days after receiving the report, the permittee will provide to the Regional Board documentation that describes the remedy. If a particular remedy will take more than 60 days to implement, the permittee will be expected to provide written documentation that describes the remedy, states why it cannot be implemented within 60 days

from receipt of the report, and establishes a detailed schedule for implementation. The permittee has 45 days from receipt of the report to prepare documentation for any remedies that cannot be accomplished within the 60-day period.

**Regional Board Inspection** – Any time after the 60 days have expired, the Regional Board reserves the right to perform an inspection to verify that the described remedy is in place and in fact remedies the identified deficiency.

## APPENDIX A - DEVELOPMENT PLANNING OUTLINE

### PRE-PROJECT CONDITIONING

#### Ordinance

- Updated to ensure full implementation (e.g. inclusion, inspection, and maintenance)
- Refers to technical documents and manuals

#### Project Selection

- Discretionary and ministerial and public criteria/checklists
  - Categorical
  - Significant Redevelopment
  - ESA
  - Site specific mitigation for non-qualifying projects
  - Additional project categories
- Interdepartmental coordination, training, and materials development and dissemination.

#### Design Standards

- Peak storm water runoff discharge rates (post-development runoff  $\leq$  pre-development runoff)
- Endorsement/prescription of specific numeric sizing criteria
- Determination of contributing area (full footprint vs. pollutant generating surfaces (pervious and impervious))
- Waivers from treatment requirements
- BMPs in series and/or parallel

#### BMP Selection

- Technical criteria manual for staff and applicant guidance.
  - Includes low impact design principles, slope stabilization, preservation of natural areas.
- Identification of Pollutants of Concern and pollutant generating areas.
- Protecting slopes and conserving natural areas
  - Includes minimum percentages and native species
- Proper selection and use of Source Control BMPs
  - Boilerplate list of standard conditions
  - Required BMPs for specific development categories
  - Use of signage and other tools for tenant education
- Proper selection and use of Structural Control BMPs (source and/or treatment)
  - Use of selection matrix to apply the appropriate BMP(s)
  - Periodic analysis of installed BMPs to evaluate effectiveness and update technical manual.
  - Establish cut-sheets of required specific provisions (not optional) applicable to:
    - One acre commercial developments
    - Restaurants
    - Retail gasoline outlets
    - Automotive repair shops

- Parking lots
- Inclusion of low impact design principles

#### Final Project Approval and Conditioning

- Project conditioned with all appropriate requirements (source control, structural controls, legal covenants and agreements (C&A), and O& M requirements).
- Written correspondence for multi-department approvals
- Conditions represented on the final plans with source control BMPs, C&As, and O&M requirements provided in notes section.
- Conditions/requirements distributed to owner/tenant and city inspection staff.

### **POST-CONSTRUCTION EVALUATION**

#### Tracking and Inspection

- Records retention and use of GIS
- Database/tracking system for all public and private projects includes (in addition to standard information):
  - Source control BMPs
  - Coordinates via GPS
  - Photographs
  - Current and future maintenance concerns
  - Frequency determination maintenance and inspection
- Final Clearance Inspection to verify as-built conditions.
  - Ensure implementation of source control BMPs
  - Feasibility – problem identification.
- Process to confirm BMP use and maintenance by the tenant (e.g., routine inspection, drive-bys, acquisition of maintenance logs)

#### Maintenance

- Providing proof of maintenance
- Inspection
- Private vs. Public Maintenance

#### Tenant Education Program

- Existence and purpose
- Use restrictions
- Maintenance needs and agreement
- Transferability

#### Effectiveness Evaluations

- Periodic analysis of installed BMPs to evaluate effectiveness and update technical manual.



## APPENDIX B - RESPONSE TO COMMENTS

The draft Program Review Report Los Angeles County Municipal Storm Water NPDES Permit Development Planning was distributed to each of the four permittees for their review and comment. All four permittees provided comments. A large proportion of the comments were editorial/grammatical and those have been incorporated into the revised report.

The remaining comments from each permittee are presented below with the RWQCB's response.

### **County of Los Angeles**

-----Original Message-----

**From:** DePoto, Bill

**Sent:** Monday, June 30, 2003 3:07 PM

**To:** 'Xavier Swamikannu'

**Cc:** Lafferty, Dan; Hamamoto, Bruce; Kajbaf, Mo; Kuo, Frank; Miller, Mitch; Tadian, Nishan; Drew, Narda; Wu, Frank; Escobar, Eduardo; Ezell, Scott

**Subject:** RE: Draft SUSMP Program Review Report

Xavier, thank you for the opportunity to respond to the draft SUSMP Program Review Report. Following are our comments to the Review Findings/Deficiencies, Section 2.1.3, page 9, of the report:

- Regarding inspection relating to source control BMPs, our Environmental Programs Division reviews source control measures on private industrial and commercial property during routine inspections. The Environmental Programs Division issues violation notices when BMP maintenance problems, such as missing filter media, are noted. Follow-up inspections confirm that corrective action has taken place.

***[RWQCB Response – Annual inspections of permit holders is noted in the report. The County-specific finding was clarified to indicate that inspections are performed at a sub-set of the entire applicable sites. Verification of BMP maintenance is recommended at all sites, including residential developments.]***

- Regarding the geographic magnitude of the SUSMP task and the Environmentally Sensitive Area imposition, County Public Works is currently working on the development of a web-enabled data base application for its permitting needs, expected completion by the end of this year. The new system includes a geographic location component where the full ESA coverage map will be available to all SUSMP plan checking staff. The system will be used by County Building and Safety, Environmental Programs, Land Development and Construction Divisions. This new system will also provide enhanced communication between all Department permitting staff as well as connect County Departments of Fire, Planning, and Beaches & Harbors.

***[RWQCB Response – This activity is scheduled for the future, therefore the text of the two findings in question were not modified. However, the deficiency regarding the magnitude of the SUSMP program and need for enhanced communication was removed from the Executive Summary]***

- Regarding pollutants of concern, Environmental Programs Division analyses of proposed BMPs in a private industrial/commercial setting includes an analysis of the type of operation and the potential pollutant sources based on documentation submitted in an application form.

*[RWQCB Response – Similar analyses appear warranted for all types of development. The finding was changed from a deficiency to a recommendation but the text was not modified.]*

- Regarding cross training, all field office personnel in Environmental Programs Division are cross trained. Immediately after being hired, field office staff receives training at the industrial/commercial plan checking counter and office staff participates in field inspections. These activities continue as needed after the initial training period.

*[RWQCB Response – The evaluation team believed that additional training appeared warranted. The finding was not modified, however it was removed from the Executive Summary.]*

- Regarding stenciling of catch basins in private developments, our Land Development Division is already making sure that stenciling plans are consistently shown on construction plans and that our Construction Division is alerted to ensure that catch basins are stenciled prior to its giving final clearance on the inspection.

*[RWQCB Response – The Regional Board thanks the County for addressing this issue so quickly.]*

**Bill DePoto, P.E.**

L.A. County Public Works  
Watershed Management Div.  
626.458.4313

We're on the Web at <http://ladpw.org/wmd/>  
????????? about BMPs?--> [www.BMPLA.org](http://www.BMPLA.org)

## **City of Los Angeles**

-----Original Message-----

From: Penny Weiland [mailto:PMWeiland@SAN.LACITY.ORG]  
Sent: Monday, June 30, 2003 5:02 PM  
To: DRadules@rb4.swrcb.ca.gov; XSWAMI@rb4.swrcb.ca.gov  
Cc: James F. Langley; Robert Vega; Shahram Kharaghani; Wing Tam  
Subject: Re: Draft SUSMP Program Review Report - Not for Circulation

Hello Xavier and Dan,

The City of Los Angeles Watershed Protection Division has completed review of the draft SUSMP Program Review Report dated May 19, 2003. I have attached a strike-out version of your original document identifying our comments/changes. I will also send a hard copy tomorrow in the mail to Dennis with a cc to the both of you.

Thank you for this opportunity to comment. I look forward to working with the both of you in the future on the SUSMP Program. Please contact me with any questions.

Penny Weiland  
SUSMP Implementation Section  
Watershed Protection Division  
323-342-1547

### *2.2.3 Review Findings*

#### Deficiencies

- *Post-construction activities were lacking.*

The City does not currently conduct inspections to verify that ongoing BMP maintenance has been performed. There is no plan in place to evaluate the effectiveness of installed BMPs. Nor does the City require (or provide) any form of tenant education or notification as to the purpose of the BMPs or reminders of maintenance schedules and commitments. The City should consider periodic inspections of source and treatment control BMPs to ensure proper installation, operation, and maintenance of controls. The City should also consider creating tenant education programs. For example, the City could install or require, for appropriate locations, signage indicating that a treatment control BMP is present and its intended purpose. This is not a requirement of either the SUSMP or NPDES permit; therefore, it should not be listed as a deficiency of our current program. If the RWQCB wants to discuss this issue, it should be discussed under a separate heading, i.e. Recommendations, and clearly indicate that these recommendations are above the minimum requirements of the current regulations. [LA City addition is underlined]

***[RWQCB Response – The Regional Board agrees with this finding and a global recommendation was created in the Executive Summary and the existing permittee-specific***

*findings were either modified to include this recommendation or the recommendation was inserted. Additionally, another paragraph was inserted within the finding to indicate that while these problems are not unique to the Los Angeles County permittees, the Regional Board considers the lack of source control BMPs a very significant issue and one that will demand more intensive review. Failure to ensure implementation of source control BMPs will be considered a serious permit violation.]*

- *The application of specific BMPs did not necessarily match the pollutant sources. The identification and application of specific BMPs appeared to be based solely on the generic SUSMP discussion included with the MS4 permit and the anticipated pollutant list contained within BMP matrices in the Development Handbook rather than on specific pollutants of concern. Identification and targeting of other specific pollutants of concern or pollutant generating areas (pervious or impervious) were not noted during the review. The County of Los Angeles and cities of Glendale, Los Angeles, and Santa Monica all use the same BMP selection resources and criteria; however, only the County and City of Los Angeles were listed as deficient in this area. Please clarify your comment further and also make your review consistent by determining if this is or is not a deficiency for the County and all the cities. [LA City addition is underlined]*

*[RWQCB Response – The Regional Board agrees with this finding and a global recommendation was created in the Executive Summary and the existing permittee-specific findings were either modified to include this recommendation or the recommendation was inserted.]*

### 3.0 Development Planning Program Recommended by the Regional Board

The elements below document a “recommended” Development Planning program for Los Angeles permittees to consider as they implement new development and SUSMP programs. Based largely on the SUSMP adopted by the Regional Board and the review of the four Development Planning programs summarized in this report, the elements below are considered to meet, and in some cases exceed, the requirements in the Los Angeles NPDES MS4 permit and the California Water Quality Control Board Los Angeles Region SUSMP. Only those elements required by the current NPDES MS4 permit and SUSMP will be used for compliance measurement during an official audit. Optional elements, those elements that exceed the permit and SUSMP requirements, are identified in *italics*. [LA City addition is underlined]

*[RWQCB Response – The Regional Board is confident that the permittees can identify required vs. recommended program elements. Additionally, the term optional implies that the recommended elements need not be present for a compliant program. The Regional Board believes that all permittees should strive to incorporate the recommended as a way to ensure comprehensive and thorough program implementation that will ultimately prevent a violation(s) from occurring.]*

### **City of Santa Monica**

Comments received from the City of Santa Monica were handwritten on the draft document. The comments were largely editorial/grammatical and all were incorporated into the final report.

The City indicated that starting March 2003, they had begun to send out letters to all owners of BMPs notifying them of the requirement to provide annual inspections of their BMPs.

The comment cover page stated "Xavier, Here are my comments on the draft report. Very nice, thorough, overall."

Neal Shapiro, City of Santa Monica.

### **City of Glendale**

-----Original Message-----

**From:** Oillataguerre, Maurice [mailto:MOillataguerre@ci.glendale.ca.us]

**Sent:** Thursday, June 12, 2003 5:01 PM

**To:** Dan Radulescu (dradules@rb4.swrcb.ca.gov)

**Cc:** Wphillip@Rb4. Swrcb. Ca. Gov (wphillip@rb4.swrcb.ca.gov); Xavier Swamikannu (XSWAMI@rb4.swrcb.ca.gov)

**Subject:** Program Review Report

I think we both agree that inspecting structural BMPs is very important to ensure proper operation. After all, what good is installing a CDS unit (or fossil-filter, oil/water separator, etc.) if it is never maintained? As I pointed out to you during our program review, I have already created a database which includes all of the locations of BMPs installed in the City of Glendale. I have tried, unsuccessfully, to secure funding for the hiring of additional inspectors to inspect these locations on an annual basis. Therefore, I have instituted a program where each property owner is mailed an "Annual Certification Form" which makes the property owner certify that all structural Storm Water BMPs (and associated drainage infrastructure) are inspected and maintained in proper working order. Please keep in mind that the database I created and the Annual Certification Program are not required in the MS4 Permit. Rather, I have VOLUNTARILY gone above and beyond what is LEGALLY required in the Permit. The only legal requirement in the permit concerning the maintenance of structural BMPs is a legal agreement between each property owner and the City; the City of Glendale is currently using a Covenant and Agreement legal document (filed with the County) to satisfy this requirement.

Keeping this in mind, I would like to direct your attention to page 25 of the "Program Review Report" document. I am hereby formally requesting that the word "deficiencies" be removed (or changed to read "recommendations") because the lack of a BMP inspection program cannot be termed a "deficiency" if it is not legally required. I am expecting that the next permit will indeed require each municipality to institute such a program. However, this may prove problematic since the current permit does not even require cities to keep track of where these locations exist within their boundaries.

Thanks in advance for your assistance in this matter.

Maurice Oillataguerre, M.S., R.E.H.S.  
City of Glendale  
Public Works Division  
633 East Broadway, Room 205  
Glendale, CA 91386  
(818) 548-3945  
(818) 242-7087 (fax)

***[RWQCB Response – The Regional Board agrees with this finding and a global recommendation was created in the Executive Summary and the existing permittee-specific findings were either modified to include this recommendation or the recommendation was inserted.]***

**APPENDIX C - REVISED CALIFORNIA WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION SUSMP (NOVEMBER, 2003)**