



DUPAGE COUNTY

STORMWATER MANAGEMENT

Best Management Practices for Storm Sewer Cleaning

Overview and Benefit to Water Quality

Stormwater runoff collects pollutants from roadways, parking lots, and other surfaces and flows into storm drain inlets, the storm sewer system, and our local waterways. A storm sewer system is usually comprised of a vast pipe network of various diameters and occasionally large inline debris collecting structures. If not periodically cleaned, storm drains can accumulate large amounts of debris and pollutants, which can lead to drainage and water quality issues. Benefits of cleaning and maintaining storm sewers include:

- Improving water quality by removing sediment and debris that can carry pollutants into rivers, lakes, and streams.
- Reducing the risk of flooding by ensuring that storm sewers can properly convey stormwater runoff.
- Extending the lifespan of storm sewer infrastructure.
- Reducing maintenance costs associated with blocked sewers requiring heavy cleaning.

DuPage County DOT's maintenance program inspects and cleans approximately 17,000 storm sewer system and outfall points and 1.2 million ft of storm sewer lines on a 5-to-7-year rotation.

Options

There are a variety of options available for cleaning storm sewers. The best option for a particular situation will depend on several factors, including the size and type of storm sewer infrastructure, the amount of sediment and debris present, and the budget available.

While manual cleaning with hand tools is sometimes necessary, sewer jetting is most commonly used. Two-man crews are usually required. A catch basin cleaning program is commonly implemented along with storm sewer cleaning.

Equipment and Technology



The most commonly used equipment for cleaning storm sewers is a jetter/vacuum truck. Jetter/vacuum trucks apply pressurized water to free and remove sediment and debris. Other types of equipment that can be used to clean storm sewers include hand tools for manual removal of smaller amounts of sediment and debris, and bucket loaders to remove larger amounts.

Costs

The cost of cleaning storm sewers varies on the size and type of storm sewer, the amount of sediment and debris present, and the method of cleaning used. Hand cleaning involves primarily labor costs, but depending on the number of areas to be cleaned, could be the most costly method. For a community with a large system, using a jetter/vacuum truck will be more cost effective. Costs for the proper disposal of debris should also be considered.

Vacuum trucks can cost between \$300,000 and \$700,000 based on size and technology options. Due to the high capital cost of vacuum trucks, some communities have shared the purchase of the equipment, or contracted out catch basin cleaning.

Recommendations

Equipment

Closed circuit television (CCTV) inspection is normally used to determine if a storm sewer is in need of cleaning. Jetter/vacuum trucks are the recommended equipment for storm sewer cleaning for most applications. They are efficient and effective and can be used to clean a variety of drainage system structures.

Frequency

The frequency of storm sewer cleaning will vary depending on several factors, including the location of the storm sewer and the amount of sediment and debris that typically accumulates in an area. In general, storm sewers should be inspected and cleaned every five to ten years. Storm sewers located in areas that generate significant amounts of debris or are prone to flooding may need to be cleaned more often.

Schedule and Recordkeeping

A storm sewer cleaning schedule should be developed based on the location and the amount of sediment and debris that typically accumulates in the storm sewers. Some municipalities clean all storm sewers on a 5-year basis, cleaning approximately 20% of their storm sewers annually. A portion of the storm sewer system should be inspected annually to assess conditions and identify any potential problems.

Waste Management

Material collected by storm sewer cleaning must be stored and handled in a manner that does not allow the material to enter stormwater runoff. Prior to landfill or other disposal, provide a storage location that does not allow the material to dewater to, or enter storm drains. The County's Woodridge Regional Vector Receiving Station is an option. Covering the material to prevent exposure to stormwater is recommended.

Additional Considerations

Communities can also consider the following to optimize their storm sewer cleaning program:

- The public should be educated about the importance of storm sewer cleaning and how to prevent storm sewers from becoming clogged. This can be done through public outreach campaigns and educational materials.
- If storm sewers are not inspected and cleaned routinely, heavy cleaning and/or structural repair may be necessary adding significantly to system maintenance costs
- Train crews in proper maintenance, recordkeeping, and waste disposal activities.

Conclusion

Storm sewer cleaning plays a vital role in reducing stormwater pollutants and protecting local water quality. By implementing the best management practices outlined in this guidance, communities can maximize the benefits of their system maintenance and stormwater quality program.

