



## DF-1

# DRAINAGE FACILITY OPERATION AND MAINTENANCE

**As a consequence of its function, the stormwater conveyance system collects and transports urban runoff and storm water that may contain certain pollutants. Consequently these pollutants may accumulate in the system and must be removed periodically. In addition, the systems must also be maintained to function properly hydraulically to avoid flooding. Maintaining the system may involve the following activities:**

**Inspection and Cleaning of Stormwater Conveyance Structures**

**Controlling Illicit Connections and Discharges**

**Controlling Illegal Dumping**

## MODEL PROCEDURES:

### 1. Inspection and Cleaning of Drainage Facilities

#### General Guidelines

- ✓ Annually inspect and clean drainage facilities as needed and maintain appropriate records.
- ✓ Remove trash and debris as needed from open channels and properly dispose of these materials (at an approved landfill or recycling facility). It should be noted that major debris removal may require other regulatory permits prior to completing the work.
- ✓ Conduct annual visual inspections during the dry season to determine if there are problem inlets where sediment/trash or other pollutants accumulate.
- ✓ Eliminate any discharges that may occur while maintaining and cleaning any municipal drainage facilities.
- ✓ Train crews in proper maintenance activities, including record keeping and disposal.

## Storm Drain Flushing

- ✓ Provide energy dissipaters (e.g. riprap) below culvert outfalls to minimize potential for erosion.
- ✓ Flushing of storm drains or storm drain inlets should only be done when critically necessary and no other solution is practical.
- ✓ If flushed, to the extent practical the material should be collected (vacuumed), treated with an appropriate filtering device to remove sand and debris and disposed of properly.

*must be obtained for any discharge of wash water to the sanitary sewer from the local sewerage agency.*

## Waste Management

- ✓ Store wastes collected from cleaning activities of the drainage facilities in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- ✓ Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device to remove the sand and debris prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not permitted, water should be pumped or vacuumed to a tank and properly disposed of. Do not dewater near a storm drain or stream.

## 2. Controlling Illicit Connections and Discharges

**Improper physical connections to the storm drain system can occur in a number of ways, such as overflow cross-connects from sanitary sewers and floor drains from businesses like auto shops and restaurants. Illicit discharges and illegal connections can generally be detected and investigated through a combination of programs and approaches that target a variety of pollutants and sources.**

- ✓ Report prohibited discharges such as dumping, paint spills, abandoned oil containers, etc. observed during the course of normal daily activities so they can be investigated, contained, and cleaned up.
- ✓ Conduct field investigations to detect and eliminate existing illicit connections and improper disposal of pollutants into the storm drain (i.e. identify problem areas where discharges or illegal connections may occur and follow up stream to determine the source(s)).
- ✓ Report all observed illicit connections and discharges to the City 24-hour water pollution problem reporting hotline (949) 366-1553.

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- ✓ Encourage public reporting of improper waste disposal by distributing public education materials and advertising the 24-hour water pollution problem reporting hotline.



## **Storm Drain Stenciling**

- ✓ Implement a storm drain stenciling program.

*Storm drain system signs act as highly visible source controls that are typically stenciled directly adjacent to storm drain inlets.*

## **3. Controlling Illegal Dumping**

**Illegally dumped wastes can cause storm water and receiving water quality problems as well as clog the storm drain system itself. Non-hazardous solid wastes may include garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semi-solid wastes and other discarded solid or semi-solid waste provided that such wastes do not contain wastes which must be managed as hazardous wastes, or wastes which contain soluble pollutants in concentration which exceed applicable water quality objectives or could cause degradation of waters of the state.**

### **Field Investigation**

- ✓ Report prohibited discharges such as dumpings observed during the course of normal daily activities so they can be investigated, contained and cleaned up.
- ✓ Conduct field investigations to detect and eliminate improper disposal of pollutants into the storm drain (i.e. identify problem areas where discharges or illegal connections may occur and follow up stream to determine the source(s)).
- ✓ Report all observed illicit connections and discharges to the City 24-hour water pollution problem reporting hotline (949) 366-1553.
- ✓ Encourage public reporting of improper waste disposal by distributing public education materials and advertising the 24-hour water pollution problem reporting hotline.

## **Training/Education/ Outreach**

- ✓ Annually train municipal employees to recognize and report illegal dumping.
- ✓ Encourage public reporting of illegal dumping by advertising the City 24-hour water pollution problem reporting hotline (949) 366-1553.

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## **LIMITATIONS:**

Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.

## **REFERENCES:**

California Storm Water Best Management Practice Handbooks. Municipal Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

Harvard University. 2002. Solid Waste Container Best Management Practices – Fact Sheet On-Line Resources – Environmental Health and Safety.

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July. 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program. 1997 Urban Runoff Management Plan. September 1997, updated October 2000.