



DUPAGE COUNTY

STORMWATER MANAGEMENT

Best Management Practices for Street Sweeping

Overview and Benefit to Water Quality

Stormwater runoff collects pollutants from roadways, parking lots, and other paved surfaces and flows into storm drain inlets and our local waterways. Street sweeping is a very effective way to prevent roadway pollutants from entering stormwater runoff.

Routine street sweeping removes pollutants such as sediment, litter, leaves, oil and grease, metals, nutrients, and bacteria. Street sweeping minimizes the quantity of pollutants that enter our waterways, improving water quality and protecting aquatic life. An effective street sweeping program has several other benefits, including enhancing the appearance of streets and neighborhoods, clearing drain inlets for proper drainage, extending pavement life, improving air quality, and reducing road noise.



DuPage County DOT's street sweeping program removes approximately 600 tons of material from 500 curb and shoulder miles of County roadways annually.



Costs

The cost of a street sweeper does not vary considerably between the different types of sweeper. Prices can range from approximately \$250,000 to \$450,000 based on technology options. Sweeper rental is an option, as well as contracting out street sweeping.

Implementation cost varies on the size of the community and the frequency of sweeping. Cost per curb mile swept varies greatly from community to community, from a few hundred dollars to several thousand dollars per mile.

Recommendations

Equipment

As vacuum and regenerative air sweepers are generally more effective at removing pollutants from paved surfaces than mechanical sweepers, especially for smaller pollutant particle sizes, they are recommended for local street sweeping programs.

Options

Equipment and Technology

There are three main types of street sweepers: mechanical sweepers, vacuum sweepers, and regenerative air sweepers. Mechanical sweepers use brushes to sweep debris off the street and into a collection hopper. Vacuum sweepers use brushes and suction to collect debris into a collection hopper. Regenerative air sweepers use a blower to force air onto surfaces to dislodge debris, followed by suction to collect the debris into a hopper.

Vacuum and regenerative air sweepers are generally more effective than mechanical sweepers at removing pollutants, especially smaller particle size pollutants, from paved surfaces.

Frequency

Street sweeping is recommended as soon as possible after spring snow melt to collect debris and excess salt left behind from the winter season. Afterward, the frequency of street sweeping can depend on several factors, including the type of street, the amount of traffic, and the time of year. It is recommended that communities aim to sweep their streets approximately once per month through the summer, with more frequent sweeping in high-traffic, industrial, or other priority areas.

Street sweeping is also recommended after fall leaf collection. Encourage residents not to place leaf piles in the street or near storm drain inlets.

Schedule and Recordkeeping

Communities should develop a street sweeping schedule based the type of street, the amount of traffic, and the time of year. The schedule should be flexible enough to allow for more frequent sweeping in high-traffic areas or to accommodate climate concerns. Areas with more sweepings collected should be prioritized, along with roads with high industrial activity and high imperviousness. Logs tracking curb-miles swept and the amount of sweepings collected should be kept.

Public Outreach

Communities should educate residents about the importance of street sweeping and the role that it can play in helping to keep streets and local waterways clean. Residents can help by not sweeping leaves and debris into the street, and by parking their cars off the street on scheduled sweeping days.

Equipment Maintenance

Communities should properly maintain their street sweepers daily and weekly to ensure that they are operating efficiently and effectively. Regular maintenance includes cleaning and clearing debris from a sweeper's mechanical components, checking and replacing brushes, vacuum filters, and other parts.

Waste Management

The material collected by street sweeping must be stored and handled in a manner that does not allow the material to enter stormwater runoff. Prior to landfill disposal, provide a storage location that does not allow the material to dewater to, or enter storm drains. Covering the material to prevent exposure to stormwater is recommended.

Additional Considerations

In addition to frequent street sweeping, communities can also consider the following to optimize their street sweeping program:

- Sweeping prior to predicted heavy rain events.
- Sweeping after parades, street fairs, markets, and other public events.
- Sweeping after snow melts to remove deicing materials.
- Sweeping in the early morning hours when there is less traffic.
- Sweeping streets in both directions.
- Using water to suppress dust during sweeping.
- Training crews in proper maintenance, recordkeeping, and waste disposal activities.

Conclusion

Street sweeping 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 street sweeping and stormwater quality program.

