



Targeted Constituents

● Significant Benefit ▸ Partial Benefit ○ Low or Unknown Benefit

● Sediment	▸ Heavy Metals	● Floatable Materials	● Oxygen Demanding Substances
○ Nutrients	○ Toxic Materials	▸ Oil & Grease	▸ Bacteria & Viruses
			○ Construction Wastes

Description

Proper maintenance and repair of existing drainage systems will greatly improve water quality and allows the storm drainage system to function at peak levels and reduce flooding. Properly designed catch basins and detention basins allow for easy removal of accumulated sediments at relatively minor cost.

Approach

Prior to starting construction activities, the contractor should clean and repair the existing stormwater drainage system at the project site. This will reduce flooding, wet soils and groundwater levels so that proper compaction and foundations can be constructed. A baseline of proper stormwater drainage can be established so that the contractor and construction inspector have a common point of reference. Contractor should document maintenance and repairs to the existing stormwater drainage system.

Property owners (residential, commercial, industrial and institutional) should perform regular maintenance and repair on stormwater drainage systems on the property, unless such maintenance has been specifically assigned to another party such as the City of Knoxville. The property owner should maintain a complete log of inspections and maintenance for stormwater drainage systems.

Storm Drains

Maintain catch basins and stormwater inlets on regular basis to remove sediments and pollutants, prevent clogging of downstream conveyances, and to restore sediment-trapping capacity. A catch basin differs from a stormwater inlet by having a sediment sump, typically 4 to 6 inches deep, in bottom to catch and retain sediments.

Maintenance of catch basins and inlets is needed to ensure proper functioning; clogged catch basins are not only useless but may act as a source of sediments and pollutants. Any sediment and pollutants should be removed from the storm drainage system and disposed of properly. Do not flush the pipe system without having means to remove any sediment or pollutants that are deposited into the storm drainage system.

- Catch basins should be inspected weekly and cleaned if necessary to reduce the possibility of sediment and other pollutants from leaving the construction site. Remove accumulated paper, trash, debris and sediment; dispose properly. Clean accumulated sediment and silt from catch basins and other inlets when they have reached 1/3 of the capture volume.

- To prevent sediment from entering catch basins, be sure to follow the guidelines set out in ES-24, Temporary Inlet Protection. Maintain a clean work site free of trash and litter. Do not allow dumping into catch basins and stormwater inlets.

Detention Basins

Dry detention and wet detention basins shall be routinely cleaned and dredged in order to remove sediments and restore capacity. Proper maintenance of detention basins and infiltration device systems is a source control procedure necessary to ensure effective stormwater pollutant removal efficiency. Provide for periodic trash debris removal. Clean sediment whenever it reaches approximately 1/3 of sediment storage capacity.

More frequent sediment removal is recommended in areas where roadway drainage provides a significant runoff component. High accumulation rates of heavy metal contaminants (lead, zinc, and copper) have been identified in BMP structures adjacent to high traffic areas. Sediments with high rates of heavy metals can potentially be considered as hazardous waste, particularly in higher quantities.

- Clean detention basin control structures to remove accumulated sediments and debris on a weekly basis or as needed to prevent clogging of control structures throughout the construction project to reduce the possibility of sediment and other pollutants from leaving the construction site.
- Do not allow dumping into the storm drainage system or detention basins. Do not perform activities with potential for spills or leaks adjacent to detention basins.
- Vegetation growth in detention basins should not be allowed to exceed 12 inches in height. Mow the slopes periodically and check for clogging, erosion and tree growth on the embankment.

Requirements

- Vacuum trucks and dredging operations can produce slurried waste that exceeds landfill acceptance criteria. Guidance may be obtained from AM-12, Dewatering Operations.
- Maintenance crews may require access vehicles, vacuum trucks, dump trucks, bulldozers, and dredging/excavation equipment. Manual use equipment (such as rakes, shovels, sickles, and machetes) may suffice for maintenance of dry detention basins.
- Employee training and education should include these elements:
 - Proper disposal methods of sediments and other pollution
 - Recordkeeping
 - Channel maintenance and use of heavy equipment
 - Identification and handling of hazardous materials or wastes
- Grading, construction, major repairs or vegetation clearing within streams or channels may require a permit. Contact Tennessee Department of Environment and Conservation (TDEC) for further information or to schedule a site visit. If storm channels or detention basins are recognized as wetlands, then it will be subject to further regulation by TDEC. Wetlands are defined by soil types, moisture conditions, or aquatic plants and wildlife.

References 4, 7, 9, 32, 33, 34, 35, 41, 45, 80, 144 (see BMP Manual Chapter 10 for list)