



## Chapter 2 STORMWATER MANAGEMENT POLICY

### 2.1 Objectives

The objectives of these regulations are:

1. To protect human life and health.
2. To minimize expenditure of public money for costly flood control projects.
3. To minimize the need for rescue and relief efforts associated with flooding.
4. To help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to maximize beneficial use without increasing flood hazard potential or diminishing the quality of the natural stormwater resources.
5. To ensure that potential homebuyers are notified that property is in a flood area and generally increase the public awareness of flooding potential.
6. To minimize prolonged business interruptions.
7. To minimize damage to public facilities and utilities such as water and gas mains; electric, telephone, and sewer lines; and streets and bridges located in floodplains.
8. To ensure a functional stormwater quantity and quality management system that will not result in excessive maintenance costs.
9. To encourage the use of natural and aesthetically pleasing design that maximizes preservation of natural areas.
10. To guide the construction of stormwater management facilities by developing comprehensive master plans to address stormwater quantity and quality.
11. To protect or enhance stormwater quality to a level of “designated use” and minimize the impacts from new development or areas of significant redevelopment.
12. To encourage preservation of floodplains, floodways, and open spaces to protect and benefit the community’s quality of life and natural resources.



## 2.2 Policy Statements

To implement the objectives presented above, the following general policy statements shall apply:

1. The Metro Stormwater Management Program is intended to establish guidelines, criteria, and procedures for stormwater management activities within Metropolitan Government of Nashville and Davidson County (Metro). Metro contains seven incorporated satellite cities: Belle Meade, Berry Hill, Forest Hills, Goodlettsville, Oak Hill, and Ridgetop. These satellite cities are not bound by the requirements of the Metro Stormwater Management Program. Key elements of the program include the Stormwater Management Manual, Ordinances No. 78-840 and 78-843, and major watershed master plans.
2. Individual projects shall be evaluated for consistency with the stormwater management master plans, if available, for the major watershed or watersheds within which the project site is located. Figure 2-1 presents the watersheds for which stormwater quantity and/or quality master plans have been developed. The individual project evaluation will determine if stormwater quantity and quality management practices can adequately serve the property and limit impacts to downstream public and private properties. The presence of a regional facility or regional facilities will be considered in determining the extent to which quantity and/or quality controls will be necessary.
3. In the absence of a stormwater quantity and/or quality master plan, a system of uniform requirements shall be applied to each individual project site. In general, these uniform requirements will be based on the criterion that post-development stormwater peak runoff and water quality must not differ significantly from pre-development conditions. Additional requirements will be based on volume control for sites tributary to sinkholes or “drainage” wells.
4. Metro will develop or update master plans for all watersheds. The Metropolitan Department of Water and Sewerage Services (MWS) shall coordinate with Metro Planning on the development of Sub-Area Plans and develop a protocol to incorporate stormwater management needs into the planning process.
5. Metro will develop full floodplain build-out conditions for all watersheds where continued development is anticipated to significantly raise the floodplain elevation and use them to set appropriate standards.
6. Metro will identify streams or watersheds where new flood elevation studies were not performed by the Federal Emergency Management Agency (FEMA) or the U.S. Army Corps of Engineers (USACE) and prioritize them for study updates.
7. No construction, whether by private or public action, shall be performed in a manner that will have a negative impact on stormwater quantity or quality in its vicinity or in other areas

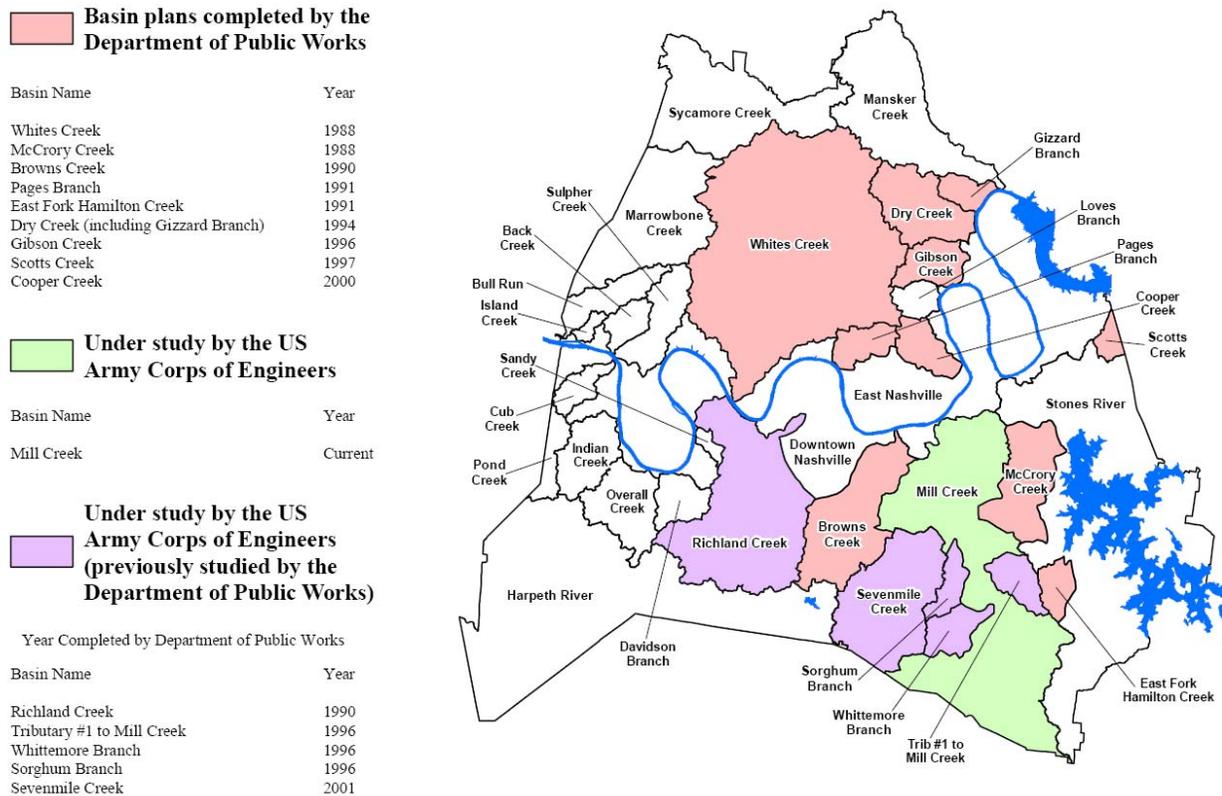


- whether by flow restrictions, increased runoff, or by diminished channel or overbank storage capacity.
8. New construction may not aggravate upstream or downstream flooding. Existing downstream or upstream problems may be required to be corrected in conjunction with new development.
  9. Unwarranted acceleration of erosion due to various land development activities must be controlled.
  10. Metro's Grading Permit requirements must meet but may exceed the Tennessee Department of Environment and Conservation's (TDEC's) Construction General Permit requirements to remain in compliance with Metro's National Pollutant Discharge Elimination System (NPDES) permit.
  11. New construction shall not be permitted until temporary or permanent erosion prevention and sedimentation control management practices have been placed or constructed, and are operational to Metro's satisfaction. Metro reserves the right to stop work on properties that do not have adequate erosion prevention and sedimentation control measures.
  12. New development will be required to minimize the impact to stormwater quality by applying structural and/or nonstructural management practices selected to address site-specific conditions. Metro strongly encourages the use of non-structural stormwater control measures and better site design practices that decrease reliance on structural stormwater control measures.
  13. New development and significant redevelopment will be required to maintain water quality buffers along water features that are designated as community waters.
  14. Metro reserves the right to require more stringent erosion prevention and sedimentation control practices on properties within watersheds identified by TDEC as Exceptional Tennessee Waters or impaired.
  15. Metro reserves the right to require maintenance or modification of stormwater management practices that are not operating properly, as determined by MWS.
  16. Metro encourages regional stormwater quantity control practices that serve multiple areas. However, instream regional quantity controls are not permitted.
  17. Land disturbance activities will not be permitted within the floodway or a buffer. Construction in floodplains should be done in a way that protects or enhances stormwater quality and promotes land and tree conservation, greenways, floodplain preservation, and hazard mitigation. Furthermore, development within a floodplain shall be consistent with the requirements of Ordinances No. 78-840 and 78-843 (Appendices D and E).



18. Metro reserves the right to require an “erosion prevention and sediment control professional” or other similar person designated by the TDEC or Metro to be on site for inspection and enforcement of proper construction and maintenance of erosion prevention and sediment control management practices at construction sites.

**Figure 2-1  
 Completed Watershed Master Plans**



### 2.3 Stormwater Management Systems

For the purposes of these regulations, stormwater management systems are considered to be comprised of two parts, the major and minor systems. A brief description of these two parts is presented below.



### 2.3.1 *Minor Systems*

The minor system of a stormwater management network is sometimes termed the “initial system” and may consist of a variety of stormwater management appurtenances ranging from inlets, manholes, street gutters, roadside ditches, and swales to small channels or pipes. This system collects the initial stormwater runoff and conveys it to the major system.

### 2.3.2 *Major Systems*

The major system primarily consists of natural waterways, “Waters of the State”, community waters, large storm sewers, major culverts, bridges and large water impoundments, but it can also include less obvious flow paths such as overland relief swales and infrequent floodplain storage. The major system includes not only the trunk line conveyance that receives the water from the minor system, but also the natural flow path that functions in case of overflow from or failure of the minor system. Properly designed overflow relief will not flood or damage homes, businesses, or other property. The major system is needed for small, medium, and large flood events. Eventually, it will fill with water whether or not it has been planned and designed, and whether or not development is situated wisely with respect to it.

## 2.4 **Stormwater Quantity and Quality Detention**

Increased urbanization within Metro has caused radical changes to the topography, ground cover, and minor stormwater management systems within each drainage basin. These changes have adverse effects on the environment, primarily through the subsequent increase in stormwater runoff quantity and nonpoint source pollution, which has a negative impact on stormwater quality. In some areas, the combination of increased runoff and the location of property near a stream cause frequent flooding (often several times per year). In these areas, upstream control of frequent as well as large flows may not provide adequate flood protection for residents and property downstream.

To minimize adverse stormwater quantity and quality impacts, all new developments must be evaluated for adverse impacts on downstream properties. This requirement is mandatory for all developments that are not served by an adequately sized regional stormwater management facility, subject to review by MWS. Because detention in downstream areas of a large watershed can cause increased peak flows in downstream channels, MWS reserves the right to alter the detention criteria and to prohibit it where it would cause adverse impacts. This decision shall be based on sound engineering judgment along with supporting data and studies. In all cases where detention facilities are required, the location and design must comply with any stormwater master plans that may have been adopted.

This policy is primarily concerned with maintaining pre-development conditions, for stormwater quality, flood storage, flow, and velocity; it should also be applied under certain conditions for the purpose of maintaining adequate capacity of an existing outfall or combining public and private efforts to correct existing deficiencies for flooding, erosion, and stormwater quality. In some cases



controlling the total volume of runoff to predevelopment levels may also be required, such as in areas tributary to sinkholes.

## **2.5 Other Stormwater Quality Management Practices**

TDEC classifies surface waters into seven designated use categories based upon water quality standards and goals for each water body. The use classifications are: fish and aquatic life protection, recreation, drinking water supply, industrial water supply, livestock watering and wildlife, irrigation, and navigation. All of the lakes and streams in Metro are classified, at a minimum, for fish and aquatic life protection and recreation. Increased pollutant concentrations and loads affect the ability of Waters of the State to meet designated use goals. To minimize these stormwater quality impacts, onsite stormwater quality management practices are mandatory for all developments subject to review by MWS and on existing sites deemed by MWS as contributing significant pollutant loadings to a receiving stream or Municipal Separate Storm Sewer System (MS4).

## **2.6 Floodplains**

Development of property located within the floodplain must comply with guidelines established in Ordinances No. 78-840 and 78-843 and provisions specified in Chapter 5 of this volume. Wise use of the floodplain is encouraged to minimize adverse effects on flood heights, flow velocities, and stormwater quality, as well as maximize land conservation, greenways, floodplain preservation, and hazard mitigation. Buffers are required in and proximate to approved floodways and community waters. See Section 6.9 of this volume for additional details.

Areas of the floodplain available for development must be protected through the use of compacted fill, elevated structures, dikes, or floodwalls (See Section 3.4.3 for acceptable fill characteristics). Any use of these measures must be in accordance with the requirements in Chapter 5 of this volume. Other flood proofing measures are subject to the approval of MWS.

## **2.7 Erosion and Sediment Control**

All development shall be conducted in a manner that minimizes soil erosion and resulting sedimentation. Construction may not, under any circumstance, allow sediments to leave a construction site in a way that would be a violation of the site's Grading Permit or of Metro's NPDES MS4 permit. Site-specific variables such as topography, soil erodibility, stormwater management features, and vegetation shall be considered when developing an erosion control plan. The exposed area of any disturbed land shall be limited to the smallest practical area for the shortest possible period of time. New development and areas of significant redevelopment shall be required to fulfill the provisions in Section 6.10 of this volume. This includes the use of sediment detention ponds and traps at the fringes of cleared areas along with silt fences and/or berms, as appropriate. The detention shall be sized to control runoff and silt for the duration of the project.