

Oakland County Water Resources Commissioner Work Instruction CDM-0415	DATE: 03/09/2015	Doc. File Name: Maintenance and Cleaning.doc
	REV. # 1:	
	TITLE: Drain Inspection, Maintenance and Cleaning	APPROVED BY: Supervisor

1.0 Purpose

To provide the procedure used by Construction Drain Maintenance (CDM) Unit staff for inspections and maintenance of combined sewers, open and enclosed storm drainage systems and stormwater structural controls.

2.0 Scope

This Work Instruction applies to all CDM staff assigned to work on county storm drains maintained by the Oakland County Water Resources Commissioner (WRC).

3.0 Responsibility

- 3.1 WRC CDM Supervisors will be responsible to make sure all cleaning on the drains has been completed in a safe and timely manner and appropriate forms have been completed.
- 3.2 The WRC CDM Engineering Technician will be responsible for making sure computer database is kept updated and functioning properly.
- 3.4 All WRC CDM Staff will be expected to follow all safety procedures and WRC Confined Space Policy while performing their daily work assignments.

4.0 Procedure

Supervisor II will provide work orders and assign work to the cleaning crew leader. Once completed, the Supervisor will review reports and forms and forward to clerical. Confined Space Entry Hazard Assessment Forms will be available to field personnel.

4.1 Combined Sewer Inspection and Maintenance:

- 4.1.1 Combined Sewer Systems are inspected on a 3-year inspection cycle.
- 4.1.2 Sewer manholes will be unbolted, opened, and cleaned using a vactor or jet truck then closed and covers bolted back down.
- 4.1.3 Complete the Drain/Sewer Cleaning Report (Form DC-194) in CAMS and submit work order back to Supervisor to be reviewed.

4.2 Open Ditch Inspection:

- 4.2.1 Open ditches are inspected on a 3-year inspection cycle.
- 4.2.2 All CDM Staff will review work to be done with Supervisor.
- 4.2.3 When doing inspection, use WRC CAMS work order with attached inspection sheet (Open Ditch Field Inspection Report, DC-195). Fill out all information and close inspection. Send the work order back to the Supervisor.

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4.3 Enclosed Drain and Stormwater Structural Controls Inspection and Maintenance

- 4.3.1** Enclosed drains and stormwater structural controls are inspected on a 3-year inspection cycle.
- 4.3.2** Drain Inspection and Repair Supervisor I will provide CAMS work orders which include the Inspection Form, DC-224, for their inspection crews.
- 4.3.3** Drain structures will be opened, inspected and cleaned (if needed), then closed. The following items will be considered during inspection:
 - 4.3.3.1** Confined Space Entry Hazard Assessment Forms
 - 4.3.3.2** Condition of the structure
 - 4.3.3.3** Leaks
 - 4.3.3.4** Evidence of illicit discharges (i.e. presence of dry weather flow, water clarity, color, odor, floatable materials, deposits/stains, vegetation change or structural damage)
 - 4.3.3.5** Debris (NOTE: If debris is found, it shall be removed whenever possible and properly disposed of.)
 - 4.3.3.6** Complete Storm Structure Field Sheet (Form DC-224) in CAMS and close. Submit the work order back to the Supervisor to be reviewed.

4.4 Televising:

- 4.4.1** This process is a visual inspection of the interior of enclosed storm drainage systems with special communications equipment to determine possible causes of problems such as roots, broken pipe and dips in the line.
 - 4.4.1.1** A work order will be generated by the clerical staff for televising and forwarded to the appropriate Supervisor for completion. The following are reasons for televising:
 - 4.4.1.1.1** Response to customer complaints (as determined by Supervisor)
 - 4.4.1.1.2** Result of inspection (as determined by Supervisor)
 - 4.4.1.1.3** Actual plugged storm drainage system
 - 4.4.1.1.4** Request from CVT (City, Village, Township) or other WRC Unit
 - 4.4.1.2** CDM crews will perform televising and completely fill out the following forms:
 - 4.4.1.2.1** Work Order (Form DC-221)
 - 4.4.1.2.2** Closed Circuit Televising Report (Form DC-178)
 - 4.4.1.2.3** Drain Daily Maintenance Report (Form DC-193)
 - 4.4.1.2.4** The above paperwork will be forwarded to the CDM Supervisor for review.

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4.5 Major Inspection:

- 4.5.1 All WRC CDM Supervisors will generate CAMS work orders with attached Inspection Forms DC-195 and/or DC-224 for the inspection crew or crews.
- 4.5.2 Verify field condition of storm drainage system conforms to as-built map. If a structure has been abandoned or a new structure found, notify Supervisor, fill out fields in CAMS, and turn in marked-up map. Work orders will be sent to GIS for map change by GIS staff.
- 4.5.3 Visually inspect stormwater structural controls (as described in section 4.4 of this work instruction) and add information on Form DC-224 by checking and filling in all appropriate boxes.
- 4.5.4 For manholes (MH), take measurement from top of MH frame to invert of pipe for MH depth. Measure top of cone to bottom of frame for adjustment. Count steps and input data in appropriate boxes in CAMS.
- 4.5.5 Close MH and secure cover.

4.6 Dye Test:

- 4.6.1 Requests come from Engineering to CDM Supervisor.
- 4.6.2 All initial requests for dye test must be given to CDM clerical staff to have appointment made and a CAMS work order issued.
- 4.6.3 Work order with appointment time will be given to supervision, which will then assign a crew to do test.
- 4.6.4 Crew must locate structure downstream of location to be dye tested and watch for at least 30 minutes after dye is injected into area for dye to show up.
- 4.6.5 Investigation findings will be reported to supervisor with written results on CAMS work order. The work order will be reviewed and discussed with the requesting entity.

4.7 Disposal of Operation and Maintenance Waste Materials:

- 4.7.1 All solid and liquid waste collected in a Vactor truck by the above activities will be transported and disposed of at the Oakland Avenue Septage Facility dump site by application to the drying beds. The de-watered solids will be disposed of properly at a licensed landfill.

4.8 Illicit Discharge Investigations

- 4.8.1 The CDM Supervisor will follow up on all drains and structures indicated as having a potential illicit discharge. The CDM supervisor or appropriate staff completes the IDEP/ SWAT Field Investigation Summary, Form DC-244, as necessary, and forwards the information to the Environmental Unit for follow-up investigation.
- 4.8.2 The CDM supervisor may initiate an emergency spill response as per Spill Response Procedure, P-043, for discharges of a hazardous substance or significant pollutants.

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5.0 Training:

5.1 CDM staff, Maintenance Mechanic I's and above, are Construction Certified Storm Water Operators.

- 5.1.1 All CDM Staff are trained on Stormwater Awareness, including illicit discharge Identification and reporting procedures.
- 5.1.2 CDM Supervisors and Inspection staff assigned to investigate illicit discharges sources are trained on Illicit Discharge Investigation techniques and procedures.
- 5.1.3 CDM Supervisors, and staff responsible for managing and responding to emergencies under Spill Response Procedure, P-043, have been trained as per section 6.11 of that procedure.

6.0 Related Documents

- 6.1 Storm Structure Field Sheets, Form DC-224
- 6.2 Drain/Sewer Cleaning Report, Form DC-194
- 6.3 Daily Maintenance Work Report, Form DC-193
- 6.4 Confined Space Entry Hazard Assessment Forms (printed from the Hazard Assessment Database)
- 6.5 IDEP/ SWAT Field Investigation Summary, DC-244
- 6.6 Spill Response Procedure, P-043
- 6.7 Open Ditch Field Inspection Report, DC-195

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