



First Flush Requirement

Description

The 1st Flush BMP structure should be designed to treat the first 3/4" of stormwater runoff of rainfall events. For rainfall events that generate higher flow than 3/4" of stormwater runoff, the first 3/4" of stormwater runoff should be treated by the 1st Flush BMP(s) and the rest of the flow may by-pass the treatment structure during high flow rainfall events. Efforts should be undertaken by the developer/design engineer to minimize runoff volume by maximizing infiltration and evaporation.

The water quality control includes 1st flush structural BMPs (natural or proprietary structures). The purpose of the 1st flush BMP is to control pollutants within the first three quarters of an inch (3/4") of stormwater runoff. One or more units can be used to treat pollutants of concern.

For proprietary BMPs (see Section 10), submittal of engineered drawings should be supplemented by testing and evaluation results for performance conducted by a third party for the said unit.

For other BMPs (see Sections 7, 8 & 9) such as grass swales, bioretention ponds, wetlands, or other natural systems, performance evaluation based on estimation of pollutant removal efficiencies should be based on well established empirical relationships. For more information go to <http://www.bmpdatabase.org/>.

Requirements

Requirement for New Development or Redevelopment

Post-Construction or permanent stormwater quality control structures (see Sections 7, 8, 9 & 10) are required for residential development with ten (10) lots or more, and any other development or redevelopment in the following jurisdictions:

- City of Chattanooga
- Signal Mountain
- Hamilton County Program: **one acre or more of initial land disturbance**

Including the following jurisdictions:

- East Ridge
- Collegedale
- Lakesite
- Lookout Mountain

- Red Bank
- Ridgeside
- Soddy-Daisy
- Urbanized Portion of Unincorporated Hamilton County

To reduce the 1st flush pollutant load in stormwater runoff, facilities must be designed to capture the design storm in a detention or retention pond or facility and achieve a ninety-six (96) hour drawdown time of the first three-quarters ($\frac{3}{4}$) of an inch of the runoff. A grit and floatables skimmer must be installed upstream of any detention or retention pond or facility.

Performance

BMPs performance evaluation based on stormwater post-construction runoff from the developed site should target:

- 1. A yearly average removal efficiency of 75% or more for Suspended Sediment Concentration (SSE) analyzed using ASTM method no. D3977-97 or 85% or more for total suspended solids (TSS) analyzed using EPA method no. 160.2.**
- 2. A yearly average removal efficiency of 90% or more for Oil & Grease analyzed using EPA method no.1664 A.**

Removal efficiency of parameters such as Chemical Oxygen Demand, nutrients, metals, pathogens, and others may be required for specific sites based on proposed site activity, future land use, and receiving stream water quality criteria and Total Maximum Daily Loading (TMDL). The local jurisdiction may set more stringent removal efficiencies or other water quality requirement(s) based on these factors.

Maintenance

For new development or redevelopment BMPs and existing BMPs, property owners of the BMPs are responsible for conducting regular inspection and scheduling proper maintenance. The owners should conduct inspection at least once every three months and should schedule maintenance for the unit within 30 days of discovery of needed maintenance. The owner of the BMPs are responsible for maintaining records for at least 3 years of BMP self-inspection and maintenance log.

References

USEPA (U.S. Environmental Protection Agency). 1992. Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

USEPA (U.S. Environmental Protection Agency). 1993. Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters. EPA 840-B-92-002. U.S. Environmental Protection Agency, Office of Water, Washington, DC.