



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:

1. Inspection and Cleaning of Stormwater Conveyance Structures
2. Controlling Illicit Connections and Discharges
3. Controlling Illegal Dumping

This list of Model Maintenance Procedures can be utilized as an inspection checklist to determine where better compliance with Designated Minimum Best Management Practices (notated with checkmarks and capital letters) is needed, and to recommend Additional Best Management Practices (notated with bullet points and lower case letters) that may be applicable under certain circumstances, especially where there are certain Pollutant Constituents of Concern. BMPs applicable to certain constituents are notated as:

Bacteria (BACT) Sediment (SED) Nutrients (NUT) Oil and Grease (O&G) Pesticides (PEST)
Other Toxic Compounds (TOX) Trash (TRASH) Hydrological Impacts (HYD) Any/All or General (ANY)

Program/Facility Being Inspected: _____

Date: _____ Inspector Name: _____

When completed, the checklist should be attached to the General Inspection Form Cover Sheet and copies should be provided to the Supervisor of the Facility/Program being inspected.

MAINTENANCE PROCEDURES:

1. Inspection and Cleaning of Drainage Facilities

Unsatisfactory	OK	General Guidelines
<input type="checkbox"/> _____	<input type="checkbox"/>	T 1A. Annually inspect and clean drainage structures as needed.
<input type="checkbox"/> _____	<input type="checkbox"/>	T 1B. Maintain appropriate records of cleaning and inspections.
<input type="checkbox"/> _____	<input type="checkbox"/>	T 1C. Properly dispose of removed materials at a landfill or recycling facility.
<input type="checkbox"/> _____	<input type="checkbox"/>	T 1D. Conduct intermittent supplemental visual inspections during the wet season to determine if there are problem inlets where sediment/trash or other pollutants accumulate, and provide for additional cleanouts as appropriate.
<input type="checkbox"/> _____	<input type="checkbox"/>	T 1E. Prevent or clean up any discharges that may occur during the course of maintenance and cleaning procedures.
<input type="checkbox"/> _____	<input type="checkbox"/>	T 1F. Verify that appropriate employees or subcontractors are trained in proper conductance of maintenance activities, including record keeping and disposal.
<input type="checkbox"/> _____	<input type="checkbox"/>	T 1G. Annually inspect and clean v-ditches as needed, prior to the wet season. On shrub-covered slopes, vegetative debris may be placed on the downhill side of the ditch. Trash should be bagged and disposed at a landfill.

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<input type="checkbox"/> _____		<input type="checkbox"/>	<p>General Guidelines (cont.)</p> <ul style="list-style-type: none"> • 1a. Remove trash or debris as needed from open channels. It should be noted that major vegetative debris removal may require other regulatory permits prior to completing the work. (TRASH) • 1b. Consider retrofitting energy dissipaters (e.g. riprap) below culvert outfalls to minimize potential for erosion. (SED) • 1c. Repair any v-ditches that have cracked or displaced in a manner that accelerates erosion. (SED) • 1d. If suspicious conditions appear to exist, test selected samples of the removed wastes for compliance with hazardous waste regulations prior to disposal. (TOX) • 1e. Consider more frequent regular cleaning of selected drainage structures to help address ongoing specific impairments. (SED, BACT, NUT, TRASH) • 1f. Consider structural retrofits to the MS4 to help address ongoing specific impairments (SED, BACT, NUT, TRASH, O&G) • 1g. Consider cleaning out pipes at gradient breaks or other in-pipe debris accumulation points as identified/needed. (ANY, BACT, NUT, TRASH) <p>Storm Drain Flushing</p> <ul style="list-style-type: none"> • 1h. Flushing of storm drains or storm drain inlets should only be done when critically necessary and no other solution is practical. (SED, BACT, TRASH). • 1i. 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. (SED) <p>Waste Management</p> <ul style="list-style-type: none"> T 1H. 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. • 1j. 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. (SED, TRASH) • 1k. Provide for laboratory analysis of at least one randomly collected sediment (less the debris) sample per year from the storm drain inlet leaning program to ensure that it does not meet the EPA criteria for hazardous waste. If the sample is determined to be hazardous, the sediment must be disposed of as hazardous waste and the source should be investigated. (TOX).
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<p>2. Controlling Illicit Connections and Discharges</p>	
<p>Unsatisfactory</p> <p><input type="checkbox"/> _____ <input type="checkbox"/></p> <p>_____</p> <p><input type="checkbox"/> _____ <input type="checkbox"/></p> <p>_____</p> <p><input type="checkbox"/> _____ <input type="checkbox"/></p> <p>_____</p> <p><input type="checkbox"/> _____ <input type="checkbox"/></p> <p>_____</p> <p><input type="checkbox"/> _____ <input type="checkbox"/></p> <p>_____</p> <p><input type="checkbox"/> _____ <input type="checkbox"/></p> <p>_____</p>	<p>OK</p> <p><input type="checkbox"/></p> <p>General Guidelines</p> <p>T 2A. 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.</p> <p>T 2B. Where field observations and/or monitoring data indicate significant problems, 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)). (Refer to Appendices A-10 and A-11.)</p> <p>T 2C. Report all observed illicit connections and discharges to the 24-hour water pollution problem reporting hotline (714) 567-6363.</p> <p>T 2D. Encourage public reporting of improper waste disposal by distributing public education materials and advertising the 24-hour water pollution problem reporting hotline.</p> <p>Storm Drain Stenciling (“No Dumping—Drains to Ocean”)</p> <p>T 2E. Implement and maintain a storm drain stenciling program.</p> <ul style="list-style-type: none"> • 2a. Consider adding the hotline number to the storm drain stencils (BACT, TOX, TRASH).
<p>3. Controlling Illegal Dumping</p>	
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<p>Unsatisfactory OK</p> <p><input type="checkbox"/> _____ <input type="checkbox"/></p> <p>_____</p> <p><input type="checkbox"/> _____ <input type="checkbox"/></p> <p>_____</p> <p><input type="checkbox"/> _____ <input type="checkbox"/></p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>Training/Education/Outreach</p> <p>T 3F. Verify that appropriate employees and subcontractors are trained to recognize and report illegal dumping.</p> <p>T 3G. Encourage public reporting of illegal dumping by advertising the 24-hour water pollution problem reporting hotline (714) 567-6363.</p> <ul style="list-style-type: none"> • 3b. Take extra steps to educate the public in neighborhoods where illegal dumping has occurred to inform them why illegal dumping is a problem, and that illegal dumping carries a significant financial penalty. (ANY)
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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.