

Municipal Separate Storm Sewer System (MS4) Program

CATCH BASIN/STREET SWEEPING MANAGEMENT

Introduction

All storm water management systems, whether gray or green, require maintenance. Appropriate operation and maintenance activities ensure that storm water practices will continue to function properly and yield expected water quality and environmental benefits, protect public safety, meet legal standards, and protect communities' financial investment ([United States Environmental Protection Agency \[USEPA\] Reference: The Importance of Operation and Maintenance for the Long-Term Success of Green Infrastructure](#)). Structural and operational best management practices (BMP) are necessary to remove pollutants. Operational BMPs include proper cleaning of the road and catch basins. Street sweeping and catch basin cleaning should be considered together to maximize pollutant removal, especially in Total Maximum Daily Load (TMDL) areas..

Catch Basins

Operational BMPs for catch basin and street sweeping residuals are a necessary part of the Stormwater Management Plan required by the NPDES Permit for the discharge of storm water from a municipal separate storm sewer system (MS4) and good practice for municipalities throughout the state. This compliance assistance document provides information on developing an appropriate operation and maintenance schedule; however, specifics of the contributing area should be considered to maximize water quality protection.

CATCH BASIN CLEANING

Catch basins are equipped with a sump to retain pollutants from the contributing area. Resuspension and discharge of sediment previously collected in the catch basin sump may occur if the sump is too full. In general, the more frequently catch basin sumps are cleaned out, the better the pollutant removal efficiency.

- Catch basins should be inspected annually to identify issues in a timely manner. At a minimum, catch basins should be inspected at least once every three years and the sump cleaned when 30-40% full, unless a more frequent schedule is necessary to ensure proper treatment capacity is maintained within the sump.
- Catch basin inspections and cleaning should be well documented.
- Wastes generated from catch basin cleaning shall be properly disposed.

Some areas may need more frequent inspections. Catch basins near construction activities (roadway construction, residential, commercial, or industrial development or redevelopment) or high-use areas should be inspected and cleaned more frequently if inspections find excessive sediment or debris loadings quickly filling the sump to 30-40%.

The recommended method of material removal from catch basin sumps is using a vactor truck. The combined solid and liquid waste stream from cleaning storm sewers systems, including catch basin sumps, is legally defined as “liquid industrial by-product” pursuant to [Part 121, Liquid Industrial By-Products, of the NREPA](#). If an environmental spill (e.g., a fuel spill) were captured by a storm sewer system, the material in the storm sewer system could be a hazardous waste pursuant to the [Part 111, Hazardous Waste Management, of the NREPA](#), and subject to additional requirements.

VISUAL INSPECTION

Catch basin inspection and cleaning procedures must address both the grate and basin sump. At a minimum, include the following:

- Work upstream to downstream,
- Clean sediment off the grate,
- Visually inspect the outside of the grate and structural conditions.
- Inspect the catch basin for structural integrity.
- Evaluate the catch basin wastewater for color, odor, floatable materials, sheen.
- Determine the most appropriate equipment and method for cleaning the catch basins.
- Properly dispose of collected sediments.
- At the end of each day, document the location and number of catch basins cleaned, amount of waste collected, and disposal method for all screenings.

Street Sweeping

Street sweeping involves the use of specialized equipment to remove litter, loose gravel, soil, pet waste, vehicle debris and pollutants, dust, de-icing chemicals, and industrial debris from streets, parking lots, and other impervious infrastructure. If a street or parking lot does not have any storm drains and curbs (just sheet flow to a vegetated swale or ditch), it may not need to be swept. Street sweeping equipment can consist of a truck or truck-like vehicle equipped with multiple brushes, pick-up deflector, holding bin, water sprayer, vacuum nozzle and filter, or a combination of some or all of these features. Hand sweeping is not a preferred option but can be acceptable in certain circumstances.

Sweeping is recommended at least four times per year. Street sweeping in some areas may decrease the frequency in which Catch Basins need to be cleaned. It is recommended to perform street sweeping:

1. After heavy rainstorms at locations where sediment is present on the streets.
2. At locations adjacent to construction sites where sediment has left the site and entered the street.

3. At least once during the fall to collect leaves and keep them out of the sewer system.
4. At least once during the early spring to collect sand, deicing material, and winter debris left behind during snow melt.

TYPES OF SWEEPERS

Street sweeping effectiveness is a function of sweeping frequency, number of passes per sweeping, equipment speed and pavement conditions. Street sweepers must be operated at the proper equipment design speed and ensure proper maintenance.

Below are two examples of types of street sweepers:

- Mechanical broom street sweepers are effective in removing heavier debris such as sand or gravel and less effective at picking up finer material. Mechanical broom sweepers are used in the construction industry. Mechanical broom sweepers are ideal for the heavy build-up encountered after flooding or even a yearly spring cleanup. Mechanical Broom Sweepers are great for road clean-up following big construction and milling projects.
- Regenerative air/vacuum sweepers are green sweepers that combine sustainability with efficiency. A regenerative air sweeper features air-blast capability, large gutter brooms, a heavy-duty suction hose and a large hopper. It is a powerful, versatile sweeper that can remove debris, dirt, and trash. Its fuel efficiency and large water tank enables the user to get more cleaning done without frequent stops in order to refuel, dump or re-water the truck. These sweepers are frequently used to remove trash, fine dirt, rocks, gravel, and leaves from parking lots. (atlanticsweeping.com/sweeping-services/sweeper-choices/)

For more information on street sweeping, see Stormwater Magazine’s article, “[Street Sweeping 101.](#)”

Catch Basin/Street Sweeping Waste Handling

Waste generated from catch basin cleaning activities and discharged back into the storm sewer system is unauthorized per Part 31, Water Resources Protection (Part 31) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) and is therefore illegal. Please refer to the [Catch Basin Materials Management Guide](#) for guidance on the disposal of materials from both street sweeping and catch basin cleaning activities.

If you have any questions regarding catch basin cleaning activities or other aspects of the MS4 application, please contact your [MS4 Compliance Staff Person](#).

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