

Description¹

Periodic storm sewer system cleaning can help to remove accumulated sediment, trash, and other substances from various components of the storm sewer system including inlets, pipes and stormwater BMPs. Some common pollutants found in storm drains include: trash and debris, sediments, oil and grease, antifreeze, paints, cleaners and solvents, pesticides, fertilizers, animal waste, and detergents. Routine cleaning reduces the amount of pollutants, trash, and debris both in the storm drain system and in receiving waters. Clogged drains and storm drain inlets can cause the drains to overflow, leading to increased erosion (Livingston et al. 1997).

Cleaning increases dissolved oxygen, reduces levels of bacteria, and supports in-stream habitat. Areas with relatively flat grades or low flows should be given special attention because they rarely achieve high enough flows to flush themselves (Ferguson et al. 1997).



Photograph SSC-1. Storm drain cleaning may help to remove pollutant sources and helps to maintain the capacity of the storm pipes.

Appropriate Uses

Storm sewer system cleaning is typically conducted by local governments or state agencies; however, homeowners associations, businesses and industries are usually responsible for maintaining system components on their sites.

Due to the cost and time involved with storm sewer system cleaning, communities may target recurrent problem areas or use another type of prioritization system for maintenance. Also see the BMP Maintenance chapter for BMP-specific maintenance requirements.

Practice Guidelines

A variety of jet/vacuum vehicles can be used to remove debris from stormwater catch basins and pipes. This equipment breaks up clogged/accumulated material with high-pressure water jets and vacuums the material from the sewer. Water used in storm drain cleaning must be collected and properly disposed of, typically at a sanitary wastewater treatment facility.

Simpler methods in localized areas can also include manual trash collection and shoveling from inlets and outlets.

¹ Guidelines adapted from Center for Watershed Protection (2009) *Urban Stormwater Restoration Manual Series 8: Municipal Practices and Programs*.

Frequency and prioritization of storm sewer cleaning is affected by multiple factors such as the activity and intensity of use in the tributary area (e.g., parking lot, stadium), storm sewer system design, municipal budgets (staff and equipment), and other factors.

To be most effective, storm sewer cleaning needs an effective recordkeeping system and clearly defined procedures. CWP (2009) recommends the following practices:

- **Tracking:** The location and maintenance of storm drains should be tracked using a database and spatial referencing system (e.g., Global Positioning System or Geographic Information System). Additionally, knowing the type and era of the storm drain system may be of use since some inlets/catch basins are designed to be self-cleaning while others have some trapping capacity.
- **Frequency:** Should be defined such that blockage of storm sewer outlet is prevented and it is recommended that the sump should not exceed 40- 50 percent of its capacity. Semi-annual cleanouts in residential streets and monthly cleanouts for industrial streets are suggested by Pitt and Bissonnett (1984) and Mineart and Singh (1994). More frequent cleanouts should be scheduled in the fall as leaves can contribute 25% of nutrient loadings in catch basins.
- **Technology:** A variety of methods of cleaning catch basins are available, including manual cleaning, eductor vehicles, vacuum cleaning and vacuum combination jet cleaning. Choose the approach that is most effective for site conditions, taking into consideration budget, equipment, and staffing constraints.
- **Staff training:** Operators need to be properly trained in catch basin maintenance including waste collection and disposal methods. Staff should also be trained to report water quality problems and illicit discharges.
- **Material disposal:** Most catch basin waste is of acceptable quality for landfills. If it is suspected that catch basin waste contains hazardous material, it should be tested and disposed of accordingly. Maintenance personnel should keep a log of the amount of sediment collected and the removal date at the catch basin.