

## Appendix A

### General Descriptions for Select Strategies

#### Administrative BMPs

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Administrative BMPs are essential Core Strategies for implementation. Program administration is fundamental in achieving effective outcome and confirmation is often used to track plan implementation. Administrative BMP activities include:

1. Review/update source inventories and priorities (Storm Water Pollutant Control BMPs, construction, industrial and commercial, municipal, etc.)
2. Establishing/review/update BMP requirements
3. Develop/review/update standard operating procedures (SOPs), Storm Water Pollution Prevention Plans (SWPPPs), Storm Water Management Plans (SWMPs), manuals etc.
4. Review/update General Plans,
5. Review/update ordinances, municipal code, etc.
6. Maintain appropriate contracts
7. Review/update educational materials
8. Review/update approval process
9. Establish and maintain adequate legal authority

These activities are important for establishing the foundation of a storm water program, and are key for obtaining compliance with the requirements of the Jurisdictional Runoff Management Programs.

Administrative BMPs include establishing BMP requirements. In many cases, this means developing Activity BMPs for implementation by target audiences. Activity BMPs include: cover, contain, prevent, good housekeeping and administrative BMPs. Some examples of activity BMPs include:

1. Cover activity/material
2. Clean floor mats, etc. indoors
3. Wash vehicles and equipment in designated areas
4. Properly manage pesticide/fertilizer use
5. Protect storm drains
6. Clean up regularly with dry methods
7. Develop and implement spill prevention plan

Minimum Activity BMPs may vary between Responsible Agencies due to each jurisdiction's requirements, but each jurisdiction strives to require and enforce all minimum BMPs for the appropriate source. Jurisdiction-specific minimum activity BMPs are included in each Jurisdictional Runoff Management Program.

The requirement and enforcement of Activity BMPs is a facilitation activity by the Responsible Agencies that, when implemented by the target audience, can assist in achieving behavior change and in some cases load reductions.

## **Investigations**

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Investigations are conducted to identify illegal discharges and illicit connections as a result of public reporting (hotline, website, etc.), inspection findings, staff referrals, and/or monitoring results. Investigations may include visual observations, closed circuit television (CCTV) often used for the MS4, or additional monitoring. Investigations can occur in municipal, land development, construction, industrial, commercial, or residential areas. Investigations may also address a wide range of pollutants and pollutant generating activities based upon the type of illegal discharge, illicit connection, or possibly natural source discovered. The purpose of investigations is to identify and eliminate any illegal discharges or illicit connections to the MS4. Typical illegal discharges identified through investigations include:

1. Motor oil or antifreeze from automobiles
2. Sanitary wastewater
3. Runoff from excess irrigation
4. Household toxic substances
5. Sediment
6. Trash

Investigations are a common tool used to respond to reports of potential violations, and this data gathering activity can be effective in finding and eliminating illegal discharges and illicit connections.

## **Development and Redevelopment Requirements**

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Development and redevelopment project proponents submit project applications to the Responsible Agencies to obtain permits to construct their projects. In general, project types include those that have ground disturbing activities and create or replace impervious surfaces. Responsible agencies, through their administrative BMPs, have established requirements of development and redevelopment projects to incorporate Low Impact Development, source control, pollutant control and hydromodification management BMPs into the project design.

In general, Responsible Agencies utilize their land development processes as the mechanism to place conditions on projects to fulfill the water quality related project requirements. Project proponents submit their plans and reports to demonstrate compliance with the Responsible Agencies' requirements. Those plans and reports are reviewed and evaluated for accuracy.

The implementation and enforcement of development and redevelopment requirements is an effective BMP in the sense that it can mitigate for potential water quality impacts from development land-use. Furthermore, as redevelopment continues to occur, previously unmitigated land uses will have controls in place that alleviate historical land uses and their water quality impacts.

## Inspections

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Inspections are conducted to examine facilities or sites for storm water requirements and BMP implementation and are often utilized as an opportunity to educate facility operators or owners regarding storm water and BMPs. Typically, inspections consist of two primary components: a visual/observational assessment of the conditions and operations at facility or site; and, verbal interviewing of the facility or site representative. The purpose of the inspections is to identify issues or potential issues and initiate a course of action to correct identified issues. Typical issues include:

1. Active discharges
2. Presence of evidence identifying previous discharges
3. Required BMPs not implemented
4. Lack of required documentation or paperwork
5. Required operation and maintenance not conducted

As part of the inspection program inventories for facilities, residential management areas and other activities and areas are maintained and prioritized. In general, an inspection frequency is determined based upon priority, and inspection and enforcement information, along with any applicable follow-up, is retained in a database.

There are a variety of inspection types used to complete inspections including:

1. Conventional inspections that include interviews with onsite personnel
2. Drive-by inspections
3. Property-based inspections
4. Patrol inspections

When inspections are conducted, either by Municipal staff or contracted staff, the inspector typically has a checklist or inspection form that is utilized to assist in determining compliance. Some of the items inspectors will look for during inspections are included below.

Development Planning:

- Verifying effective operation and maintenance of Storm Water Pollutant Control BMPs
- Verifying Storm Water Pollutant Control BMPs compliance with all ordinances, permits, codes, etc.
- Prior to occupancy of each Priority Development Project subject to SUSMP requirements, verifying that the constructed LID, source control, and Storm Water Pollutant Control BMPs have been constructed in compliance with all specifications, plans, permits, ordinances, etc.

Construction Sites:

- Check for coverage under the General Construction Permit (Notice of Intent (NOI) and/or Waste Discharge Identification No.) during initial inspections;
- Assessment of Compliance with Permittee ordinances and permits related to urban runoff, including the implementation and maintenance of designated minimum BMPs;

- Assessment of BMP effectiveness;
- Visual observations for non-storm water discharges, potential illicit connections, and potential discharge of pollutants in storm water runoff;
- Education and outreach on storm water pollution prevention, as needed; and
- Creation of a written or electronic inspection report.

***Existing Development Facilities, Areas and Activities***

Industrial and Commercial:

- Review of BMP implementation plans, if the site uses or is required to use such a plan;
- Review of facility monitoring data, if the site monitors its runoff;
- Check for coverage under the General Industrial Permit (Notice of Intent (NOI) and/or Waste Discharge Identification No.), if applicable;
- Assessment of compliance with Responsible Agency ordinances and permits related to urban runoff;
- Assessment of BMP implementation, maintenance and effectiveness;
- Visual observations for non-storm water discharges, potential illicit connections, and potential discharge of pollutants in storm water runoff; and
- Education and training on storm water pollution prevention, as conditions warrant.

Municipal Areas and Activities

- Review of BMP implementation plans, if the site uses or is required to use such a plan;
- Assessment of compliance with jurisdiction’s ordinances and permits related to urban runoff;
- Assessment of BMP implementation, maintenance and effectiveness;
- Visual observations for non-storm water discharges, potential illicit connections, and potential discharge of pollutants in storm water runoff.

Residential Areas and Activities

- Assessment of compliance with jurisdiction’s ordinances and permits related to urban runoff;
- Assessment of BMP implementation, maintenance and effectiveness;
- Visual observations for non-storm water discharges, potential illicit connections, and potential discharge of pollutants in storm water runoff.

Based upon inspection findings, each jurisdiction should implement follow-up actions necessary to comply with the Municipal Permit and any applicable ordinances, permits, etc.

Inspections can target land development, construction, industrial, commercial, and municipal audiences in order to gather the necessary data for program evaluations and effectiveness assessments. Additionally, inspections can address single or multiple pollutants such as bacteria, trash, heavy metals, nutrients, oil and grease, organics, sediment, and pesticides, depending upon the facility type being inspected. However, the effectiveness of inspections in reducing runoff pollutants and discharges is highly variable and dependent upon site-specific conditions, including but not limited to: motivation of

facility or site representative/owner; level of difficulty in making required corrections; BMP complexity and others.

### **MS4 Inspections / Cleaning**

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Operating and maintaining the MS4 infrastructure which includes storm drain pipes, catch basins, inlets, open channels, etc., encompasses a large variety of activities performed by the Responsible Agencies' municipal or contract staff. Each Responsible Agency implements a schedule of inspection and maintenance activities for the MS4 and MS4 facilities. The maintenance activities that may be conducted include:

- Inventory and prioritization
- Inspection
- Cleaning and proper disposal of any wastes removed
- Record keeping of maintenance and cleaning including amounts removed.

Additionally, each Responsible Agency implements controls and measures to prevent and eliminate infiltration of seepage from municipal sanitary sewers to MS4s through thorough, routine preventive maintenance of the MS4.

Each jurisdiction's MS4 inventory and MS4 inspection and cleaning details are included in their Jurisdictional Runoff Management Program.

The facilitation of the MS4 inspection and cleaning program can provide knowledge and awareness and behavior changes through municipal staff implementing the MS4 inspection and cleaning at the proper frequency and within the proper cleaning guidelines. MS4 cleaning can also achieve source load reductions when the amount of debris removed from the MS4 and MS4 facility cleaning is measured.

### **Street Sweeping**

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Street Sweeping is conducted to remove debris, trash, or particles from improved (possessing a curb and gutter) municipal roads, streets, highways, and parking facilities. Street sweeping can be effective in removing trash, debris and other constituents of concern, such as metals, from roadways and parking facilities before entering the storm drain system and has the potential to reach receiving waters. In addition street sweeping helps prevent blockages in storm drains caused from trash and debris that can create flooding issues during periods of heavy rainfall.

Street sweeping implementation will vary by jurisdiction and may vary based on location in the watershed. Street sweeping program information is contained in each Jurisdictional Runoff Management Program. The measurement of the amount of trash, debris, and constituents of concern removed through street sweeping provides information on the source load reduction.

## **General Education and Outreach**

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Education and outreach activities are Core Strategies conducted to increase the knowledge and awareness of a target community regarding stormwater, change the behavior of the target community, and/or ultimately reduce pollutants and runoff into the MS4 and receiving waters. In general, an education and outreach strategy is developed and the programs typically address high priority pollutants, pollutant-generating activities, and the following target communities, as applicable and appropriate:

- Municipal Departments and Personnel (described in employee training)
- Construction Site Owners and Developers
- Industrial Owners and Operators
- Commercial Owners and Operators
- Residential Community

Methods utilized for education and outreach vary and may include mass media, mailers, door hangers, booths at public events, workshops, focus groups, classroom education, field trips, hands-on experiences, clean-up events, websites, etc. Education and outreach can be conducted by a single Responsible Agency or several Responsible Agencies may combine funds and efforts to conduct activities or develop materials. Education and outreach activities are included in each Jurisdictional Runoff Management Program.

Education and outreach activities can be facilitation and/or data gathering activities with targeted outcomes focused primarily on knowledge and awareness, and behavior change. Education and outreach effectiveness can be measured and assessed through surveys (i.e. web-based, at events, or on the phone) BMP implementation rates, focus groups, observations, participation in events or workshops, hotline calls, and questionnaires.

## **Employee Training**

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Municipal employee storm water training is conducted to increase the knowledge of the target audience in regards to laws, regulations, permits and requirements; BMPs; general urban runoff concepts; and any other relevant topics as deemed appropriate. Trainings may be job specific (i.e. MS4 cleaning procedures) or may be more general but ultimately provides a mechanism to communicate jurisdictional requirements to the appropriate employees. Training methods that may be utilized could be computer based interactive tutorials, classroom style trainings, audiovisual methods (i.e. DVD) or on-the-job training (i.e. training on how to use a street sweeper). Employee training may vary by jurisdiction and training details are included in each Jurisdictional Runoff Management Program.

Municipal employee training can provide important information on whether training conducted is effective at increasing employees general and/or job specific knowledge regarding stormwater. This type of assessment is often measured and assessed utilizing pre-and post-test questionnaires/surveys. In addition, BMP implementation or changes in behavior may be assessed through employee activity. For example, if training for street sweeper operators was conducted to provide routes, sweeping

priorities, and frequency of street sweeping and at the end of the year it was implemented properly, then it can be deduced that the training was successful and the operation and maintenance BMPs were implemented. Additionally, if general storm water training was conducted for municipal staff to provide them the tools to identify potential illegal discharges, and then the program receives an increase in the municipal staff reporting of illegal discharges, then it would indicate that there was a change in behavior based upon the training provided.

## **Enforcement**

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Each jurisdiction implements and enforces its ordinances, codes, or other legal authority to prevent illegal discharges and connections to its MS4. Enforcement methods are utilized to affect a return to compliance at either a construction, municipal, industrial, commercial, or residential area. Some enforcement methods utilized include verbal warning, letters, educational materials, citations, notices of violation, stop work orders, or civil penalties. Each jurisdiction also implements all follow-up actions necessary to achieve the return to compliance for a particular site. Enforcement procedures vary by jurisdiction and are included in each Jurisdictional Runoff Management Program.

Enforcement is a common tool used to not only return violators to compliance but also to educate and promote compliance. Enforcement is a facilitation activity where the tabulation of enforcement data can be associated with a load reduction. If a site or residence where a pollutant is leaving, or has the potential to leave, the site has been stopped or mitigated through enforcement efforts there is an implied load reduction. The tabulation of enforcement data may also provide information on behavior change.

## **Partnership Program(s)**

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Responsible Agencies may partner with entities to coordinate, share, or back projects and programs that have the potential to support overall water quality objectives. These partnerships may come in various forms including, but not limited to:

- Coordination/information sharing meetings
- Review of projects
- Joint grant applications
- Private or joint funding
- Generating letters of support for projects

It is vital for Responsible Agencies to partner with outside entities in order to achieve overarching water quality improvement objectives. Based on the MS4 discharge permit, Responsible Agencies have a direct responsibility for the discharges generated from their MS4 systems. Outside entities have a significant interest in downstream waterways. Partnerships may offer a synergistic pathway to achieving overall outcomes in both MS4 discharges and in waters.

### **Program for Retrofitting Areas of Existing Development**

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As a new program requirement, Responsible Agencies will be developing retrofit programs to be included in their Jurisdictional Runoff Management Programs. The retrofit programs are intended to implement retrofit projects in jurisdictional areas of existing development (presumably currently unmitigated land uses) to address identified sources of pollutants and/or stressors that contribute to the identified Priority Water Quality Conditions and Highest Priority Water Quality Conditions.

Programs will include:

- Identification of areas that are candidates for retrofitting
- Development of a strategy to facilitate implementation of retrofit projects in the candidate areas
- Identify areas where development project proponents may use offsite alternative compliance (if allowed by the Responsible Agency(ies)) to implement retrofits
- Opportunities to collaborate with other Responsible Agencies for regional retrofit projects.

### **Program for Stream, Channel and/or Existing Habitat Rehabilitation in Areas of Existing Development**

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As a new program requirement, Responsible Agencies will be developing rehabilitation programs to be included in their Jurisdictional Runoff Management Programs. The rehabilitation programs are intended to implement rehabilitation projects in jurisdictional areas of existing development (presumably currently unmitigated land uses) to address identified sources of pollutants and/or stressors that contribute to the identified Priority Water Quality Conditions and Highest Priority Water Quality Conditions.

Programs will include:

- Identification of streams, channels and/or habitats that are candidates for rehabilitation
- Development of a strategy to facilitate implementation of stream, channel and/or habitat rehabilitation projects in the candidate areas
- Identify areas where development project proponents may use offsite alternative compliance (if allowed by the Responsible Agency(ies)) to implement rehabilitation
- Opportunities to collaborate with other Responsible Agencies for regional rehabilitation projects.

### **Offsite Alternative Compliance**

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Responsible Agencies have the opportunity to develop and implement Offsite Alternative Compliance (OAC) programs that are intended to allow development project proponents to trade onsite mitigation for water quality impacts for offsite mitigation. Offsite mitigation may come in many forms but must always be of greater overall water quality benefit to the watershed than what would have been required to be implemented onsite.

OAC projects may include, but are not limited to:



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- Stream restoration projects
- Retrofits in existing development
- Receiving waters restoration
- Land purchases/preservation
- Treatment Control BMPs
  - Proprietary
  - Basins
  - Bioretention
  - Filtration

On an individual basis, Responsible Agencies are currently evaluating whether they will be implementing OAC programs. If and when implemented, Responsible Agencies will develop programs that:

- Evaluate Priority Development Projects for applicability for OAC
- Evaluate proposed OAC project benefits for equivalency or greater water quality benefit to the watershed
- Potentially coordinate and through agreement, allow OAC in jurisdictions outside of where the proposed project will be located

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