

Standard Operating Procedures

Town of Braintree

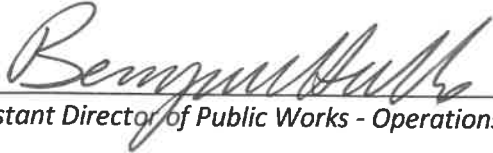
Department of Public Works

Catch Basin Inspection and Cleaning

Issue Date:

6/29/2019

Approved by:



Assistant Director of Public Works - Operations

Purpose of SOPs:

Procedures for the inspection and maintenance of catch basins, frequency of cleaning, disposal of debris, and recordkeeping to prevent pollution from entering the stormwater sewer systems.

MA Small MS4 General Permit Requirement Summary:

Part 2.3.7.a.iii.2.

The permittee shall optimize routine inspections, cleaning and maintenance of catch basins such that the following conditions are met:

- Prioritize inspection and maintenance for catch basins located near construction activities (roadway construction, residential, commercial, or industrial development or redevelopment). Clean catch basins in such areas more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings.
- Establish a schedule with a goal that the frequency of routine cleaning will ensure that no catch basin at anytime will be more than 50 percent full.
- If a catch basin sump is more than 50 percent full during two consecutive routine inspections/cleaning events, the permittee shall document that finding, investigate the contributing drainage area for sources of excessive sediment loading, and to the extent practicable, abate contributing sources. The permittee shall describe any actions taken in its annual report.
- For the purposes of this part, an excessive sediment or debris loading is a catch basin sump more than 50 percent full. A catch basin sump is more than 50 percent full if the contents within the sump exceed one half the distance between the bottom interior of the catch basin to the invert of the deepest outlet of the catch basin.
- The permittee shall document in the SWMP and in the first annual report its plan for optimizing catch basin cleaning, inspection plans, or its schedule for gathering information to develop the optimization plan. Documentation shall include metrics and other information used to reach the determination that the established plan for cleaning and maintenance is optimal for the MS4. The permittee shall keep a log of catch basins cleaned or inspected.
- The permittee shall report in each annual report the total number of catch basins, number inspected, number cleaned, and the total volume or mass of material removed from all catch basins.

Part 2.3.a.iii.4.

The permittee shall ensure proper storage of catch basin cleanings and street sweepings prior to disposal or reuse such that they do not discharge to receiving waters.

Standard Operating Procedures
Town of Braintree
Department of Public Works
Catch Basin Inspection and Cleaning

Issue Date:

6/29/2019

Equipment Inventory:

The following is a list of street sweeping equipment:

Equipment Number	Make	Description
#32	International 7400	2012 Vactor – Rodder/Vacuum Truck
#5	International 40S490	1999 Dump truck with clam shell bucket crane
#1	International 40S490	2000 Dump truck with clam shell bucket crane

Operations

1. Operate all equipment according to the manufacturer’s recommended settings, standards, and procedures.
2. If spills occur or illegal discharges are seen, report to immediate supervisor.

Maintenance

1. Equipment will be checked for leaks during daily vehicle inspection. Immediately contain and properly clean up any spills.
2. Regular preventative maintenance to prolong equipment use (such as greasing moving parts and minor adjustments) occur weekly.
3. Parts are replaced as necessary.
4. Equipment is washed at DPW – Highway Yard located at 245 Union St to trap grease, oils and sediment.

Standard Operating Procedures

Town of Braintree

Department of Public Works

Catch Basin Inspection and Cleaning

Issue Date:

6/29/2019

Cleaning Procedure

Catch basin inspection cleaning procedures should address both the grate opening and the basin's sump. Document any and all observations about the condition of the catch basin structure and water quality on the Catch Basin Inspection Form (attached).

Catch basin inspection and cleaning procedures include the following:

1. Work upstream to downstream.
2. Clean sediment and trash off grate.
3. Visually inspect the outside of the grate.
4. Visually inspect the inside of the catch basin to determine cleaning needs.
5. Inspect catch basin for structural integrity.
6. Determine the most appropriate equipment and method for cleaning each catch basin.
 - a. Manually use a shovel to remove accumulated sediments, or
 - b. Use a bucket loader to remove accumulated sediments, or
 - c. Use a high pressure washer to clean any remaining material out of catch basin while capturing the slurry with a vacuum.
 - d. If necessary, after the catch basin is clean, use the rodder of the vacuum truck to clean downstream pipe and pull back sediment that might have entered downstream pipe.
7. If contamination is suspected, chemical analysis will be required to determine if the materials comply with the Massachusetts DEP Hazardous Waste Regulations, 310 CMR 30.000 (<http://www.mass.gov/dep/service/regulations/310cmr30.pdf>). Chemical analysis required will depend on suspected contaminants. Note the identification number of the catch basin on the sample label, and note sample collection on the Catch Basin Inspection Form.
8. Properly dispose of collected sediments. See following section for guidance.
9. If illicit discharges are observed or suspected, notify the appropriate Department.
10. At the end of each day, document location and number of catch basins cleaned, amount of waste collected, and disposal method for all screenings.
11. Report additional maintenance or repair needs to the appropriate Department.

Storage and Disposal

1. Temporary storage of solid sweeping debris is on an impervious surface or in a truck/dumpster that is protected from runoff. The storage location(s) is/are DPW Highway Yard and Leaf Compost Site
2. Solid catch basin cleaning debris is brought to SEMASS for permanent disposal.

Standard Operating Procedures

Town of Braintree

Department of Public Works

Catch Basin Inspection and Cleaning

Issue Date:

6/29/2019

Training

1. Employees are trained yearly on this procedure and the proper operation of equipment. Employees are also trained on stormwater pollution prevention, spill and response, and illicit discharge detection and elimination procedures.

Record Keeping

1. Records are kept at the DPW Highway Division Office.
2. Approximate cubic yards of debris removed are recorded at the end of each day.
3. Document location and number of catch basins cleaned at the end of each day.
4. Catch Basin inspection logs are filed daily.
5. A list of employees implementing the SOPs and the completion of their training(s) can be found at the DPW Highway Division Office at 245 Union St.

Revising the SOPs

1. These procedures are reviewed yearly and updated as needed.

CATCH BASIN INSPECTION AND CLEANING

Catch basins help minimize flooding and protect water quality by removing trash, sediment, decaying debris, and other solids from stormwater runoff. These materials are retained in a sump below the invert of the outlet pipe. Catch basin cleaning reduces foul odors, prevents clogs in the storm drain system, and reduces the loading of suspended solids, nutrients, and bacteria to receiving waters.

During regular cleaning and inspection procedures, data can be gathered related to the condition of the physical basin structure and its frame and grate and the quality of stormwater conveyed by the structure. Observations such as the following can indicate sources of pollution within the storm drain system:

- Oil sheen
- Discoloration
- Trash and debris

Both bacteria and petroleum can create a sheen on the water surface. The source of the sheen can be differentiated by disturbing it, such as with a pole. A sheen caused by an oil will remain intact and move in a swirl pattern; a sheen caused by bacteria will separate and appear “blocky”. Bacterial sheen is not a pollutant but should be noted.

Observations such as the following can indicate a potential connection of a sanitary sewer to the storm drain system, which is an illicit discharge.

- Indications of sanitary sewage, including fecal matter or sewage odors
- Foaming, such as from detergent
- Optical enhancers, fluorescent dye added to laundry detergent

Each catch basin should be cleaned and inspected at least annually. Catch basins in high-use areas may require more frequent cleaning. Performing street sweeping on an appropriate schedule will reduce the amount of sediment, debris, and organic matter entering the catch basins, which will in turn reduce the frequency with which structures need to be cleaned.

CATCH BASIN INSPECTION FORM

Catch Basin I.D.		Final Discharge from Structure? Yes <input type="checkbox"/> No <input type="checkbox"/> If Yes, Discharge to Outfall No: _____	
Catch Basin Label:	Stencil <input type="checkbox"/>	Ground Inset <input type="checkbox"/>	Sign <input type="checkbox"/> None <input type="checkbox"/> Other _____
Basin Material:	Concrete <input type="checkbox"/>	Catch Basin Condition:	Good <input type="checkbox"/> Poor <input type="checkbox"/>
	Corrugated metal <input type="checkbox"/>		Fair <input type="checkbox"/> Crumbling <input type="checkbox"/>
Basin Material:	Stone <input type="checkbox"/>	Pipe Material:	Pipe Measurements:
	Brick <input type="checkbox"/>		
Basin Material:	Other: _____ <input type="checkbox"/>	Pipe Material:	Outlet Dia. (in): D= _____
	Concrete <input type="checkbox"/>		
Basin Material:	HDPE <input type="checkbox"/>	Pipe Material:	
	PVC <input type="checkbox"/>		
Basin Material:	Clay Tile <input type="checkbox"/>	Pipe Material:	
	Other: _____ <input type="checkbox"/>		
Required Maintenance/ Problems (check all that apply):			
<input type="checkbox"/> Tree Work Required <input type="checkbox"/> New Grate is Required <input type="checkbox"/> Pipe is Blocked <input type="checkbox"/> Frame Maintenance is Required <input type="checkbox"/> Remove Accumulated Sediment <input type="checkbox"/> Pipe Maintenance is Required <input type="checkbox"/> Basin Undermined or Bypassed		<input type="checkbox"/> Cannot Remove Cover <input type="checkbox"/> Ditch Work <input type="checkbox"/> Corrosion at Structure <input type="checkbox"/> Erosion Around Structure <input type="checkbox"/> Remove Trash & Debris <input type="checkbox"/> Need Cement Around Grate Other: _____	
Catch Basin Grate Type :	Sediment Buildup Depth :	Description of Flow:	Street Name/ Structure Location:
Bar: <input type="checkbox"/>	0-6 (in): _____	Heavy <input type="checkbox"/>	
Cascade: <input type="checkbox"/>	6-12(in): _____	Moderate <input type="checkbox"/>	
Other: _____	12-18 (in): _____	Slight <input type="checkbox"/>	
Properly Aligned: Yes <input type="checkbox"/>	18-24 (in): _____	Trickling <input type="checkbox"/>	
No <input type="checkbox"/>	24 + (in): _____		
*If the outlet is submerged check yes and indicate approximate height of water above the outlet invert. h above invert (in): _____			Yes <input type="checkbox"/> No <input type="checkbox"/>
<input type="checkbox"/> Flow <input type="checkbox"/> Standing Water (check one or both)	Observations:	Circle those present:	
	Color: _____	Foam	Oil Sheen
	Odor: _____	Sanitary Waste	Bacterial Sheen
Weather Conditions :	Dry > 24 hours <input type="checkbox"/>	Wet <input type="checkbox"/>	
Sample of Screenings Collected for Analysis? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Comments:	Orange Staining		Floatables
	Excessive sediment		Pet Waste
	Other: _____		Optical Enhancers

Inspector: _____

Date: _____