Municipal Program - Best Management Practices (BMPs)

This section provides a description of the goals and objectives, types of activities that have the potential to discharge pollutants, types of conveyances, potential pollutants and a list of potential BMP options for each minimum high priority category. Particular BMPs are not advocated and are presented here as recommended minimums.

Designated BMPs for Specific Municipal Activities/Areas

1. ROADS, STREETS, HIGHWAYS, and PARKING FACILITIES

A) Program Goal and Objectives

This program component is applicable to the Streets Department. The goal of this program is to ensure storm water pollution prevention practices are considered when conducting activities on or around these locations.

B) Potential Pollutant Generating Activities

- Vehicle Use
- Minor repairs
- Potholing
- Construction (placement of pedestrian ramps, sidewalks)
- Maintenance of drainage channels
- Repaving activities
- Washing
- Sweeping
- Degreasing
- Parking of Vehicles and Equipment

C) Possible Pollutants of Concern

- Heavy Metals-Brake linings 20
- Oils and Grease-leaking engines
- Herbicides-vegetation control
- Pesticides-animal control
- Paints-pavement painting
- Solvents-used when painting
- Battery Acid
- Anti-freeze-leaking radiators
- Litter
- Green waste-road side clipping, mowing
- Sediment-construction and moving of earth
- Detergents

D) Best Management Practices (BMPs)

Once potential and existing sources of storm water contamination have been identified, the next step is to select proper measures BMPs to eliminate or reduce pollutant loadings in the storm water discharges, and to prevent storm water from becoming contaminated with pollutants. These may include processes, procedures, and structural controls, and are selected to prevent contamination by stressing the importance of storm water management and employee awareness of potential pollutant sources. BMPs must be selected and implemented, where applicable, that are appropriate to prevent or mitigate pollution generated from the specific activities at the site.

a) Street 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. Trucks that collect the trash instead of pushing it around are the preferred alternative. The City uses two types of street sweepers depending on the type of debris to be removed. A broom sweeper is utilized to remove heavy silt and debris and a vacuum sweeper is utilized to collect litter and leaves. Both sweepers are in compliance with air quality requirements of Rule 1186. The frequency of street sweeping depends on traffic volume, arterial streets, such as Highway 101, and collector streets, such as Santa Fe Road, are swept weekly. Residental areas are swept monthly.

b) Litter Control

This program consists of street sweeping and removal of litter and debris from roadways, right-of-ways, drainage channels, parks and open space on an as-needed basis. Public Works crew initiate litter collection based on visual observations during routine maintenance activities, citizen complaints, and routine collection in areas of known debris accumulation. Litter is collected by Public Works crews and County Probation crews.

c) Roadway and Bridge Maintenance

The 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 are suggested;

- Repair potholes to reduce sediment loss and erosion.
- Be sure that all spare filling material on the road is collected.
- Conduct maintenance measures during dry weather
- Barricading drain inlets to reduce sediment or waste form entering the drain during maintenance and construction activities
- Storing materials away form conveyance systems.
- Constructing temporary onsite washout areas.
- Managing concrete cutting waste properly
- Inspect maintenance equipment for leaks.

d) Parking Surface Cleaning

Parking facilities are required to be cleaned on a regular basis to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions. If possible use dry cleaning methods to prevent the discharge of pollutants into the storm water conveyance system. Sweeping or vacuuming the parking facility is encouraged over any other method. If water is used to clean a parking facility the rinsate is not allowed to enter any storm water conveyance systems or receiving waters. Wash water should be directed toward the sanitary sewer or collected and discharged to a pervious surface. Seal storm drains with an impervious material before washing begins. Structural BMPs such as storm drain inlet filters can be very effective in reducing the amount of pollutants discharged from parking facilities during periods of rain.

e) Housekeeping Practices

Soapy water remaining in mop or wash buckets should be discharged to the sanitary sewer through a sink, toilet, clean-out or wash area with drain. Routinely sweep, shovel and dispose of litter in the trash. Use dry clean-up techniques for chemical or oil spills. (e.g. scatter absorbent on the spill, let it completely absorb then sweep it all up and dispose of it in the proper manner).

2. CORPORATE STORAGE YARDS FOR MATERIALS, WASTE, EQUIPMENT AND VEHICLE MAINTENANCE, PUBLIC BUILDINGS, LANDSCAPE AND RECREATIONAL FACILITIES

A) Program Goal and Objectives

Activities at these facilities may generate waste, spills or leaks that could reach the storm drain system and receiving waters. The goal of this program is to ensure storm water pollution prevention practices are considered when conducting activities at these municipal facilities. For the purposes of this program, a public vehicle maintenance facility is determined to be any City-owned or operated facility that conducts industrial activity, operates equipment, performs fleet vehicle maintenance on ten or more vehicles per day (this includes repair, maintenance, washing, or fueling), or performs maintenance or repair of heavy industrial machinery/equipment.

A material storage facility stores chemicals, raw materials, or waste materials in quantities that require a hazardous materials business plan or a Spill Prevention, Control, and Counter-measures (SPCC) plan.

B) Pollutants of concern and sources

At a minimum, the potential for the following pollutants shall be addressed:

- Waste oil,
- Scrap metal,
- Used antifreeze,
- Used oil filters,
- Oily rags or towels,
- Sediment,
- Sludge, and
- Normal refuse associated with daily operations.
- Nutrients
- Pesticides
- Herbicides
- Nutrients
- Bacteria
- Metals
- Oils and Grease

C) Best Management Practices (BMPs)

Once potential and existing sources of storm water contamination have been identified, the next step is to select proper measures (BMP's) to eliminate or reduce pollutants in storm water discharges, and to prevent storm water from becoming contaminated with pollutants. These may include processes, procedures, and structural controls, and are selected to prevent contamination by stressing the importance of storm water management and employee awareness of potential pollutant sources. BMP's must be selected and implemented, where applicable, that are appropriate to prevent or mitigate pollution generated from the specific activities at the site.

a) 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 are or will be implemented in an effort to prevent pollutants from entering storm water discharges.

- Information on good housekeeping practices should be distributed during employee training sessions.
- Good housekeeping measures should be discussed at employee meetings.
- Employees should 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 drains.
- Good housekeeping tips and reminders should be posted on employee bulletin boards.

b) Improved Operation and Maintenance

Establish proper operation and maintenance practices to ensure processes and equipment are working well to lead to a reduction of materials entering the environment. 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.

c) Material Storage Practices

Hazardous waste and materials used shall 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. Any underground or aboveground storage tanks shall be designed and managed in accordance with applicable regulations, be identified as a potential pollution source, have secondary containment, such as a berm or dike with an impervious surface.

d) Material Inventory Procedures

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

e) Preventive Maintenance

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

f) Spill Prevention and Response

Spills and leaks are one of the largest contributors of storm water pollutants. An effective plan shall have spill prevention and response procedures that identify potential spill areas, specify material handling procedures, describe spill response procedures, and provide spill clean-up equipment. The plan should 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.

g) 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 variety of contaminants. Parked vehicles should be monitored closely for leaks and pans should be placed under any leaks to collect the fluids for proper disposal or recycling. The number of solvents used at the facility should be kept to a minimum to make recycling easier and to reduce hazardous waste management cost. Mechanics should 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 must be discharged to an on-site oil water separator that is connected to a sanitary sewer or blind sump. Non-caustic detergents should be used instead of caustic cleaning agents, detergent-based or water-based cleaning systems in place or organic solvent degreasers, and non-chlorinated solvent in place of chlorinated organic solvents for parts cleaning.

h) Waste Disposal and Recycling

Waste disposal areas should be kept free of litter and debris. Waste receptacles must 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 28 batteries, solvents, waste oil and anti-freeze should be stored in a covered area that prevents contact with storm water.

i) 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 should use biodegradable, phosphate-free detergents for washing vehicles as appropriate. All washing of vehicles or equipment should be done inside on an impervious surface. The wash water must 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 should 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.

j) 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 should load and unload all materials and equipment in covered areas such as building overhangs at loading docks. Roof drains should be directed away from this area.

k) 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 must be met. Employees shall 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) should be performed. All tanks and drum storage areas, whether permanent or temporary, should have a secondary containment system.

l) 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. The City should store all materials inside. If this is not feasible, then all outside storage areas should be covered with a roof, and bermed, or enclosed to prevent storm water contact. At the very minimum, a temporary waterproof covering should be used over all materials stored outside. All materials stored outside should have some type of secondary containment system in case of spills or leaks.

m) Landscape Waste

Landscape waste consists of clippings, cuttings and droppings of leafy and woody materials. The following procedures should 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 approved composting location or permitted landfill; include such provisions in landscape maintenance contracts.
- Place temporary stockpiled material away from watercourses, and berm or cover stockpiles to prevent material releases to the storm drain system.

n) 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 are swept if necessary and the waste is collected and disposed of properly. All storm drain inlets, culverts and dry creeks or swales are kept clean and free from debris.
All storm drain inlets should be covered when hosing the parking lot then wet-vac back into the sanitary system.

Minimizing the Use

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, contact agencies such as the Bio-Integral Resource Center (BIRC) in Berkeley, which conducts research and produces brochures and a newsletter on Integrated Pest Management. Modern gardening guides, such as the Sunset books, also include information on fertilizer and pesticide alternatives.

o) 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. The City of Encinitas endorses the Integrated Pest Management document created by Dr. Donald Trotter for implementation on the Cities public facilities.

Minimizing the Use

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 un-wanted pests. Compost and soil amendments can be used as natural alternatives to fertilizers. For more information on alternatives, contact agencies such as the Bio-Integral Resource Center (BIRC) in Berkeley, which conducts research and produces brochures and a newsletter on Integrated Pest Management. Modern gardening guides, such as the Sunset books, also include information on fertilizer and pesticide alternatives.

p) Facility Repair, Remodeling and Construction

During repair, remodeling and construction activities, there are a number of best management practices that should be implemented. Some examples include:

- Limiting the impervious area as much as possible
- Protect storm drain inlets to prevent the discharge of pollutants
- Employ erosion and sediment control if there is disturbed soil that has the potential to be discharged into a conveyance or receiving water
- If construction is due to start just prior to the forecast of inclement weather, divert all runoff away from the construction site

2. INDUSTRIAL FACILITIES

Industries are required to prepare a SWPPP (Storm Water Pollution Prevention Plan) and implement the BMPs prescribed therein. The following minimum BMPs are required for industrial sites:

- Maintain an up-to-date SWPPP for facility, and perform monitoring as required by the State General Industrial Permit. Monitoring results must be sent to the City of Encinitas annually.
- Vehicles must be cleaned in designated washing areas that provide for water recycling or discharge to the sewer system. These areas must be graded or bermed to prevent storm water run-on, use phosphate-free and biodegradable products whenever possible, and train staff on proper maintenance measures for the wash areas.
- Re-fueling areas are required to have readily accessible spill response equipment (including portable absorbent booms), to consider overhead coverage, train employees on methods to minimize pills and respond to spills, and provide readily available and bottom-sealed trash receptacles.
- Parking lots are required to be regularly (weekly or monthly) broom (dry) swept (cleaning with water is prohibited). Trash receptacles are required in parking lots to discourage litter. Fluid spills shall be cleaned up immediately with absorbent rags or material.
- Vehicle maintenance must be performed under cover with proper disposal of used fluids, parts, and rags.
- Prompt containment, cleanup, and reporting of any spills that may pose a threat to human or environmental health, including any spills to the storm drain system.

Reporting and Record Keeping

Record keeping and internal reporting represent good operating practices because they can increase the efficiency of the facility and the effectiveness of BMPs. A good record keeping system helps the facility minimize incident recurrence, correctly respond with appropriate cleanup activities, and comply with legal requirements. A record keeping and reporting system shall be set up by the City documenting spills, leaks, and other discharges, including discharges of hazardous substances in reportable quantities. Spills and other discharges are to be reported in accordance

with the permit. Incident records describe the quality and quantity of non-storm water discharges to the storm sewer. These records should contain the following information:

- Date and time of the incident
- Weather conditions
- Duration of the spill/leak/discharge
- Cause of the spill/leak/discharge
- Response procedures implemented
- Persons notified
- Environmental problems associated with the spill/leak/discharge

Separate record keeping systems have been established to document housekeeping and preventive maintenance inspections, and training activities. All housekeeping and preventive maintenance inspections should 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 are field notes, timed and dated photographs, videotapes, and drawings and maps. All records shall be retained at the facility for at least one year after the expiration of the permit.

City owned and operated Industrial facilities have regulatory requirements placed on them in addition to the Permit. Each industrial facility must also meet specific waste discharge requirements and require compliance with a separate NPDES Permit. They include the following:

- Municipal Airports
- Active or inactive landfills
- Hazardous waste treatment, disposal and recovery facilities
- Water Treatment facilities/systems

In the City of Encinitas the only Industrial sites are the San Elijo Wastewater Facility and the Bus Depot at San Dieguito High School