
Appendix C.1

Best Management Practices for Municipal Activities

In accordance with Section F.3.a of the Permit, the City of La Mesa has developed an inventory of BMPs that may be implemented at high, medium, and low priority municipal facilities, as determined in Section 2 of the Jurisdictional URMP. The following section is a compilation of BMPs that will be implemented to reduce pollutants to the MEP. Table C.1-1 (also shown in Section 2 of the JURMP document) illustrates specifically which minimum BMPs will be required at low, medium and high priority facilities and activities, where appropriate. Many of the BMPs described herein are already implemented at some of the municipal facilities.

The BMP inventory consists of a set of general BMPs and activity-specific BMPs that will be implemented according to Table C.1-1, where appropriate. The municipal BMP program emphasizes *non-structural* BMPs as an initial step toward low-cost, feasible implementation. The need for designed or engineered *structural* BMPs will be evaluated by the City and the facility manager on a site-by-site basis. The City may also require additional BMPs as necessary to comply with the Permit.

Some of the BMPs described are also required during construction, commercial, and industrial activities, and are further described in Appendices C.2, C.3, C.4, C.5, and C.6. In addition to the information provided within this manual, more specific BMP information can be obtained from the Caltrans Storm Water Quality Handbooks (November 2000) and the California Storm Water Best Management Practice Handbook for Municipal Facilities (March 1993).

Table of Contents	Appendix C.1 Page
BEST MANAGEMENT PRACTICES FOR MUNICIPAL ACTIVITIES	3
General BMPs	3
Landscaping BMPs	5
Materials Handling BMPs	7
Construction/Repair BMPs	9

TABLE C.1-1: MINIMUM BMPs FOR MUNICIPAL FACILITIES AND ACTIVITIES

	<u>Best Management Practices</u>																							
	General					Landscaping					Materials Handling					Construction/Repair								
	Good Housekeeping	Employee Training	Visual Inspections	Improved Operations	Waste Disposal and Maintenance	Preventive Maintenance	Reporting and Record Keeping	Facility and Grounds Maintenance	Irrigation Control	Landscape Waste Disposal	Native Vegetation	Pesticide, Herbicide and Fertilizer Control	Spill Prevention and Response	Material Inventory Procedures	Storage Tanks	Outside Storage	Loading and Unloading Materials	Sediment and Erosion Control	Street/Parking Lot Sweeping	Vegetation Control	Roadway and Bridge Maintenance	Facility Repair, Remodeling and Construction	Vehicle and Equipment Maintenance	Vehicle and Equipment Washing
HIGH PRIORITY																								
Roads and Streets Maintenance		X	X			X											X	X	X					
Parking Facilities	X	X	X		X	X											X							
Storage Yards for Materials, Waste, Equipment and Vehicle Maintenance	X	X	X	X	X	X	X				X	X	X	X	X	X						X	X	
Landscape and Recreational Facilities	X	X	X	X	X	X	X	X	X	X	X	X	X			X					X			
Public Buildings	X	X	X	X	X	X	X	X	X	X	X	X	X				X				X			
Other	X	X	X	X	X	X	X	←	AS NECESSARY TO COMPLY WITH PERMIT														→	
MEDIUM and LOW PRIORITY																								
Landscape and Recreational Facilities	X	X	X	X	X			X	X		X						X							
Public Buildings	X	X	X		X	X		X	X		X	X					X				X			
Other	X	X		←	AS NECESSARY TO COMPLY WITH PERMIT														→					

BEST MANAGEMENT PRACTICES FOR MUNICIPAL ACTIVITIES

Best management practices that will be implemented at selected municipal facilities are described below and address the following categories:

- General BMPs
- Landscaping BMPs
- Materials Handling BMPs
- Construction / Repair BMPs

General BMPs

1. Good Housekeeping

Good housekeeping practices are designed to maintain a clean and orderly work environment. A clean work environment reduces the possibility of accidental spills caused by mishandling of chemicals or equipment and should reduce safety hazards to facility personnel. Good housekeeping measures will be implemented in an effort to prevent pollutants from entering storm water discharges.

- Information on good housekeeping practices will be distributed during employee training sessions.
- Good housekeeping measures will be discussed at employee meetings.
- Employees will be informed of activities that could potentially cause contamination of storm water and the importance of carefully conducting these activities in areas that do not discharge/drain to storm sewers.
- Good housekeeping tips and reminders will be posted on employee bulletin boards.

2. Employee Training

An employee-training program will be implemented to inform employees of the components and goals of storm water management plans. The training program will create an overall sensitivity to pollution prevention concerns. Open discussions will be encouraged to further the importance and enhance the program. In addition, the effectiveness of the training program will be evaluated routinely to verify that information has been communicated effectively to the employees. The training program may consist of both formal and informal training. Training tools that may be included in the training program are:

- Employee handbooks,
- Films and slide presentations,
- Drills,
- Employee meetings,
- Bulletin boards,
- Suggestion boxes,

- Newsletters, and
- Environmental excellence awards or other employee incentive programs.

The overall education program is discussed in greater detail in Section 9 or the JURMP.

3. Visual Inspections

Designated personnel will conduct inspections of the facilities and storm water conveyance systems associated with them. These individuals will report inspection results to the City to ensure that any deficiencies are addressed. The City will schedule inspections on a regular basis.

4. Improved Operation and Maintenance

The City will establish proper operation and maintenance practices to ensure processes and equipment are working well to lead to a reduction of materials entering the environment. The City will review current maintenance activities, evaluate if the maintenance efforts can directly or indirectly contribute pollutants to receiving waters, revise procedures or adopt additional BMPs as necessary to reduce the contribution of pollutants to receiving waters during maintenance activities, and educate employees on revised procedures.

5. Waste Disposal and Recycling

Waste disposal areas will be kept free of litter and debris. Waste receptacles will have a cover or lid to prevent the contents from being dispersed by the wind or coming in contact with storm water. All recyclable wastes such as batteries, solvents, waste oil and anti-freeze will be stored in a covered area that prevents contact with storm water.

6. Preventive Maintenance

Onsite equipment will be maintained in good working condition. The preventive maintenance program will include regular inspections and testing of facility equipment. The storm water preventive maintenance program and BMPs shall expand upon the current preventive maintenance program to include storm water considerations.

7. Record Keeping

Record keeping systems will be established to document housekeeping and preventive maintenance inspections, and training activities. All housekeeping and preventive maintenance inspections will be documented. Inspection documentation will contain the following information:

- The date and time the inspection was performed
- Name of the inspector

- Items inspected
- Problems noted
- Corrective action required
- Date corrective action was taken.

Other means to document and record inspection results include field notes, timed and dated photographs, videotapes, and drawings and maps. All records will be retained at the facility for at least one year after the expiration of the permit.

Landscaping BMPs

1. Facility and Grounds Maintenance

The implementation of best management practices for campground, trail, and parking lot activities is designed to prevent pollutants from these areas from entering storm water conveyance systems. Litter and debris are collected and disposed of properly. All paved surfaces will be swept if necessary and the waste collected and disposed of properly. All storm drain inlets, culverts and dry creeks or swales will be kept clean and free from debris.

2. Irrigation Control

The City will periodically inspect irrigation facilities to ensure that only the necessary amount of water is being applied to landscaping. Over-watering can lead to increased storm water runoff containing fertilizer, pesticide, and pet waste pollutants.

3. Landscape Waste

Landscape waste consists of clippings, cuttings and droppings of leafy and woody materials. The following procedures will be implemented, where applicable, to assure that exposed materials and accumulated trimmings and litter will be disposed of properly and not to the storm drain system:

- Require all employees and contractors who generate landscape waste to dispose of it at a City-approved composting location or permitted landfill; include such provisions in landscape maintenance contracts.
- Place temporarily stockpiled material away from watercourses, and berm or cover stockpiles to prevent material releases to the storm drain system

4. Native Vegetation

The following procedures will be implemented, where applicable, to retain and plant native vegetation when practical to reduce water, fertilizer and pesticide needs.

- Determine existing native vegetation features (location, species, size, function, importance) and consider the feasibility of protecting them.
- Consider elements such as their effect on drainage and erosion, hardiness, maintenance requirements, and possible conflicts between preserving vegetation and the resulting maintenance needs.
- Where feasible, retain and/or plant selected native vegetation whose features are determined to be beneficial.

5. Mulch Use

When mulch is used in the landscape, it should be installed or placed in such a manner as to prevent its translocation into the storm drain system or natural waterways.

6. Pesticide, Herbicide, and Fertilizer Application and Handling

The Federal Pesticide, Fungicide, and Rodenticide Act and California Title 3, Division 6, Pesticides and Pest Control Operations place strict controls over pesticide application and handling and specify training, annual refresher, and testing requirements. The regulations generally cover: a list of approved pesticides and selected uses, updated regularly; general application information; equipment use and maintenance procedures; and record keeping. The California Department of Pesticide Regulations and the County Agricultural Commission coordinate and maintain the licensing and certification programs. All City employees who apply pesticides and herbicides in “agricultural use” areas such as parks, golf courses, rights-of-way and recreation areas will be properly certified in accordance with state regulations. Contracts for landscape maintenance will include similar requirements.

BMPs that will be implemented to reduce pollutants from pesticides, herbicides, and fertilizers include the following:

- a. City personnel who participate in the application of pesticides will be trained and licensed (Qualified Applicator License) and follow guidelines set by the California Department of Pesticide Regulations and the County Agricultural Commission.
- b. Agricultural pest control businesses working for the City will be supervised by a Qualified Applicator Licensee who has a current Qualified Applicator Certificate
- c. Every two years, the Qualified Applicator Certificate holder must show proof that they have secured a minimum of 20 hours of continuing education.
- d. City staff will record the applications of all chemical agents by noting the locations, type and quantity of chemicals used. Records will be added to the annual report submitted to the Department of Agriculture.
- e. The Qualified Applicator Certificate holder will conduct monthly inspections to monitor storage, handling and disposal of the pesticides.
- f. Personnel who participate in the application of herbicides for the City will be trained and follow guidelines set by the County Agricultural Commission.
- g. Fertilizers will be applied during the growing seasons- spring, summer, and fall.
- h. Trained City personnel will perform irrigation of landscaped areas.

- i. Drip irrigation and overhead irrigation methods using timers will be implemented, where appropriate, to avoid runoff from over-irrigation.
- j. The City will upgrade the irrigation system as technology improves.
- k. The City will identify locations where over-spraying occurs and rearrange the sprinklers to minimize the runoff as needed.
- l. The City will follow written recommendations prepared by a State Pesticide Advisor during pesticide application
- m. Employees will be trained to follow pesticide, herbicide, and fertilizer labels, and the material safety data sheet(s) (MSDS).
- n. All state, federal, and local regulations are followed in the use of pesticides, herbicides, and fertilizers.
- o. Pesticides, herbicides, and fertilizers will not be applied during or directly prior to storm events.
- p. Only pesticides that are quickly absorbed into the soil or plants should be used.
- q. Whenever practicable, integrated pest management techniques will be implemented.
- r. Pesticides will not be sprayed when there is a high possibility of the spray drifting into non-target areas or onto non-target vegetation, insects or animals.
- s. The City will maintain compliance with county and state reporting requirements for pesticide use.

More detail describing the management strategy for pesticides, herbicides, and fertilizers can be found in Section 2 of the JURMP

Minimizing the Use

The City will consider specific alternative products in lieu of pesticides to control insects, fungi and weeds: Certain insects, such as lacewing and ladybugs, can be used against unwanted pests. Compost and soil amendments can be used as natural alternatives to fertilizers. For more information on alternatives, agencies such as the Bio-Integral Resource Center (BIRC) in Berkeley, which conducts research and produces brochures and a newsletter on Integrated Pest Management, can be contacted. Information may also be obtained from modern gardening guides, such as the Sunset books.

Materials Handling BMPs

1. Spill Prevention and Response

Spills and leaks are one of the largest contributors of storm water pollutants. An effective plan will be developed and will include spill prevention and response procedures that identify potential spill areas, specific material handling procedures, descriptions of spill response procedures, and spill clean-up equipment. The plan will take steps to:

- Identify and characterize potential spills,
- Eliminate and reduce spill potential and
- Respond to spills when they occur in an effort to prevent pollutants from entering the storm water drainage system.

2. Material Inventory Procedures

Site personnel will maintain an up-to-date inventory of all hazardous and non-hazardous materials used at the facility. Chemicals used at the facility will be handled with adequate precaution. Hazardous and toxic materials used at the site will be identified, quantified, and managed in compliance with federal, state, and local regulations. In addition, materials will be recycled, reclaimed, and/or reused to reduce the volume of materials brought into the facility when possible, and less or non-toxic materials will be substituted for toxic materials.

3. Material Storage Practices

Hazardous waste and materials used will be properly identified, handled, and stored; and instructions shall be given to all site personnel. Improper storage of these materials can result in accidental spills and the release of materials. All underground or aboveground storage tanks will be designed and managed in accordance with applicable regulations, identified as a potential pollution source, and have secondary containment installed, such as a berm or dike with an impervious surface.

4. Storage Tanks

Accidental releases of chemicals from storage tanks can contaminate storm water with many different pollutants. Materials spilled, leaked, or lost from storage tanks may accumulate in soils or on other surfaces and be carried away by rainfall runoff. All specific standards set by Federal and State laws concerning the storage of oil and hazardous materials will be met. Employees will be well trained to reduce human errors that lead to accidental releases or spills. Regular inspections of the integrity of all containers (i.e. tanks, drums) will be performed. All tanks and drum storage areas, whether permanent or temporary, will have a secondary containment system.

5. Outside Storage

Raw materials, by-products, finished products, containers, and other materials stored in areas exposed to rain and/or runoff can pollute storm water. Storm water can become contaminated by a wide range of pollutants when solid or liquid materials wash off or dissolve into the storm water, or when containers spill or leak. If feasible, outside storage areas will be covered with a roof, and bermed, or enclosed to prevent storm water contact. Where overhead coverage is unavailable, a temporary waterproof covering will be used over potential pollutants stored outside. All potential pollutants stored outside will have some type of secondary containment system in case of spills or leaks.

6. Loading and Unloading Materials

Loading and unloading operations usually take place outside on docks or terminals. Materials spilled, leaked, or lost during loading and unloading may collect in the soil or

on other surfaces and be carried away by rainfall runoff or when the area is cleaned. Rainfall may wash off pollutants from machinery used to unload or load materials. If feasible employees will load and unload all materials and equipment in covered areas such as building overhangs at loading docks. Roof drains will be directed away from this area.

Construction/Repair BMPs

1. Sediment and Erosion Control

The majority of sites are paved or have other surfaces resistant to erosion. Any unpaved areas will be inspected for any evidence of erosion and repaired as soon as it is safe to do so. Should erosion affect on-site storm water management systems, remedial action will be taken to stop the erosion. This could involve planting vegetation, or patching or repaving deteriorated paved surfaces. If construction activity occurs on site, sediment and erosion control will be implemented and monitored. More details are provided in Appendix C.6, Construction Best Management Practices.

2. Street / Parking Lot Sweeping

Street sweeping is widely recognized as an effective method of reducing the amount of pollutants (litter, green waste, oils and grease and sediment) on street surfaces that may impact storm water. Street sweeping is most effective when sweepers have access to the entire length of the curb. In order to increase cleaning efforts, sweeper operators are advised to make a sufficient number of passes to maximize collection. In areas of chronic hindrances due to parked cars, the road crew will post temporary “no parking” signs.

Parking facilities will be cleaned on a regular basis to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions. If possible, dry cleaning methods will be used to prevent the discharge of pollutants into the storm water conveyance system. Sweeping or vacuuming the parking facility will be encouraged over any other method. If water is used to clean a parking facility the rinsate will not be allowed to enter any storm water conveyance systems or receiving waters. Wash water will be directed toward the sanitary sewer or collected and discharged to a pervious surface. Storm drains will be sealed with an impervious material before washing begins.

3. Vegetation Control

The objective of this BMP is to minimize the amount of material that might potentially reach the storm water conveyance system due to mechanical vegetation control measures. Mechanical vegetation control measures include, mowing grass, brush and tree trimming and the application of herbicides. Vegetation controls are most useful in areas of steep slopes adjacent to roadside channels, or within roadside swales. As a source control BMP, plants that are compatible with semi-arid conditions and native to

Southern California will be utilized, thus reducing the amount of trimming and mowing necessary. Roads that do not pose a threat to passing vehicles or pedestrians will be cut less frequently. In addition, hand held cutting tools will be used when possible to more adequately manage the waste and to conduct maintenance at optimal seasonal times.

4. Roadway and Bridge Maintenance

Regular maintenance activities for roads and bridges may include, filling potholes, minor construction for sidewalks, and maintenance of drainage channels. To minimize the impact to storm water resulting from the maintenance of these facilities, the following BMP's will be implemented:

- Repairing potholes to reduce sediment loss and erosion.
- Assuring that all spare filling material on the road is collected.
- Conducting maintenance measures during dry weather, when possible.
- Barricading drain inlets to reduce sediment or waste from entering the drain during maintenance and construction activities.
- Storing materials away from conveyance systems.
- Constructing temporary onsite washout areas.
- Managing concrete cutting waste properly
- Inspecting maintenance equipment for leaks.

5. Facility Repair, Remodeling and Construction

During construction of restrooms or camping and picnic areas, there are a number of best management practices that will be implemented. These include;

- Limiting the impervious area as much as possible
- If any form of grading or earth moving is necessary, employing sediment traps and barricades.
- If construction is due to start just prior to the forecast of inclement weather, diverting all runoff away from the construction site.

6. Vehicle and Equipment Maintenance Operations

Many vehicle and equipment maintenance operations use materials or create wastes that are harmful to humans and the environment. Storm water runoff from areas where these activities occur can become polluted by a variety of contaminants. Parked vehicles will be monitored closely for leaks and pans will be placed under any leaks to collect the fluids for proper disposal or recycling. The number of solvents used at the facility will be kept to a minimum to make recycling easier and to reduce hazardous waste management cost. Mechanics will clean vehicle parts without using liquid cleaners wherever possible to reduce waste.

Steam cleaning and pressure washing may be used instead of solvent parts cleaning. The wastewater generated from steam cleaning will be discharged to an on-site oil water

separator that is connected to a sanitary sewer or blind sump. Non-caustic detergents will be used instead of caustic cleaning agents, detergent-based or water-based cleaning systems in place of organic solvent degreasers, and non-chlorinated solvent in place of chlorinated organic solvents for parts cleaning.

7. Vehicle and Equipment Washing

Washing vehicles and equipment outdoors or in areas where wash water flows onto the ground can pollute storm water. Wash water can contain high concentrations of oil and grease, phosphates, and suspended solid. Vehicle wash water is considered a process wastewater and needs to be disposed of properly. The City will use biodegradable, phosphate-free detergents for washing vehicles as appropriate. All washing of vehicles or equipment will be done inside on an impervious surface. The wash water will be collected and treated at the facility and either recycled or discharged to the sanitary sewer system or collected and disposed of as an industrial waste. If it is not feasible to wash the vehicles or equipment inside, then a designated area outside will be assigned for washing. This area must be bermed to collect the wash water and graded to direct the wash water to a treatment or disposal facility.