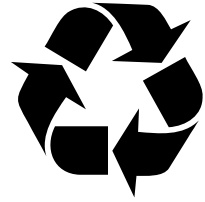




GUIDELINE FOR MUNICIPAL MANAGEMENT PRACTICES FOR STREET SWEEPINGS & CATCH BASIN CLEANINGS



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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Purpose: These guidelines have been developed to assist municipal officials in managing the use and/or disposal of street sweepings and catch basin cleanings. Sweeping streets and cleaning catch basins to remove accumulated sediments, trash, and debris reduces the amount of pollutants entering Connecticut's watercourses and waterbodies. Regularly cleaning catch basins also reduced the threat of local flooding. In fact, addressing Best Management Practices (BMPs) for street sweeping residuals is a necessary part of the *stormwater management plan* required by the General Permit for the Discharge of Stormwater from Small Municipal Storm Sewer Systems (MS4 Stormwater Permit). Approximately 130 municipalities are required to obtain the MS4 Stormwater Permit and even municipalities who are not required to obtain that permit should plan for and implement best management practices for handling street sweepings and catch basin cleanings.

Municipalities that collect street sweepings or clean out catch basins must keep in mind that the debris they collect may not be clean fill. Therefore, if a municipality uses both street sweepings and catch basin cleanings in a manner that is not consistent with this guidance, the municipality may inadvertently incur environmental liability. Following the recommended guidelines should aid in the prevention of inadvertent filling of wetlands, sedimentation of surface water resources, and the potential for exposing people to levels of pollutants in the debris that poses a risk to public health. *Municipal officials planning on implementing measures other than those presented here should first consult with the Department. Contact information is provided at the end of this guidance.*

Street Sweepings and Catch Basin Cleanings Defined:

- **Street sweepings** are materials such as sand, salt, leaves, broken glass, small pieces of metal, and other litter and debris removed from streets, parking lots and sidewalks in order to prevent these materials from being washed into storm sewers and surface waters, and to improve the appearance and safety of public roadways. Street sweepings are not as clean as virgin earth materials and should be handled with a certain degree of care. Street sweepings usually contain low levels of chemical compounds associated with stormwater runoff. Zinc

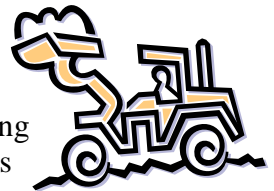
and copper have surpassed lead as being the most common metal contained in road sediments. Sodium and compounds associated with asphalt and motor oils can also be found. A vehicular accident or spill can result in high levels of these hazardous compounds.

- **Catch basin cleanings** are the materials such as sand, silt, leaves and debris that accumulate in and are removed from catch basins. Materials that are removed from other drainage structures such as swirl concentrators, separators, detention and retention basins are often similar to catch basin cleanings and generally should be handled in a similar manner. The material removed from catch basins generally contains a higher percentage of fine-grained material such as silt and clay. They are usually wet and usually have higher organic content from decomposing wet leaves than do street sweepings. Catch basin cleanings generally have higher levels of pollutants than street sweepings. The finer grained sediments in catch basins and other drainage structures adsorb more metals and other pollutants than the coarser sand typically found in street sweepings. Catch basins are also more likely to have been affected by spills and polluted runoff than street sweepings.

Street sweepings and catch basin cleanings that have been affected by spills of gasoline or hazardous waste should not be handled in accordance with this guidance. Materials from these sources, whether or not they are removed by a sweeping process, must be tested to determine if they are hazardous. If hazardous, they must be managed in accordance with hazardous waste disposal requirements. If such materials are not hazardous, they must be either *disposed* of at a permitted waste disposal facility in accordance with an authorization issued by DEP under section 22a-209-8 of the Regulations of Connecticut State Agencies or *reused* in accordance with the requirements for reuse of polluted soils under Section 22a-133k-2(h).

Planning Considerations for Street Sweepings and Catch Basin Cleanings:

All municipalities are encouraged to develop a comprehensive management plan for collecting street sweepings and catch basin cleanings, for safely storing such materials, for reusing such materials locally in a manner that does not pose a risk to public health or a risk to wetland and water quality and, if necessary, for disposing of the material. Municipalities must keep in mind that some of the street sweepings and, more likely, catch basin cleanings may be so polluted that they cannot be safely reused. In developing the comprehensive plan for the management of street sweepings and catch basin cleanings, municipalities should identify and implement practices that will optimize the opportunities for reuse. Generally, this will involve the following planning considerations:



1. **Planning for when and how often street sweeping should be done and catch basins cleaned** – There are a number of factors that municipalities should take into account when determining the timing and frequency of sweeping streets and cleaning catch basins. For instance, Section 6(a)(6) of the MS4 Stormwater Permit dictates the minimum frequency for cleaning and sweeping to be once a year. Another requirement is the evaluation of areas/structures to determine those that may require more frequent cleaning. Factors to consider for evaluation may consist of categorizing roads for traffic volumes, number of accidents (which can contribute to spills), number of catch basins, proximity to watercourses and wetlands, litter frequency (which can lead to clogged catch basins) and overhead vegetation, e.g. tree canopies (which may contribute to clogged catch basins in the fall). Additional guidance on

best management practices for the timing and frequency of sweeping streets and cleaning catch basins is in the Best Management Practices sections of this document.

2. *Planning for the volumes of street sweepings and catch basin cleanings* – In order to develop a plan for managing street sweepings and catch basin cleanings, the municipality should estimate the volumes of materials generated in a year. A textbook formula for estimating street sweepings says that the quantity of material can be estimated either on a ton-per-street-mile or on a pounds-per capita basis. The former is preferred. An average figure for urban areas is 20.25 tons-per street-mile. The amount of street sweepings will be a direct result of how much sand is applied during the winter season. A simple way to calculate this amount is to divide the yearly average amount of sand purchased by the miles of road within the municipality. Then, figure that anywhere from one third to one half of the sand applied will be collected in the spring. For catch basins in urban areas, an acceptable estimating value is 0.1 pounds-per-calendar-day.
3. *Planning for the quality of street sweepings and catch basin cleanings* – In general the quality of street sweepings and catch basin cleanings will determine the options a municipality has for reuse of the material. Sweepings that are generated from the same road or type of road under much the same conditions are likely to have fairly consistent pollutant levels. The MS4 Stormwater Permit requires, within urbanized areas, that municipalities develop and implement a program to evaluate and prioritize those streets that may require sweeping more than once a year. For instance, municipalities may categorize streets and roads in the more intensely developed areas as "urban" and streets in less dense residential areas as "non-urban". Street sweepings from urban roads will typically have more debris and higher levels of pollutants. Such street sweepings may require more testing, and a higher level of processing prior to reuse. Municipalities may want to consider managing street sweepings from the urban streets separately from non-urban street sweepings. Guidance on testing the quality of street sweepings and catch basin cleanings is provided in the Best Management Practices sections of this document. Guidance on limited reuse options for street sweepings without any chemical testing is also provided in that section. *Because catch basin cleanings are generally more polluted than street sweepings, unless a municipality plans to dispose of the material at a waste disposal facility, catch basin cleanings should not be mixed with street sweepings.* However, if testing data shows that the catch basin cleanings are similar to street sweepings, municipalities should consult with the Department about mixing the materials. Contact information for consulting the Department is provided at the end of this guidance.
4. *Planning for appropriate storage areas* – A critical aspect of management is the selection of the location of sites for storing and processing street sweepings and catch basin cleanings. Such locations should be sized to handle the expected volume of material to be collected and allow for any testing or processing necessary for reusing the material. The storage area should be designed in a manner that will not result in the erosion of storage piles, the generation of excessive dust and debris and that will properly control stormwater runoff from the site.
5. *Planning for reuse and disposal options* – Guidance on options for reusing street sweepings or catch basin cleanings is provided below.

BEST MANAGEMENT PRACTICES FOR STREET SWEEPINGS

When to sweep streets: The department recommends that municipalities conduct street sweeping as soon as possible after snow melt. The longer the sand is on the road, the more the coarse sand particles are abraded, rounded and reduced in size. Since the finer particles are more likely to absorb pollutants, prompt sweeping reduces not only the amount of silt levels in catch basins and watercourses but also reduces the amount of pollutants entering surface water bodies. Prompt spring cleanup may also reduce the amount of incidental debris associated with the sand. Prompt pick up before the sand is rounded and abraded also increases the opportunity to reuse the material for road sanding the following winter by blending a portion of the sweepings, after processing, into new street sand.

Municipalities that are required to obtain the MS4 Stormwater Permit should be guided by their stormwater management plan's evaluation/prioritization of streets and roads to effectively know which are in high traffic or urban areas and as a result, may require sweeping more than once a year.

How to sweep streets: As the preferred BMPs, the Department recommends applying a light spray of water to minimize dust before sweeping. Wetting the surface and promptly sweeping up the sand, salt, and other fines limits immediate air quality problems. A preferred alternative to sweeping is vacuuming.

In addition, the Department does not recommend the use of high velocity blowers. The blowers often create violations of the Air Regulations as well as defeat the basic purpose of sweeping and managing the sweepings in an environmentally sound manner. In some instances debris may be blown from the streets onto adjoining property. Owners then may simply push the debris back onto the roads, from which it can then enter a nearby watercourse.

Temporary storage site: Temporary storage (less than one year) of street sweepings prior to reuse or disposal should be located in an area where the sweepings will not wash into wetlands or watercourses. Good temporary storage sites include:

- a. an empty salt storage shed if available;
- b. a municipal site where sand and salt are normally handled; or
- c. a paved area that is more than 100 feet from a wetland or watercourse.

Piles of the collected sweepings must be stockpiled on a paved or other sufficiently impervious surface if within an aquifer protection area, or an area where drinking water wells are located, and should be located more than 100 feet from any wetland or watercourse. If a municipality wants to consider a storage area closer than 100 feet from a wetland or watercourse, they should first consult with the Department and evaluate what additional precautions should be implemented to prevent any impact to the wetland or watercourse.

The Department recommends that storage piles be covered with a tarpaulin or, at least, 10 mil plastic sheeting to minimize erosion, dust and runoff. Municipalities may want to limit the height of storage piles, to the extent space allows, to no higher than 10 to 15 feet as stockpiles higher than that will be difficult to cover and manage for dust and erosion control.

Preparing Street Sweepings for Reuse: Prior to reuse, materials such as trash, leaves and debris should be removed from the street sweepings by screening or other appropriate method and such materials should either be disposed of at a permitted solid waste facility, recycled (e.g. aluminum cans) or taken to a composting facility (e.g. leaves). A 3/4-inch mesh will screen out much of the debris from collected street sweepings prior to mixing. If a municipality chooses to rinse the sweepings to remove the fine particles and debris so that the sand may be reused on roads during the following winter, be sure to contact the department for additional guidance and discharge requirements.

Reuse Options for Screened Street Sweepings without Analytical Testing: It is acceptable to reuse screened street sweepings without analyzing the concentration of chemical compounds in the followings ways:

- Mixed with new salt/sand mixture for winter application to roads, parking lots or sidewalks,
- As daily cover on an active permitted lined or unlined landfill;
- As the sub-grade beneath a paved municipal road or parking lot, or for filling potholes provided the sweepings are covered by asphalt,
- As fill in the median strip of a divided highway; or as fill along road shoulders within the municipally owned *public right-of-way** provided that the completed fill is covered with asphalt or, if unpaved, with a minimum of four (4) feet of uncontaminated soil. Sweepings used in this manner should be located more than 100 feet from a wetland, watercourse, or water supply well.
- As aggregate in concrete or asphalt;



* The *public right-of-way* means the strip of land under a publicly owned paved road or highway and includes the publicly owned land adjacent to the road or highway. *Screened street sweepings for which the concentration of chemical compounds has not been determined should not be used as fill on any land that is not owned by the municipality.*

Reuse Options for Screened Street Sweepings with Analytical Testing: In order to use street sweepings as fill in the following circumstances, the screened sweepings should be tested for the following chemical compounds at a frequency of one sample per 500 yards of sweepings:

- Heavy metals, including copper, zinc, lead and arsenic;
- Semi-volatile Organic Compounds.

The analytical results should be compared to the direct exposure criteria established in the Remediation Standard Regulations, Section 22a-133k-1 through 3, Appendix A of the Regulations of Connecticut State Agencies. If some samples exceed the applicable direct exposure criteria, the municipality should determine the average concentration at the 95% upper confidence limit, and compare the average to the appropriate criteria.

1. *As Fill* – Screened street sweepings may be used for fill material on an industrial or commercial property, provided the testing shows that concentrations or the average concentration is below the industrial/commercial direct exposure criteria established in Appendix A of the Remediation Standard Regulations and provided the municipality obtains the permission of the owner of the property.

Screened street sweeping should not be used as fill that could be easily exposed or is at the surface on residential property, public playgrounds, or recreational facilities, because broken glass or other sharp debris may be present. However, screened street sweepings that has concentrations of pollutants below the residential direct exposure criteria established in Appendix A of the Remediation Standard Regulations, may be used on residential property, provided the fill is covered with at least two to four feet of natural soil to protect residents from sharp debris, or is used beneath a paved driveway or road and provided the municipality obtains the permission of the property owner. The department also recommends that when municipal sweepings are used as fill on a residential property, the municipality do an inspection to ensure that the sweepings are properly buried or covered with asphalt.

Fill areas must be stabilized using appropriate erosion and sediment control techniques as described in "Connecticut Guidelines for Soil Erosion and Sediment Control, as revised by the Department of Environmental Protection and the Connecticut Council on Soil and Water Conservation.

The practice of using street sweepings as fill should also be coordinated with the municipal inland wetland enforcement officer, the town sanitarian, and other appropriate officials (local health department, water department or water company) to determine approximate locations of potable water supply wells and minimize risks to surface water resources. Fill should be placed only with the consent and permits required under applicable regulatory programs but in general, be located as follows:

- a. more than 100 feet from any wetland or watercourse;
 - b. more than 100 feet from any private potable water supply well;
 - c. more than 250 feet from any public potable water supply well;
 - d. placed above the seasonal high ground water table; and
 - e. outside areas designated "No Salt Areas".
2. For Spill Cleanups - Street sweepings that have been determined to be non-hazardous may be used as absorptive material to contain or to absorb hazardous materials in emergency situations. Following such use, the road cleanup material must be immediately handled in accordance with all requirements for hazardous materials. The road cleanup material can not be permitted to wash into surface waters. If road cleanup materials are used in the form of embankments to contain larger spills, the road cleanup material must be stabilized to prevent surface water contamination, and be collected and managed appropriately as a contaminated material.
 3. Disposal Options - Street sweepings that are not used in the manner described above should be disposed of at a permitted solid waste disposal facility. However, if a municipality finds that the analytical testing of screened street sweepings routinely averages only slightly more than the direct exposure criteria, the municipality should consult with the Department about options for reducing the concentrations to acceptable levels.

BEST MANAGEMENT PRACTICES FOR CATCH BASIN CLEANINGS

When to clean catch basins: Municipalities are advised to develop and implement a program to evaluate and, if necessary, clean catch basins and other stormwater structures that accumulate sediment at least once a year, including a provision to identify and prioritize those structures that may require cleaning more than once a year. This task is a required condition of the "*pollution prevention/good housekeeping for municipal operations*" section in the development of a municipal stormwater management plan as outlined in the MS4 Stormwater Permit. Late fall is an ideal routine time to clean basins - after the leaves have fallen and before the first snowfall. Then, another cleaning in the spring is helpful to remove the buildup of sand, leaves, and other debris that accumulated during the winter months. Areas which may contribute to higher pollutant loadings or which discharge to surface waters should be cleaned more frequently.

Catch Basin Evaluation: Before removing sediment and debris from a catch basin or other drainage structure, public works staff or contractors hired by a municipality should evaluate whether there is any evidence that the sediment and debris was polluted by a spill of oil or other hazardous substance. The catch basin evaluation will aid in determining if waste should be handled as an extremely contaminated waste or hazardous waste and determine what to test for if hazardous waste is suspected. The three key words in field evaluation include *awareness, reporting, and segregation*.

Public works staff or contractors conducting a field evaluation or engaged in cleaning catch basins should be *aware* of sediment in catch basins with obvious contamination such as unusual color, staining, corrosion, unusual odors, fumes and oily sheen. If the public works staff or the contractor believes that a spill has occurred, it must be *reported* by immediately notifying the D.E.P. Oil and Chemical Spill Response Division at 424-3338. A DEP emergency response coordinator may assist in investigating the source of the spill and will provide instructions for addressing any emergency conditions. Once the emergency conditions have been addressed, any remaining material in the catch basin should be *segregated* until tested for all probable contaminants, then cleaned separately from non-contaminated catch basins.

Management of catch basin cleanings:

The use of an eductor truck (or vactor truck as it is commonly referred to) is typically used for cleaning catch basins. The contents of the vactor truck can be divided into decant liquids and solids which require specific disposal protocol and discharge permits.

Catch basin maintenance using a vactor truck can result in three types of discharges:

- 1) decant wastewater which is discharged from the vactor truck with a sediment trap and hose;
- 2) dump wastewater which is the discharge of both sludge and water from the vactor truck; and
- 3) rinse wastewater which is the discharge resulting from cleaning the inside of the truck after a dump discharge.

The discharge of decant wastewater and/or any other wastewater associated with catch basin maintenance to a watercourse, wetland, or returned to a catch basin or storm drain system is prohibited.

The "General Permit for the Miscellaneous Discharges of Sewer Compatible (MISC) Wastewater" would allow decanting catch basin liquids to a sanitary sewer. Towns without a sanitary sewer could use a regional sewage treatment facility. Approval from the local municipal Water Pollution Control Authority and compliance with all requirements of the general permit must be met.

The discharge of vector truck sediment, associated with municipal storm catch basin maintenance, including the liquid portion (and rinse water) must be to a location identified in the municipal Stormwater Management Plan. The location must be adequate to contain both sediment and liquid to prevent the discharge to a watercourse or wetland. The discharge to the location identified in the municipal stormwater management plan requires a discharge permit from the Department. Please contact the Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division for permit assistance and advice at 860 424-3018.

Solids and the Use of Drying Beds - Municipalities may construct drying beds for sludge contents of vector trucks. In general, a drying bed must be constructed on an impervious surface and include a filtering mechanism through which liquids pass to a catch basin which discharges to a sanitary sewer or into a holding tank. Drying beds that include discharge to a sanitary sewer may also be covered under the General Permit for the Miscellaneous Discharges of Sewer Compatible (MISC) Wastewater. Engineered plans for drying beds should be submitted with the permit application.

The dried solids can then be disposed of at a landfill or used as landfill cover. The Department recommends that if a municipality can separate the organic matter and debris from the sediment, and they wish to explore the potential for reuse of the sediment as fill, they should consult with the Department on an appropriate testing program and reuse options.

Contact Information

For questions concerning:

- Stormwater Best Management Practices:
Water Permitting and Enforcement Division, Bureau of Materials Management and Compliance Assurance (860) 424-3018
- Storage, disposal and reuse of street sweepings and catch basin cleanings:
Water Engineering and Enforcement Division, Bureau of Materials Management and Compliance Assurance (860) 424-3366
- Pollutant characteristics and testing:
Remediation Division, Bureau of Water Protection and Land Reuse (860) 424-3705
- Spill Reporting and Cleanups (24 hour hotline):
Emergency Response and Spill Prevention Division, Bureau of Materials Management and Compliance Assurance (860) 424-3338 or 1-866-337-7745
- Decanting vector truck liquids:
Water Permitting and Enforcement Division, Bureau of Materials Management and Compliance Assurance (860) 424-3018

Note: A list of companies that engage in aggregate recycling is located under the Business Recycling Program Fact Sheet entitled ["Construction and Demolition Aggregate Recycling Facilities"](#).