Cleaning of Stormwater Pipes & Culverts: Sediment Management

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

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MnDOT has prepared this guidance document to provide its internal procedures and requirements for work performed on MnDOT rights of way, including MnDOT-owned facilities. This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit (EIU) in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Cleaning of Stormwater Pipes & Culverts

Pipes and culverts are part of the storm water collection and distribution system. Accumulated sediment in the stormwater pipes and culverts can result in reduced hydraulic capacity in the culvert that can lead to flooding of the roadway, increased sedimentation of roadside ditches and deterioration of the roadbed and drainage structures.

Periodically, sediment accumulated in a stormwater pipe or culvert must be removed. Sediment within pipes and culverts can be considered similar to street sweeping sand. Therefore it is appropriate to handle pipe and culvert sediment in the same manner as street sweepings, with the exception described in item 7 below.

Following is the recommended practice for cleaning stormwater pipes and culverts:

- Clean the pipes and culverts frequently enough to ensure that they flow effectively and do not retain water. Having too much sediment in the pipe or culvert can damage the roadbed and other drainage structures.
- The removed sediment can be stored on either a paved or gravel surface at a MnDOT facility. Sediment may be combined with street sweeping stockpiles as long as no staining or odors are exhibited from the material, indicating the possibility of chemical contamination. Cover the stockpile to prevent erosion. Contact the Office of Environmental Stewardship for further assistance if questionable staining or odors are noticed.
- Trash and other debris should be removed from the sediment by screening with a

- ¾" screen. Material that does not pass through the screen should be collected and disposed of at an MPCA permitted sanitary (mixed municipal solid waste) landfill.
- Material passing through the ¾" screen may be used in road projects as sub-base or fill material, provided the material meets any geotechnical requirements.
- Small amounts of clean sediment can be disposed of on the backslope of the roadway near the removal site, provided local drainage and geometric conditions will not be adversely affected. Select an area that is less susceptible to erosion and away from the pipe inlet so sediment does not reenter the pipe. Spread the sediment thinly and evenly. Stabilize the area by broadcast seeding Mix # 250 @ 70 lbs/acre and spread straw mulch.
- Maintain the following minimum setback distances when using the material as clean fill or placing on a backslope:
    - At least 100 feet from permanent surface water/wetlands;
    - At least 100 feet from drainage structures;
    - At least 3 feet above groundwater (the water table); and
    - At least 10 feet above fractured bedrock.

Exception for reuse of stormwater pipe and culvert sediment:
If it is suspected that a large quantity of chemical may have entered a pipe or culvert, the drainage structure should be cleaned out and the contaminated material disposed of properly. The Offices of Environmental Stewardship and Freight and Commercial Vehicle Operations can assist in determining what type of chemical spills received by a pipe or culvert require special handling and how the material should be transported and disposed of properly.

Example: A truck overturns on the highway and spills a large volume of chemical near the inlet to a culvert. Contact the Offices of Environmental Stewardship and Freight and Commercial Vehicle Operations for assistance in determining the appropriate procedure to clean the culvert and transport the material for disposal. It is possible that the entire cleanup operation in this scenario would be completed by a private contractor at the expense of the responsible party.

Optional practice for disposing of stormwater pipe or culvert sediment:
The pipe or culvert sediment may be disposed of at an MPCA permitted sanitary (mixed municipal solid waste) landfill. The landfill may consider the material adequate for use as daily cover. The landfill may require laboratory analysis of the material prior to acceptance. Contact the EIU for assistance in analyzing the material.