

## CHAPTER 7

### ***STORMWATER MANAGEMENT***

#### ***SECTION***

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#### **16-701. General provisions**

1. Purpose. It is the purpose of this chapter to:
  - a. Protect, maintain, and enhance the environment of the City and the public health, safety and the general welfare of the citizens of the City, by controlling discharges of pollutants to the City's stormwater system and to maintain and improve the quality of the receiving waters into which the stormwater outfalls flow, including, without limitation, lakes, rivers, streams, ponds, wetlands, and groundwater of the City.
  - b. Enable the City to comply with the National Pollution Discharge Elimination System permit (NPDES) and applicable regulations, 40 CFR 122.26 for stormwater discharges.
  - c. Allow the City to exercise the powers granted in Tennessee Code Annotated § 68-221-1105, which provides that, among other powers cities have with respect to stormwater facilities, is the power by ordinance or resolution to:
    - i. Exercise general regulation over the planning, location, construction, and operation and maintenance of stormwater facilities in the City, whether or not owned and operated by the City.
    - ii. Adopt any rules and regulations deemed necessary to accomplish the purposes of this statute, including the adoption of a system of fees for services and permits.

- iii. Establish standards to regulate the quantity of stormwater discharged and to regulate stormwater contaminants as may be necessary to protect water quality.
  - iv. Review and approve plans and plats for stormwater management in proposed subdivisions, commercial, and industrial developments.
  - v. Issue permits for stormwater discharges, or for the construction, alteration, extension, or repair of stormwater facilities.
  - vi. Suspend or revoke permits when it is determined that the permittee has violated any applicable ordinance, resolution, or condition of the permit.
  - vii. Regulate and prohibit discharges into stormwater facilities of sanitary, industrial, or commercial sewage or waters that have otherwise been contaminated.
  - viii. Expend funds to remediate or mitigate the detrimental effects of contaminated land or other sources of stormwater contamination, whether public or private.
2. Administering entity. The City's Planning & Zoning Department shall administer the provisions of this chapter.
  3. Stormwater management ordinance. The intended purpose of this ordinance is to safeguard property and public welfare by regulating stormwater drainage and requiring temporary and permanent provisions for its control. It should be used as a planning and engineering implement to facilitate the necessary control of stormwater.
  4. Jurisdiction. The Stormwater Management Ordinance (Title 16) shall govern all properties within the corporate limits of the City of McMinnville, Tennessee.

**16-702. Definitions**

1. For the purpose of this chapter, the following definitions shall apply:
  - a. Words used in the singular shall include the plural, and the plural shall include the singular; words used in the present tense shall include the future tense. The word "shall" is mandatory and not discretionary. The word "may" is permissive. Words not defined in this section shall be construed to have the meaning given by common and ordinary use as defined in the latest edition of Webster's Dictionary.
2. "100-Year Flood Event." See Base Flood.
3. "Active Construction Sites" means any site that has a Permit for Land Disturbance or other activities (even if actual construction is not proceeding) and any Site where construction is occurring regardless of permits required.
4. "Administrative or Civil Penalties" means under the authority provided in Tennessee Code Annotated § 68-221-1106, the City declares that any person

or entity violating the provisions of this chapter may be assessed a civil penalty by the City of not less than fifty dollars (\$50.00) and not more than five thousand dollars (\$5,000.00) per day for each day of violation. Each day of violation shall constitute a separate violation.

5. "Appeal" means a request for a review of the City's interpretation of any provision of these regulations.
6. "As built plans" means drawings depicting conditions as they were actually constructed.
7. "Base Flood" means the Flood having a one percent (1%) chance of being equaled or exceeded in any given year. While this statistical event may occur more frequently, it may also be known as the "100-Year Flood Event."
8. "Best Management Practices" ("BMP's") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the state. BMP's also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
9. "Borrow Pit" is an excavation from which erodible material (typically soil) is removed to be fill for another site. There is no processing or separation of erodible material conducted at the site. Given the nature of activity and pollutants present at such excavation, a borrow pit is considered a construction activity for the purpose of this permit.
10. "Buffer Management Plan" means a written integrated plan outlining the utilitarian, ecological and aesthetic objectives for a specific landscape, and the landscape management practices and products that will be employed.
11. "Buffer Zone" means a setback from the top of water body's bank of undisturbed vegetation, including trees, shrubs and herbaceous vegetation; enhanced or restored vegetation; or the re-establishment of native vegetation bordering streams, ponds, wetlands, springs, reservoirs or lakes, which exists or is established to protect those water bodies.
12. "Building" means any structure built for support, shelter, or enclosure for any occupancy or storage.
13. "Channel" means a natural or artificial watercourse with a definite bed and banks that conducts flowing water continuously or periodically.
14. "City" means the City of McMinnville, Tennessee.
15. "Common plan of development or sale" is broadly defined as any announcement or documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating construction activities may occur on a specific plot. A common plan of development or sale identifies a situation in which multiple areas of disturbance are occurring on contiguous

- areas. This applies because the activities may take place at different times, on different schedules, by different operators.
16. “Contaminant” means any physical, chemical, biological, or radiological substance or matter in water.
  17. “Cut” means a portion of land surface or area from which earth has been removed or will be removed by Excavation; the depth below original ground surface to the excavated surface.
  18. “Design storm event” means a hypothetical storm event, of a given frequency interval and duration, used in the analysis and design of a stormwater facility. The estimated design rainfall amounts, for any return period interval (i.e., 2-yr, 5-yr, 25-yr, etc.) in terms of either 24-hour depths or intensities for any duration, can be found by accessing the following NOAA National Weather Service Atlas 14 data for Tennessee: [http://hdsc.nws.noaa.gov/hdsc/pfds/pfds\\_map\\_cont.html?bkmrk=tn](http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=tn). Other data sources may be acceptable with prior written approval by TDEC Water Pollution Control.
  19. “Detention” means the temporary delay of stormwater runoff prior to discharge into receiving waters.
  20. “Developer” means any individual, firm, corporation, association, partnership, trust, or authorized agents involved in commencing proceedings to effect development of land for him/her or others.
  21. “Development” means any man-made change to improved or unimproved real estate, including by not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavating, drilling operations, or permanent storage of materials (as defined as materials of like nature stored in whole or in part for more than six months).
  22. “Director of Planning & Zoning” refers to the head of the City of McMinnville’s Planning & Zoning Department who has the authority to delegate to designated City staff or staff of the City’s designated engineering consultant.
  23. “Discharge” means dispose, deposit, spill, pour, inject, seep, dump, leak or place by any means, or that which is disposed, deposited, spilled, poured, injected, seeped, dumped, leaked, or placed by any means including any direct or indirect entry of any solid or liquid matter into the municipal separate storm sewer system.
  24. “Easement” means an acquired privilege or right of use or enjoyment that a person, party, firm, corporation, city or other legal entity has in the land of another.
  25. “Engineer” or “Professional Engineer” means an Engineer duly registered, licensed or otherwise authorized by the State of Tennessee to practice in the field of civil engineering.

26. "Erosion" means the removal of soil particles by the action of water, wind, ice or other geological agents, whether naturally occurring or acting in conjunction with or promoted by human activities or effects.
27. "Erosion prevention and sediment control (EPSC) plan" means a written plan (including drawings or other graphic representations) that is designed to minimize the erosion and sediment runoff at a site during construction activities.
28. "Excavation". See Cut.
29. "Existing Construction" means any structure for which the "start of construction" commenced before the effective date of these regulations.
30. "Existing Grade" means the slope or elevation of existing ground surface prior to cutting or filling.
31. "Fill" means a portion of land surface or area to which soil, rock, or other materials have been or will be added; height above original ground surface after the material has been or will be added.
32. "Finished Grade" means the final slope or elevation of the ground surface, after cutting or filling.
33. "Flood or Flooding" means water from a river, stream, watercourse, lake or other body of standing water that temporarily overflows and inundates adjacent lands and which may affect other lands and activities through increased surface water levels and/or increased groundwater level.
34. "Floodplain" means the relatively flat or lowland area adjoining a river, stream, watercourse, lake or other body of standing water, which has been or may be covered temporarily by floodwater. For purposes of this chapter, the floodplain is defined as the 100-year floodplain having a one percent (1%) chance of being equaled or exceeded in any given year.
35. "Floodway" means that portion of the stream channel and adjacent floodplain required for the passage or conveyance of a 100-year flood discharge. The floodway boundaries are placed to limit encroachment in the floodplain so that a discharge can be conveyed through the floodplain without materially increasing (less than one (1) foot) the water surface elevation at any point and without producing hazardous velocities or conditions. This is the area of significant depths and velocities and due consideration should be given to effects of fill, loss of cross sectional flow area, and resulting increased water surface elevations.
36. "Floor" means the top surface of an enclosed area in a building (including basement), i.e., top of slab in concrete slab construction or top of wood flooring in wood frame construction. The term does not include the floor of a garage used solely for parking vehicles.
37. "Grading" means any operation or occurrence by which the existing site elevations are changed; or where any ground cover, natural, or man-made, is relocated on any site, thereby creating an unprotected area. This includes

- stripping, cutting, filling, stockpiling or any combination thereof, and shall apply to the land in its cut or filled condition. Grading activities that disturb one acre or more shall only be performed with a Land Disturbance Permit.
38. “Green Infrastructure” means the interconnected network of natural areas and other open spaces that conserves natural ecosystem values and functions, sustains clean air and water, and provides environmental and community benefits.
  39. “Green Infrastructure Practices” means management measures that are designed, built and maintained to infiltrate, evapotranspire, harvest and/or use rainwater through the use of natural hydrologic features.
  40. “Greenways” means linear undeveloped areas linking various types of development by such facilities as bicycle paths, footpaths, and bridle paths. Greenways are usually kept in their natural state except for the pathway and areas immediately adjacent to the pathway.
  41. “Hotspot” means an area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater. The following land uses and activities are deemed stormwater hot spots, but that term is not limited to only these land uses:
    - a. Vehicle salvage yards and recycling facilities.
    - b. Vehicle service and maintenance facilities.
    - c. Vehicle and equipment cleaning facilities.
    - d. Fleet storage areas (bus, truck, etc.).
    - e. Industrial sites (included on Standard Industrial Classification code list).
    - f. Marinas (service and maintenance).
    - g. Public works storage areas.
    - h. Facilities that generate or store hazardous waste materials.
    - i. Commercial container nursery.
    - j. Restaurants and other food service facilities.
    - k. Other land uses and activities as designated by an appropriate review authority.
  42. “Illicit Connections” means illegal and/or unauthorized connections to the municipal separate stormwater system whether or not such connections result in discharges into that system.
  43. “Illicit discharge” means any discharge to the municipal separate storm sewer system that is not composed entirely of stormwater and not specifically exempted under §16-708(2).
  44. “Impervious Surface” means a term applied to any ground or structural surface that water cannot penetrate or through which water penetrates with great difficulty.

45. “Improved sinkhole” means a natural surface depression that has been altered in order to direct fluids into the hole opening. Improved sinkhole is a type of injection well regulated under TDEC’s Underground Injection Control (UIC) program. Underground injection constitutes an intentional disposal of waste waters in natural depressions, open fractures, and crevices (such as those commonly associated with weathering of limestone).
46. “Inspector” means a person that has successfully completed (has a valid certification from) the “Fundamentals of Erosion Prevention and Sediment Control Level I” course or equivalent course. An inspector performs and documents the required inspections, paying particular attention to time-sensitive permit requirements such as stabilization and maintenance activities. An inspector may also have the following responsibilities:
  - a. Oversee the requirements of other construction-related permits, such as Aquatic Resources Alteration Permit (ARAP) or Corps of Engineers permit for construction activities in or around waters of the state.
  - b. Update field SWPPP’s.
  - c. Conduct pre-construction inspection to verify that undisturbed areas have been properly marked and initial measures have been installed.
  - d. Inform the permit holder of activities that may be necessary to gain or remain in compliance with the Construction General Permit (CGP) and other environmental permits.
47. “Invasive Exotic Plants” means plants that have been introduced from other regions and compete so successfully against native plants that they can crowd out their competitors, thus providing a monoculture that discourages the growth of native plant species.
48. “Land Disturbance Permit” means a permit issued by the Director of Planning & Zoning that allows for Land Disturbing Activities with the City of McMinnville in accordance with this chapter. In some instances, additional local, state or federal permitting may also be required.
49. “Land disturbing activity” means any activity on property that results in a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land-disturbing activities include, but are not limited to, development, re-development, demolition, construction, reconstruction, clearing, grading, filling, and excavation. Land disturbing activities that disturb one acre or more shall only be performed with a Land Disturbance Permit.
50. “Landscape Architect” means a Landscape Architect duly registered, licensed or otherwise authorized by the State of Tennessee to practice in the field of Landscape Architecture.
51. “Maintenance” means any activity that is necessary to keep a stormwater facility in good working order so as to function as designed. Maintenance shall include complete reconstruction of a stormwater facility if

reconstruction is needed in order to restore the facility to its original operational design parameters. Maintenance shall also include the correction of any problem on the site property that may directly impair the functions of the stormwater facility.

52. "Maintenance Agreement" or "Long Term Maintenance Agreement" means a document recorded in the land records that acts as a property deed restriction, and which provides for long-term maintenance of stormwater management practices.
53. "Municipal separate storm sewer system (MS4)" means the conveyances owned or operated by the City for the collection and transportation of stormwater, including the roads and streets and their drainage systems, catch basins, curbs, gutters, ditches, man-made channels, and storm drains, and where the context indicates, it means the municipality that owns the separate storm sewer system.
54. "National Pollutant Discharge Elimination System permit" or a "NPDES permit" means a permit issued pursuant to 33 U.S.C. 1342.
55. "Native Vegetation" means the normal vegetation that grows or would reestablish normally after a disturbance. This does not include invasive exotic plants.
56. "New Construction" means structures for which the "start of construction" commenced on or after the effective date of these regulations. The term also includes any subsequent improvements to such structures.
57. "Off-site facility" means a structural BMP located outside the subject property boundary described in the permit application for land development activity.
58. "On-site facility" means a structural BMP located within the subject property boundary described in the permit application for land development activity.
59. "Passive Recreation" means recreational activities that require limited physical exertion on behalf of the participant. Examples of passive recreation activities include bird watching, walking or photography.
60. "Peak flow" means the maximum instantaneous rate of flow of water at a particular point resulting from a storm event.
61. "Person" means any and all persons, natural or artificial, including any individual, firm or association and any municipal or private corporation organized or existing under the laws of this or any other state or country.
62. "Permittee" means any person, firm, or any other legal entity to which a Land Disturbance, Building or other related permit is issued in accordance with City of McMinnville regulations.
63. "Pollutant" means anything which causes or contributes to pollution. Pollutants may include, but are not limited to, paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid

wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded and abandoned objects, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes, wastes and residues that result from constructing a building or structure; sediment; and noxious or offensive matter of any kind.

64. "PUD" means a Planned Unit Development.
65. "Qualified Hydrologic Professional" or "QHP" means a person who is duly registered, licensed or otherwise authorized by the State of Tennessee to perform hydrologic determinations and is certified as a Tennessee Qualified Hydrologic Professional.
66. "Redevelopment" means the alteration of developed land that disturbs and increases the site or building impervious footprint, or offers a new opportunity for stormwater controls. Demolition and reconstruction is considered development and not redevelopment. Note: Redevelopment is not intended to include such activities as exterior remodeling, which would not be expected to cause adverse stormwater quality impacts.
67. "Retention" means the prevention of storm runoff from direct discharge into receiving waters. Examples include systems which discharge through percolation, exfiltration, filtered bleed-down and evaporation processes.
68. "Riparian Buffer". See Buffer Zone.
69. "Riparian Zone" means areas adjacent to water resources with a differing density, diversity and productivity of plant and animal species relative to nearby uplands. This area provides a transition from an aquatic ecosystem to a terrestrial ecosystem.
70. "Runoff" means that portion of the precipitation on a drainage area that is discharged from the area into the municipal separate storm sewer system.
71. "Sediment" means solid material, both inorganic and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface either above or below sea level.
72. "Sedimentation" means soil particles suspended in stormwater that can settle in streambeds.
73. "Site" means all contiguous land and bodies of water in one ownership, graded, proposed for grading or development as a unit, although not necessarily at one time.
74. "Slope" means degree of deviation of a surface from the horizontal, usually expressed in percent or ratio.
75. "Soil" means all unconsolidated mineral and organic material of any origin that overlies bedrock and that can be readily excavated.

76. "Soils Report" means a study of soils on a subject property with the primary purpose of characterizing and describing the soils. The soils report shall be prepared by a qualified soils engineer, who shall be directly involved in the soil characterization either by performing the investigation or by directly supervising employees conducting the investigation.
77. "Stabilization" means providing adequate measures, vegetative and/or structural, that will prevent erosion from occurring.
78. "Stop Work Order" means an order directing the developer and/or permittee responsible for the development to cease and desist all or any portion of the work which violates the provisions of this chapter.
79. "Stormwater" means stormwater runoff, snow melt runoff, surface runoff, street wash waters related to street cleaning or maintenance, infiltration and drainage.
80. "Stormwater management" means the programs to maintain quality and quantity of stormwater runoff to pre-development levels.
81. "Stormwater management facilities" means the drainage structures, conduits, ponds, ditches, combined sewers, sewers, and all device appurtenances by means of which stormwater is collected, transported, pumped, treated or disposed of.
82. "Stormwater management plan" means the set of drawings and other documents that comprise all the information and specifications for the programs, drainage systems, structures, BMP's, concepts and techniques intended to maintain or restore quality and quantity of stormwater runoff to pre-development levels.
83. "Stormwater Pollution Prevention Plan (SWPPP)" means a written plan that includes site map(s), an identification of construction/contractor activities that could cause pollutants in the stormwater, and a description of measures or practices to control these pollutants. It must be prepared and approved before construction begins. In order to effectively reduce erosion and sedimentation impacts, Best Management Practices (BMP's) must be designed, installed, and maintained during land disturbing activities. The SWPPP should be prepared in accordance with the current Tennessee Erosion and Sediment Control Handbook. The handbook is intended for use during the design and construction of projects that require erosion and sediment controls to protect waters of the state. It also aids in the development of SWPPPs and other reports, plans, or specifications required when participating in Tennessee's water quality regulations. All SWPPP's shall be prepared and updated in accordance with Section 3 of the General NPDES Permit for Discharges of Stormwater Associated with Construction Activities.
84. "Stormwater runoff" means flow on the surface of the ground, resulting from precipitation.

85. "Stream" means surface water that is not a wet weather conveyance as determined by a Qualified Hydrological Professional and approved by the Director of Planning & Zoning.
86. "Structural BMP's" means facilities that are constructed to provide control of stormwater runoff.
87. "Structure" means anything constructed or erected, the use of which requires a permanent location on or in the ground. Such construction includes but is not limited to objects such as buildings, towers, smokestacks, carports and walls.
88. "Surface water" includes waters upon the surface of the earth in bounds created naturally or artificially including, but not limited to, streams, other water courses, lakes and reservoirs.
89. "Top of Bank" means the ordinary high water level and break in slope for a water resource.
90. "Unavailable Parameters Waters" means any stream segment of Surface Waters that has been identified by the Tennessee Department of Environment and Conservation (TDEC) as failing to support classified uses. This term as previously referred to as impaired waters. The TDEC periodically compiles a list of such Waters known as the "303(d) List".
91. "View corridors" means areas associated with formal trail systems closer than the required buffer width approved by the Director of Planning & Zoning with an approved Buffer Management Plan.
92. "Waste site" means an area where waste material from a construction site is deposited. When the material is erodible, such as soil, the site must be treated as a construction site.
93. "Water Quality Buffer". See "Buffer Zone".
94. "Water resources" means streams, seeps, springs, wetlands, sinkholes, lakes or channels, as determined by the Director of Planning & Zoning. It may be necessary to use methodology from Standard Operating Procedures for Hydrologic determinations (see rules to implement a certification program for Qualified Hydrologic Professionals, TN Rules Chapter 0400-40-17) to identify a community water.
95. "Watercourse" means a permanent or intermittent stream or other body of water, either natural or man-made, which gathers or carries surface water.
96. "Watershed" means all the land area that contributes runoff to a particular point along a waterway.
97. "Waters" or "waters of the state" means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through, or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine or effect a junction with natural surface or underground waters.

98. "Wetland(s)" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands include, but are not limited to, swamps, marshes, bogs, and similar areas.
99. "Wet weather conveyances" are man-made or natural watercourses, including natural watercourses that have been modified by channelization, that flow only in direct response to precipitation runoff in their immediate locality and whose channels are above the groundwater table and are not suitable for drinking water supplies; and in which hydrological and biological analyses indicate that, under normal weather conditions, due to naturally occurring ephemeral or low flow, there is not sufficient water to support fish or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months. (Rules and Regulations of the State of Tennessee, Chapter 1200-4-3-.04(3)).

**16-703. Waivers.**

1. General. No waivers will be granted any construction or site work project. All construction and site work shall provide for stormwater management as required by this ordinance. However, alternatives to the 2010 NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems primary requirement for on-site permanent stormwater management may be considered, if:
  - a. Management measures cannot be designed, built and maintained to infiltrate, evapotranspire, harvest and/or use, at a minimum, the first inch of every rainfall event preceded by 72 hours of no measurable precipitation. This first inch of rainfall must be 100% managed with no discharge to surface waters.
  - b. It can be demonstrated that the proposed development is not likely to impair attainment of the objectives of this chapter. Alternative minimum requirements for on-site management of stormwater discharges have been established in a stormwater management plan that has been approved by the City.
2. Downstream damage, etc. prohibited. In order to receive consideration, the applicant must demonstrate to the satisfaction of the Planning & Zoning Department that the proposed alternative will not lead to any of the following conditions downstream:
  - a. Deterioration of existing culverts, bridges, dams, and other structures.
  - b. Degradation of biological functions or habitat.
  - c. Accelerated streambank or streambed erosion or siltation.
  - d. Increased threat of flood damage to public health, life or property.

3. Land Disturbance permit not to be issued where alternatives requested. No Land Disturbance permit shall be issued where an alternative has been requested until the alternative is approved. If no alternative is approved, the plans must be resubmitted with a stormwater management plan that meets the primary requirement for on-site stormwater management.

**16-704. Stormwater system design: Construction and Permanent stormwater management.**

1. MS4 Stormwater design or BMP manuals.
  - a. Adoption. The City adopts as its MS4 stormwater design and best management practices (BMP) manuals for stormwater management, construction and permanent, the following publications, which are incorporated by reference in this ordinance as if fully set out herein:
    - i. TDEC Erosion Prevention and Sediment Control Handbook; most current edition.
    - ii. Tennessee Permanent Stormwater Management and Design Guidance Manual; most current edition.
    - iii. A collection of MS4 approved BMP's developed or collected by the MS4 that comply with the goals of the MS4 permit and/or the CGP such as the Nashville-Davidson County Metro Stormwater Management Manual (BEST MANAGEMENT PRACTICES (BMP) MANUAL – Volume 4); most current edition.
  - b. The City's BMP manual(s) include a list of acceptable BMP's including the specific design performance criteria and operation and maintenance requirements for each stormwater practice. These include City approved BMP's for permanent stormwater management including green infrastructure BMP's.
  - c. The City manual(s) may be updated and expanded from time to time, at the discretion of the governing body of the City, upon the recommendation of the Planning & Zoning Department, based on improvements in engineering, science, monitoring and local maintenance experience, or changes in federal or state law or regulation. Stormwater facilities that are designed, constructed and maintained in accordance with these BMP criteria will be presumed to meet the minimum water quality performance standards.
2. Land development. This section shall be applicable to all land development, including, but not limited to, site plan applications, subdivision applications, and land disturbance applications. These standards apply to any new development or redevelopment site that meets one or more of the following criteria:
  - a. One (1) acre or more.

- b. New development that involves land development activities of one (1) acre or more.
  - c. Redevelopment that involves other land development activity of one (1) acre or more.
  - d. Projects or developments of less than one acre of total land disturbance may also be required to obtain authorization under this ordinance if:
    - i. The Director of Planning & Zoning has determined that the stormwater discharge from a site is causing, contributing to, or is likely to contribute to a violation of a state water quality standard.
    - ii. The Director of Planning & Zoning has determined that the stormwater discharge is, or is likely to be a significant contributor of pollutants to waters of the state.
    - iii. Changes in state or federal rules require sites of less than one acre that are not part of a larger common plan of development or sale to obtain a Land Disturbance Permit.
    - iv. Any new development or redevelopment, regardless of size, that is defined by the Director of Planning & Zoning to be a hotspot land use.
    - v. Minimum applicability criteria set forth in item (a) above if such activities are part of a larger common plan of development, even multiple, that is part of a separate and distinct land development activity that may take place at different times on different schedules.
3. Submittal of a copy of the NOC, SWPPP and NOT to the local MS4. Permittees who discharge stormwater through an NPDES-permitted municipal separate storm sewer system (MS4) who are not exempted in section 1.4.5 (Permit Coverage through Qualifying Local Program) of the Construction General Permit (CGP) must provide proof of coverage under the Construction General Permit (CGP); submit a copy of the Stormwater Pollution Prevention Plan (SWPPP); and at project completion, a copy of the signed notice of termination (NOT) to the Director of Planning & Zoning. Copies of additional applicable local, state or federal permits (i.e.: ARAP, etc.) must also be provided upon request. If requested, these permits must be provided before the issuance of any land disturbance permit or the equivalent.
4. Stormwater Pollution Prevention Plan (SWPPP) for Construction Stormwater Management. The applicant must prepare a stormwater pollution prevention plan for all construction activities that complies with subsection (5) below. The purpose of this plan is to identify construction/contractor activities that could cause pollutants in the stormwater, and to describe measures or practices to control these pollutants during project construction.

5. Stormwater Pollution Prevention Plan requirements. The erosion prevention and sediment control plan component of the SWPPP shall accurately describe the potential for soil erosion and sedimentation problems resulting from land disturbing activity and shall explain and illustrate the measures that are to be taken to control these problems. The length and complexity of the plan is to be commensurate with the size of the project, severity of the site condition, and potential for off-site damage. If necessary, the plan shall be phased so that changes to the site during construction that alter drainage patterns or characteristics will be addressed by an appropriate phase of the plan. The plan shall be sealed by a registered professional engineer or landscape architect licensed in the state of Tennessee. The plan shall also conform to the requirements found in the MS4 BMP manual, and shall include at least the following:
- a. Project description - Briefly describe the intended project and proposed land disturbing activity including number of units and structures to be constructed and infrastructure required.
  - b. A topographic map with contour intervals of two (2) feet or less showing present conditions and proposed contours resulting from land disturbing activity.
  - c. All existing drainage ways, including intermittent and wet-weather. Include any designated floodways or flood plains.
  - d. A general description of existing land cover. Individual trees and shrubs do not need to be identified.
  - e. Stands of existing trees as they are to be preserved upon project completion, specifying their general location on the property. Differentiation shall be made between existing trees to be preserved, trees to be removed and proposed planted trees. Tree protection measures must be identified, and the diameter of the area involved must also be identified on the plan and shown to scale. Information shall be supplied concerning the proposed destruction of exceptional and historic trees in setbacks and buffer strips, where they exist. Complete landscape plans may be submitted separately. The plan must include the sequence of implementation for tree protection measures.
  - f. Approximate limits of proposed clearing, grading and filling.
  - g. Approximate flows of existing stormwater leaving any portion of the site.
  - h. A general description of existing soil types and characteristics and any anticipated soil erosion and sedimentation problems resulting from existing characteristics.
  - i. Location, size and layout of proposed stormwater and sedimentation control improvements.
  - j. Existing and proposed drainage network.

- k. Proposed drain tile or waterway sizes.
  - l. Approximate flows leaving site after construction and incorporating water run-off mitigation measures. The evaluation must include projected effects on property adjoining the site and on existing drainage facilities and systems. The plan must address the adequacy of outfalls from the development: when water is concentrated, what is the capacity of waterways, if any, accepting stormwater off-site; and what measures, including infiltration, sheeting into buffers, etc., are going to be used to prevent the scouring of waterways and drainage areas off-site, etc.
  - m. The projected sequence of work represented by the grading, drainage and sedimentation and erosion control plans as related to other major items of construction, beginning with the initiation of excavation and including the construction of any sediment basins or retention/detention facilities or any other structural BMP's.
  - n. Specific remediation measures to prevent erosion and sedimentation run-off. Plans shall include detailed drawings of all control measures used; stabilization measures including vegetation and non-vegetation measures, both temporary and permanent, will be detailed. Detailed construction notes and a maintenance schedule shall be included for all control measures in the plan.
  - o. Specific details for: the construction of stabilized construction entrance/exits, concrete washouts, and sediment basins for controlling erosion; road access points; eliminating or keeping soil, sediment, and debris on streets and public ways at a level acceptable to the City. Soil, sediment, and debris brought onto streets and public ways must be removed by the end of the work day to the satisfaction of the City. Failure to remove the sediment, soil or debris shall be deemed a violation of this ordinance.
  - p. Proposed structures: location and identification of any proposed additional buildings, structures or development on the site.
  - q. A description of on-site measures to be taken to recharge surface water into the ground water system through runoff reduction practices.
  - r. Specific details for construction waste management. Construction site operators shall control waste such as discarded building materials, concrete truck washout, petroleum products and petroleum related products, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality. When the material is erodible, such as soil, the site must be treated as a construction site.
6. General design performance criteria for permanent stormwater management:  
the following performance criteria shall be addressed for permanent stormwater management at all development sites:

- a. Site design standards for all new and redevelopment require, in combination or alone, management measures that are designed, built and maintained to treat , at a minimum, treat the first inch of every rainfall event preceded by 72 hours of no measurable precipitation prior to discharge with a technology documented to remove 80% total suspended solids (TSS). The treatment technology must be designed, installed and maintained to continue to meet this performance standard.
  - b. To protect stream channels from degradation, specific channel protection criteria shall be provided as prescribed in the MS4 BMP manual.
  - c. Stormwater discharges to critical areas with sensitive resources (i.e., cold water fisheries, shellfish beds, swimming beaches, recharge areas, water supply reservoirs) may be subject to additional performance criteria, or may need to utilize or restrict certain stormwater management practices.
  - d. Stormwater discharges from hot spots may require the application of specific structural BMP's and pollution prevention practices. In addition, stormwater from a hot spot land use may not be infiltrated.
  - e. Prior to or during the site design process, applicants for land disturbance permits shall consult with the Director of Planning & Zoning to determine if they are subject to additional stormwater design requirements.
7. Minimum volume control requirements. In accordance with 16-704(8)(d) the MS4 may establish standards to regulate the quantity of stormwater discharged, therefore:
- a. Stormwater designs shall meet the multi-stage storm frequency storage requirements as identified in Section 16-704(8).
  - b. If hydrologic or topographic conditions warrant greater control than that provided by the minimum control requirements, the Director of Planning & Zoning may impose any and all additional requirements deemed necessary to control the volume, timing, and rate of runoff.
8. Permanent Stormwater management plan requirements. The stormwater management plan shall include sufficient information to allow the Director of Planning & Zoning to evaluate the environmental characteristics of the project site, the potential impacts of all proposed development of the site, both present and future, on the water resources, and the effectiveness and acceptability of the measures proposed for managing stormwater generated at the project site. To accomplish this goal the stormwater management plan shall include the following:

- a. Topographic base map: Topographic base map of the site which extends a minimum of 100 feet beyond the limits of the proposed development and indicates:
  - i. Existing surface water drainage including streams, ponds, culverts, ditches, sink holes, wetlands; and the type, size, elevation, etc., of nearest upstream and downstream drainage structures.
  - ii. Current land use including all existing structures, locations of utilities, roads, and easements.
  - iii. All other existing significant natural and artificial features.
  - iv. Proposed land use with tabulation of the percentage of surface area to be adapted to various uses; drainage patterns; locations of utilities, roads and easements; the limits of clearing and grading.
- b. Proposed structural and non-structural BMP's.
- c. A written description of the site plan and justification of proposed changes in natural conditions may also be required.
- d. Calculations: Where an increase in the permanent runoff rate is realized, a detailed downstream analysis of the 2-year through 100-year storm events (2, 5, 10, 25, 50, 100) will be required, and the increase in stormwater runoff must be mitigated. The downstream analysis must be conducted on all components of the receiving system to the point at which the total subject site represents 10% or less of the encompassing watershed. These calculations must show that the proposed stormwater management measures are capable of controlling runoff from the site in compliance with this chapter and the guidelines of the MS4 BMP manual. Such calculations shall include:
  - i. A description of the design storm frequency, duration, and intensity where applicable.
  - ii. Time of concentration.
  - iii. Soil curve numbers or runoff coefficients including assumed soil moisture conditions.
  - iv. Peak runoff rates and total runoff volumes for each watershed area.
  - v. Infiltration rates, where applicable.
  - vi. Culvert, stormwater sewer, ditch and/or other stormwater conveyance capacities.
  - vii. Flow velocities.
  - viii. Data on the increase in rate and volume of runoff for the design storms referenced in the MS4 BMP manual.
  - ix. Documentation of sources for all computation methods and field test results.
- e. Soils information: If a stormwater management control measure depends on the hydrologic properties of soils (e.g., infiltration basins), then a soils report shall be submitted. The soils report shall be based on

on-site boring logs or soil pit profiles and soil survey reports. The number and location of required soil borings or soil pits shall be determined based on what is needed to determine the suitability and distribution of soil types present at the location of the control measure.

9. Maintenance and repair plan: The design and planning of all permanent stormwater management facilities shall include detailed maintenance and repair procedures to ensure their continued performance. These plans will identify the parts or components of a stormwater management facility that need to be maintained and the equipment and skills or training necessary. Provisions for the periodic review and evaluation of the effectiveness of the maintenance program and the need for revisions or additional maintenance procedures shall be included in the plan.
10. Buffers and buffer zones. Buffer and buffer zones shall be those buffers and buffer zones as those terms are defined in 16-702(11), above, and shall meet the requirements contained in those provisions.
  - a. Construction
    - i. Construction requires buffer zone widths of a minimum of thirty (30) feet. The thirty (30) foot criterion for the width of the buffer zone can be established on an average width basis. As long as the minimum width of the buffer zone is fifteen (15) feet. The buffer zone shall meet all the other applicable requirements of 16-702 (11) and 16-706.
    - ii. Construction on unavailable parameters or exceptional waters. The width of the buffer zone shall be a minimum of sixty (60) feet. The sixty (60) feet criterion for the width of the buffer zone can be established on an average basis at a project as long as the minimum width of the buffer is more than thirty (30) feet at any measured location. The buffer zone shall meet all the other applicable requirements of 16-702(11) and 16-706.
  - b. Permanent
    - i. More than one (1) square mile drainage area will require buffer zones of a minimum of sixty (60) feet. The sixty (60) foot criterion for the width of the buffer zone can be established on an average width basis, as long as the minimum width of the buffer zone is more than thirty (30) feet at any measured location.
    - ii. Less than one (1) square mile drainage area. Less than one (1) square mile drainage area will require buffer zones of a minimum of thirty (30) feet. The thirty (30) foot criterion for the width of the buffer zone can be established on an average width basis, as long as the minimum width of the buffer zone is more than thirty (30) feet at any measured location. The buffer zone shall meet all the other applicable requirements of 16-702(11) and 16-706.

**16-705. Permanent stormwater management: operation, maintenance, and inspection.**

1. As built plans. All applicants are required to submit actual as built plans for any structures located on-site after final construction is completed. The plan must show the final design specifications for all stormwater management facilities and must be sealed by a registered professional engineer licensed to practice in Tennessee. A final inspection by the City is required before any performance security or performance bond will be released. The City shall have the discretion to adopt provisions for a partial pro-rata release of the performance security or performance bond on the completion of various stages of development. In addition, occupation permits shall not be granted until corrections to all BMP's have been made and accepted by the City.
2. Landscaping and stabilization requirements.
  - a. Any area of land from which the natural vegetative cover has been either partially or wholly cleared by development activities shall stabilize. Stabilization measures shall be initiated as soon as possible in portions of the site where construction activities have temporarily or permanently ceased. Temporary or permanent soil stabilization at the construction site (or a phase of the project) must be completed not later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. In the following situations, temporary stabilization measures are not required:
    - i. Where the initiation of stabilization measures is precluded by snow cover or frozen ground conditions or adverse soggy ground conditions, stabilization measures shall be initiated as soon as practicable.
    - ii. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 14 days.
  - b. Permanent stabilization with perennial vegetation (using native herbaceous and woody plants where practicable) or other permanently stable, non-eroding surface shall replace any temporary measures as soon as practicable. Unpacked gravel containing fines (silt and clay sized particles) or crusher runs will not be considered a non-eroding surface.
  - c. The following criteria shall apply to revegetation efforts:
    - i. Reseeding must be done with an annual or perennial cover crop accompanied by placement of straw mulch or its equivalent of sufficient coverage to control erosion until such time as the cover crop is established over ninety percent (90%) of the seeded area.

- ii. Replanting with native woody and herbaceous vegetation must be accompanied by placement of straw mulch or its equivalent of sufficient coverage to control erosion until the plantings are established and are capable of controlling erosion.
  - iii. Any area of revegetation must exhibit survival of a minimum of seventy-five percent (75%) of the cover crop throughout the year immediately following revegetation. Revegetation must be repeated in successive years until the minimum seventy-five percent (75%) survival for one (1) year is achieved.
  - iv. In addition to the above requirements, a landscaping plan must be submitted with the final design describing the vegetative stabilization and management techniques to be used at a site after construction is completed. This plan will explain not only how the site will be stabilized after construction, but who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved.
3. Inspection of stormwater management facilities. Periodic inspections of facilities shall be performed, documented, and reported in accordance with this chapter, as detailed in §16-507.
  4. Records of installation and maintenance activities. Parties responsible for the operation and maintenance of a stormwater management facility shall make records of the installation of the stormwater facility, and of all maintenance and repairs to the facility, and shall retain the records for at least three (3) years. These records shall be made available to the City during inspection of the facility and at other reasonable times upon request.
  5. Failure to meet or maintain design or maintenance standards. If a responsible party fails or refuses to meet the design or maintenance standards required for stormwater facilities under this chapter, the City, after reasonable notice, may correct a violation of the design standards or maintenance needs by performing all necessary work to place the facility in proper working condition. In the event that the stormwater management facility becomes a danger to public safety or public health, the City shall notify in writing the party responsible for maintenance of the stormwater management facility. Upon receipt of that notice, the responsible person shall have thirty (30) days to effect maintenance and repair of the facility in an approved manner. In the event that corrective action is not undertaken within that time, the City may take necessary corrective action. The cost of any action by the City under this section shall be charged to the responsible party.

**16-706. Riparian Buffer Requirements.**

1. A Riparian Buffer shall be applied to all water resources located in, or adjacent to, new construction, development, or redevelopment that require a Land Disturbance Permit. The goal of the water quality buffer is to preserve undisturbed vegetation that is native to the streamside habitat in the area of the project. Vegetated, preferably native, water quality buffers protect water bodies by providing structural integrity and canopy cover, as well as stormwater infiltration, filtration and evapotranspiration.
2. A determination that water quality buffer widths cannot be met on-site may not be based solely on the difficulty or cost of implementing measures, but must include multiple criteria, such as: type of project, existing land use and physical conditions that preclude use of these practices. Every attempt should be made for development and redevelopment activities not to take place within the buffer zone.
  - a. "Construction" applies to all streams adjacent to construction sites, with an exception for streams designated as unavailable parameters or exceptional Tennessee waters, as designated by the Tennessee Department of Environment and Conservation. A 30-foot natural riparian buffer zone adjacent to all streams at the construction site shall be preserved, to the maximum extent practicable, during construction activities at the site. The water quality buffer zone is required to protect waters of the state located within or immediately adjacent to the boundaries of the project, as identified using methodology from Standard Operating Procedures for Hydrologic Determinations (see rules to implement a certification program for Qualified Hydrologic Professionals, TN Rules Chapter 0400-40-17). Buffer zones are not primary sediment control measures and should not be relied on as such. Rehabilitation and enhancement of a natural buffer zone is allowed, if necessary, for improvement of its effectiveness of protection of the waters of the state. The buffer zone requirement only applies to both new construction sites and redevelopment. The riparian buffer zone should be preserved between the top of stream bank and the disturbed construction area.
  - b. Buffer zone requirements for discharges into unavailable parameters or exceptional waters: A 60-foot natural riparian buffer zone adjacent to the receiving stream designated as unavailable parameters or exceptional waters shall be preserved, to the maximum extent practicable, during construction activities at the site. The water quality buffer zone is required to protect waters of the state (e.g., perennial and intermittent streams, rivers, lakes, wetlands) located within or immediately adjacent to the boundaries of the project, as identified using methodology from Standard Operating Procedures for Hydrologic

Determinations (see rules to implement a certification program for Qualified Hydrologic Professionals, TN Rules Chapter 0400-40-17). Buffer zones are not sediment control measures and should not be relied upon as primary sediment control measures. Rehabilitation and enhancement of a natural buffer zone is allowed, if necessary, for improvement of its effectiveness of protection of the waters of the state. The buffer zone requirement only applies to both new construction sites and redevelopment. The riparian buffer zone should be established between the top of stream bank and the disturbed construction area. The 60-foot criterion for the width of the buffer zone can be established on an average width basis at a project, as long as the minimum width of the buffer zone is more than 30 feet at any measured location.

- c. "Permanent" new development and significant redevelopment sites are required to preserve water quality buffers along waters within the MS4. Buffers shall be clearly marked on site development plans, land disturbance permit applications, and/or concept plans. Buffer width depends on the size of a drainage area. Streams or other waters with drainage areas less than 1 square mile will require buffer widths of 30 feet minimum. Streams or other waters with drainage areas greater than 1 square mile will require buffer widths of 60 feet minimum. The 60-foot criterion for the width of the buffer zone can be established on an average width basis at a project, as long as the minimum width of the buffer zone is more than 30 feet at any measured location.
3. The following list includes the allowable uses within the buffer zone. The Director of Planning & Zoning shall approve the specific requirements of a plan proposing the installation of any feature or construction within the buffer zone. For any such work, a buffer management plan shall be submitted to the Director of Planning & Zoning prior to the issuance of a land disturbance permit.
    - a. Utility crossings.
    - b. Passive recreation, pervious footpaths, and boardwalks to approach the water resource as approved by the Director of Planning & Zoning.
    - c. Biking or hiking paths and greenways, but no closer than 30 feet at any measured location. View corridors shall be allowed along greenways as approved by the Director of Planning & Zoning. Paths and greenways shall be designed to prevent the channelization of stormwater runoff, and should be constructed of pervious and/or permeable materials. There shall be no other permanent structures with the exception of paths.
    - d. Stormwater channels as approved by the Director of Planning & Zoning.

- e. Stabilization practices to prevent channelization and erosion in the buffer zone from stormwater runoff adjacent to the water resource.
  - f. Landscaping to allow for climax successional vegetation through the removal of invasive exotic plants and the establishment of native vegetation, and/or other practices that restore the ecological integrity of the riparian buffer.
  - g. Removal of individual trees within the buffer zone which are in danger of falling, causing damage to dwellings or other structures, or causing blockage of the water resource.
  - h. Cut and fill for floodplain compensations as approved by the Director of Planning & Zoning.
4. Requests to reduce the riparian buffer width, perform clearing activities or install crossings within the riparian buffer shall be approved by the Director of Planning & Zoning.
- a. The riparian buffer width may be reduced in conjunction with targeted restoration plans that make comparable improvements to both the ecological integrity within the buffer zone and water quality of the water resource. Reduction of the riparian buffer width shall be approved on a case-by-case basis. Restoration plans must be submitted along with a buffer management plan to the Director of Planning & Zoning for approval.
  - b. Riparian buffer crossings should be limited as much as possible. Utilities shall be located under pavement where possible to limit the width of the crossing. Riparian buffer crossings shall be submitted along with a buffer management plan to the Director of Planning & Zoning for approval.
    - i. Utilities may be allowed in the riparian buffer, but not closer than 30 feet to the top of bank except for crossings.
    - ii. The Director of Planning & Zoning may approve new driveways or road crossings through or across riparian buffer zones on a case-by-case basis. It shall be demonstrated that the access across the buffer is necessary and that the buffer will not be impacted excessively. In these cases, the driveway or road crossing shall be constructed perpendicular, or as close to perpendicular as possible to the water resource and/or riparian buffer with careful detail to protecting trees and vegetation and minimizing site grades. Other federal, state and/or local permits may still be required.
5. For any proposed development and/or construction activity within or adjacent to a riparian buffer, the following shall be required.
- a. The parameters of the riparian buffer shall be delineated by the applicant and boundaries shall be clearly indicated and labeled on all plats, plans, permits and official maps.

- b. Include a note on plans to reference protective covenants governing all riparian buffer areas, labeled as: “Any Riparian Buffer is subject to protective covenants recorded in the Register of Deeds (Warren County). Disturbance and use of these areas is restricted; severe penalties apply.”
  - c. Riparian buffers shall be protected during construction activities by a combination of fencing and flagging to prevent entry of construction equipment, storage and stockpiling. Buffer boundaries shall be marked with signs that persist before, during and after construction activities.
  - d. Permanent boundary markers shall be installed prior to the completion of the development activities. Signage shall be posted at the edge of the riparian buffer on each lot line, and at a maximum spacing of 200 feet. Properties with a large amount of riparian buffer frontage may request a reduction in spacing requirements, subject to approval by the Director of Planning & Zoning. The size of the sign shall be six inches by four inches or greater and shall contain the message, “Water Resource protected. Violators subject to severe penalties” or other language as approved by the Director of Planning & Zoning.
  - e. All riparian buffers shall be placed in open space lots to be maintained according to Section 16-705 of this chapter.
6. Riparian buffers shall be actively managed with periodic buffer surveys. Violators shall be served with civil penalties according to subsection 16-710(2) of this chapter and shall be required, at their own expense, to revegetate, according to an approved buffer management plan, and maintain the section of the riparian buffer encroached upon, using only native vegetation. Equivalent native plants and trees that were removed shall be replaced on a tree per tree basis or as approved by the Director of Planning & Zoning.

**16-707. Existing locations and ongoing developments.**

1. On-site stormwater management facilities maintenance agreement:
  - a. Where the stormwater facility is located on property that is subject to a development agreement, and the development agreement provides for a permanent stormwater maintenance agreement that runs with the land, the owners of property must execute an inspection and maintenance agreement that shall operate as a deed restriction binding on the current property owners and all subsequent property owners and their lessees and assigns, including but not limited to, homeowner associations or other groups or entities.
  - b. The maintenance agreement shall:

- i. Assign responsibility for the maintenance and repair of the stormwater facility to the owners of the property upon which the facility is located and be recorded as such on the plat for the property by appropriate notation.
2. Provide for a periodic inspection by the property owners in accordance with the requirements of subsection (5) below for the purpose of documenting maintenance and repair needs and to ensure compliance with the requirements of this ordinance. The property owners will arrange for this inspection to be conducted by a registered professional engineer licensed to practice in the State of Tennessee, who will submit a signed written report of the inspection to the Director of Planning & Zoning. It shall also grant permission to the City to enter the property at reasonable times and to inspect the stormwater facility to ensure that it is being properly maintained.
  - a. Provide that the minimum maintenance and repair needs include, but are not limited to: the removal of silt, litter and other debris, the cutting of grass, cutting and vegetation removal, and the replacement of landscape vegetation, in detention and retention basins, and inlets and drainage pipes and any other stormwater facilities. It shall also provide that the property owners shall be responsible for additional maintenance and repair needs consistent with the needs and standards outlined in the MS4 BMP manual.
3. Provide that maintenance needs must be addressed in a timely manner, on a schedule to be determined by the Director of Planning & Zoning.
4. Provide that if the property is not maintained or repaired within the prescribed schedule, the Director of Planning & Zoning shall perform the maintenance and repair at its expense, and bill the same to the property owner. The maintenance agreement shall also provide that the Director of Planning & Zoning's cost of performing the maintenance shall be a lien against the property.
5. Existing problem locations – no maintenance agreement.
  - a. The Director of Planning & Zoning shall in writing notify the owners of existing locations and developments of specific drainage, erosion or sediment problems affecting or caused by such locations and developments, and the specific actions required to correct those problems. The notice shall also specify a reasonable time for compliance. Discharges from existing BMP's that have not been maintained and/or inspected in accordance with this ordinance shall be regarded as illicit.
  - b. Inspection of existing facilities. The City may, to the extent authorized by state and federal law, enter and inspect private property for the purpose of determining if there are illicit non-stormwater discharges,

and to establish inspection programs to verify that all stormwater management facilities are functioning within design limits. These inspection programs may be established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of the City's NPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other BMP's.

6. Owner/Operator Inspections - generally. The owners and/or the operators of stormwater management practices shall:
  - a. Perform routine inspections to ensure that the BMP's are properly functioning. These inspections shall be conducted on an annual basis, at a minimum. These inspections shall be conducted by a person familiar with control measures implemented at a site. Owners or operators shall maintain documentation of these inspections. The Director of Planning & Zoning may require submittal of this documentation.
  - b. Perform comprehensive inspection of all stormwater management facilities and practices. These inspections shall be conducted once every five years, at a minimum. Such inspections must be conducted by either a professional engineer or landscape architect, licensed in the State of Tennessee. Complete inspection reports for these five year inspections shall include:
    - i. Facility type.
    - ii. Inspection date.
    - iii. Latitude and longitude and nearest street address.
    - iv. BMP owner information (e.g. name, address, phone number, fax, and email).
    - v. A description of BMP condition including: vegetation and soils; inlet and outlet channels and structures; embankments, slopes, and safety benches; spillways, weirs, and other control structures; and any sediment and debris accumulation.
    - vi. Photographic documentation of BMP's.

- vii. Specific maintenance items or violations that need to be corrected by the BMP owner along with deadlines and reinspection dates.
  - c. Owners or operators shall maintain documentation of these inspections. The Director of Planning & Zoning may require submittal of this documentation.
- 7. Requirements for all existing locations and ongoing developments. The following requirements shall apply to all locations and development at which land disturbing activities have occurred previous to the enactment of this ordinance:
  - a. Denuded areas must be vegetated or covered under the standards and guidelines specified in 16-705 (2)(c)(i), (ii), (iii) and on a schedule acceptable to the Director of Planning & Zoning.
  - b. Cuts and slopes must be properly covered with appropriate vegetation and/or retaining walls constructed.
  - c. Drainage ways shall be properly covered in vegetation or secured with rip-rap, channel lining, etc., to prevent erosion.
  - d. Trash, junk, rubbish, etc. shall be cleared from drainage ways.
  - e. Stormwater runoff shall, at the discretion of the Director of Planning & Zoning be controlled to the maximum extent practicable to prevent its pollution. Such control measures may include, but are not limited to, the following:
    - i. Ponds
    - ii. Detention pond
    - iii. Extended detention pond
    - iv. Wet pond
    - v. Alternative storage measures
  - f. Constructed wetlands
  - g. Infiltration systems
    - i. Infiltration/percolation trench
    - ii. Infiltration basin
    - iii. Drainage (recharge) well
    - iv. Porous pavement
  - h. Filtering systems
    - i. Catch basin inserts/media filter
    - ii. Sand filter
    - iii. Filter/absorption bed
    - iv. Filter and buffer strips
  - i. Open channel
    - i. Swale
- 8. Corrections of problems subject to appeal. Corrective measures imposed by the Director of Planning & Zoning under this section are subject to appeal under section 16-711 of this chapter.

**16-708. Illicit discharges.**

1. Scope. This section shall apply to all water generated on developed or undeveloped land entering the City's separate storm sewer system.
2. Prohibition of illicit discharges. No person shall introduce or cause to be introduced into the municipal separate storm sewer system any discharge that is not composed entirely of stormwater or any discharge that flows from stormwater facility that is not inspected in accordance with section 16-707 shall be an illicit discharge. Non-stormwater discharges shall include, but shall not be limited to, sanitary wastewater, car wash wastewater, radiator flushing disposal, spills from roadway accidents, carpet cleaning wastewater, effluent from septic tanks, improper oil disposal, laundry wastewater/gray water, improper disposal of auto and household toxics. The commencement, conduct or continuance of any non-stormwater discharge to the municipal separate storm sewer system is prohibited except as described as follows:
  - a. Uncontaminated discharges from the following sources:
    - i. Water line flushing or other potable water sources.
    - ii. Landscape irrigation or lawn watering with potable water.
    - iii. Diverted stream flows.
    - iv. Rising ground water.
    - v. Groundwater infiltration to storm drains.
    - vi. Pumped groundwater.
    - vii. Foundation or footing drains.
    - viii. Crawl space pumps.
    - ix. Air conditioning condensation.
    - x. Spring.
    - xi. Non-commercial washing of vehicles.
    - xii. Natural riparian habitat or wetland flows.
    - xiii. Swimming pools (if dechlorinated - typically less than one PPM chlorine or desalinated for salt water pools).
    - xiv. Firefighting activities.
    - xv. Individual residential car washing.
    - xvi. Controlled flushing of stormwater conveyances (controlled by appropriate BMPs).
    - xvii. Discharges within the constraints of an NPDES permit from the Tennessee Department of Environment and Conservation (TDEC).
    - xviii. Any other uncontaminated water source.
  - b. Discharges specified in writing by the City as being necessary to protect public health and safety.
  - c. Dye testing is an allowable discharge if the City has so specified in writing.

- d. Discharges authorized by the Construction General Permit (CGP), which comply with Section 3.5.9 of the same:
  - i. Dewatering of work areas of collected stormwater and ground water (filtering or chemical treatment may be necessary prior to discharge).
  - ii. Waters used to wash vehicles (of dust and soil, not process materials such as oils, asphalt or concrete) where detergents are not used and detention and/or filtering is provided before the water leaves site.
  - iii. Water used to control dust in accordance with CGP section 3.5.5.
  - iv. Potable water sources including waterline flushings from which chlorine has been removed to the maximum extent practicable.
  - v. Routine external building washdown that does not use detergents or other chemicals.
  - vi. Uncontaminated groundwater or spring water.
  - vii. Foundation or footing drains where flows are not contaminated with pollutants (process materials such as solvents, heavy metals, etc.).
3. Prohibition of illicit connections. The construction, use, maintenance or continued existence of illicit connections to the municipal separate storm sewer system is prohibited. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.
4. Reduction of stormwater pollutants by the use of best management practices. Any person responsible for a property or premises, which is, or may be, the source of an illicit discharge, may be required to implement, at the person's expense, the BMP's necessary to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of stormwater associated with industrial activity, to the extent practicable, shall be deemed in compliance with the provisions of this section. Discharges from existing BMP's that have not been maintained and/or inspected in accordance with this ordinance shall be regarded as illicit.
5. Notification of spills. Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting in, or may result in, illicit discharges or pollutants discharging into, the municipal separate storm sewer system, the person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials the person shall immediately notify emergency response agencies of the occurrence via emergency dispatch

services. In the event of a release of non-hazardous materials, the person shall notify the City in person or by telephone, fax, or email, no later than the next business day. Notifications in person or by telephone shall be confirmed by written notice addressed and mailed to the City within three (3) business days of the telephone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three (3) years.

6. No illegal dumping allowed. No person shall dump or otherwise deposit outside an authorized landfill, convenience center or other authorized garbage or trash collection point, any trash or garbage of any kind or description on any private or public property, occupied or unoccupied, inside the City.

**16-709. Enforcement.**

1. Enforcement authority. The Director of Planning & Zoning shall have the authority to issue notices of violation and citations, and to impose the civil penalties provided in this section. Each day of noncompliance is considered a separate offense; and nothing herein contained shall prevent the City from taking such other lawful action as is necessary to prevent or remedy any violation, including application for injunctive relief. If the person, property or facility has or is required to have a stormwater discharge permit from TDEC, the City shall alert the appropriate state authorities of the violation. Measures authorized include:
  - a. Verbal Warnings – At minimum, verbal warnings must specify the nature of the violation and required corrective action. Verbal warnings will be documented by the City.
  - b. Written Notices – Written notices must stipulate the nature of the violation and the required corrective action, with deadlines for taking such action.
  - c. Citations with Administrative Penalties – The MS4 has the authority to assess monetary penalties, which may include civil and administrative penalties.
  - d. Stop Work Orders – Stop work orders that require construction activities to be halted, except for those activities directed at cleaning up, abating discharge, and installing appropriate control measures.
  - e. Withholding of Plan Approvals or Other Authorizations – Where a facility is in noncompliance, the MS4’s own approval process affecting the facility’s ability to discharge to the MS4 can be used to abate the violation.

- f. Additional Measures – The MS4 may also use other escalated measures provided under local legal authorities. The MS4 may perform work necessary to improve erosion control measures and collect the funds from the responsible party in an appropriate manner, such as collecting against the project’s bond or directly billing the responsible party to pay for work and materials.
2. Notification of violation:
- a. Verbal warning. Verbal warning may be given at the discretion of the inspector when it appears the condition can be corrected by the violator within a reasonable time, which time shall be approved by the inspector.
  - b. Written notice. Whenever the Director of Planning & Zoning finds that any permittee or any other person discharging stormwater has violated or is violating this ordinance or a permit or order issued hereunder, the Director of Planning & Zoning may serve upon such person written notice of the violation. All written notices will be documented and delivered by personal service or by registered or certified mail (return receipt requested) to the person that has violated or is violating this chapter. Within ten (10) days of this notice or shorter period as may be prescribed in the notice, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted to the Director of Planning & Zoning. Submission of this plan in no way relieves the discharger of liability for any violations occurring before or after receipt of the notice of violation.
  - c. Consent orders. The Director of Planning & Zoning is empowered to enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with the person responsible for the noncompliance. Such orders will include specific action to be taken by the person to correct the noncompliance within a time period also specified by the order. Consent orders shall have the same force and effect as administrative orders issued pursuant to paragraphs (d) and (e) below.
  - d. Show cause hearing. The Director of Planning & Zoning may order any person who violates this chapter or permit or order issued hereunder, to show cause why a proposed enforcement action should not be taken. Notice shall be served on the person specifying the time and place for the meeting, the proposed enforcement action and the reasons for such action, and a request that the violator show cause why this proposed enforcement action should not be taken. The notice of the meeting shall be served personally or by registered or certified mail (return receipt requested) at least ten (10) days prior to the hearing.

- e. Compliance order. When the Director of Planning & Zoning finds that any person has violated or continues to violate this chapter or a permit or order issued thereunder, he may issue an order to the violator directing that, following a specific time period, adequate structures or devices be installed and/or procedures implemented and properly operated. Orders may also contain such other requirements as might be reasonably necessary and appropriate to address the noncompliance, including the construction of appropriate stormwater structures, installation of devices, self-monitoring, and management practices.
- f. Cease and desist and stop work orders. When the Director of Planning & Zoning finds that any person has violated or continues to violate this chapter or any permit or order issued hereunder, the Director of Planning & Zoning may issue a stop work order or an order to cease and desist all such violations and direct those persons in noncompliance to:
  - i. Comply forthwith.
  - ii. Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation; including halting operations except for terminating the discharge and installing appropriate control measures.
- g. Suspension, revocation or modification of permit. The Director of Planning & Zoning may suspend, revoke or modify the permit authorizing the land development project or any other project of the applicant or other responsible person within the City. A suspended, revoked or modified permit may be reinstated after the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein, provided such permit may be reinstated upon such conditions as the Director of Planning & Zoning may deem necessary to enable the applicant or other responsible person to take the necessary remedial measures to cure such violations.
- h. Conflicting standards. Whenever there is a conflict between any standard contained in this chapter and in the BMP manual adopted by the City under this ordinance, the strictest standard shall prevail.

**16-710. Penalties.**

- 1. Violations. Any person who shall commit any act declared unlawful under this chapter, who violates any provision of this chapter, who violates the provisions of any permit issued pursuant to this chapter, or who fails or refuses to comply with any lawful communication or notice to abate or take corrective action by the Director of Planning & Zoning, shall be guilty of a civil offense.

2. Penalties. Under the authority provided in Tennessee Code Annotated § 68-221-1106, the City declares that any person violating the provisions of this chapter may be assessed a civil penalty by the Director of Planning & Zoning of not less than fifty dollars (\$50.00) and not more than five thousand dollars (\$5,000.00) per day for each day of violation. Each day of violation shall constitute a separate violation.
3. Measuring civil penalties. In assessing a civil penalty, the Director of Planning & Zoning may consider:
  - a. The harm done to the public health or the environment.
  - b. The duration and gravity of the violation.
  - c. Whether the civil penalty imposed will be a substantial economic deterrent to the illegal activity.
  - d. The economic benefit gained by the violator.
  - e. The amount of effort put forth by the violator to remedy this violation.
  - f. Whether the violation was committed intentionally.
  - g. The prior record of the violator in complying or failing to comply with the stormwater management program.
  - h. Any unusual or extraordinary enforcement costs incurred by the City.
  - i. The amount of penalty established by ordinance or resolution for specific categories of violations.
  - j. Any equities of the situation which outweigh the benefit of imposing any penalty or damage assessment.
4. Recovery of damages and costs. In addition to the civil penalty in subsection (2) above, the City may recover:
  - a. All damages proximately caused by the violator to the City, which may include any reasonable expenses incurred in investigating violations of, and enforcing compliance with, this chapter, or any other actual damages caused by the violation.
  - b. The costs of the City's maintenance of stormwater facilities when the user of such facilities fails to maintain them as required by this chapter.
5. Referral to TDEC. Where the City has used progressive enforcement to achieve compliance with this ordinance, and in the judgment of the City has not been successful, the City may refer the violation to TDEC. For the purposes of this provision, "progressive enforcement" shall mean two (2) follow-up inspections and two (2) warning letters. In addition, enforcement referrals to TDEC must include, at a minimum, the following information:
  - a. Construction project or industrial facility location.
  - b. Name of owner or operator.
  - c. Estimated construction project or size or type of industrial activity (including SIC code, if known).

- d. Records of communications with the owner or operator regarding the violation, including at least two follow-up inspections, two warning letters or notices of violation, and any response from the owner or operator.
6. Other remedies. The City may bring legal action to enjoin the continuing violation of this chapter, and the existence of any other remedy, at law or equity, shall be no defense to any such actions.
7. Remedies cumulative. The remedies set forth in this section shall be cumulative, not exclusive, and it shall not be a defense to any action, civil or criminal, that one (1) or more of the remedies set forth herein has been sought or granted.

**16-711. Appeals.**

1. Pursuant to Tennessee Code Annotated § 68-221-1106(d), any person aggrieved by the imposition of a civil penalty or damage assessment as provided by this chapter may appeal said penalty or damage assessment to the **Board of Zoning Appeals**.
2. Appeals to be in writing. The appeal shall be in writing and filed with the municipal recorder or clerk within fifteen (15) days after the civil penalty and/or damage assessment is served in any manner authorized by law.
3. Public hearing. Upon receipt of an appeal, the **Board of Zoning Appeals** shall hold a public hearing within thirty (30) days. Ten (10) days prior notice of the time, date, and location of said hearing shall be published in a daily newspaper of general circulation. Ten (10) days' notice by registered mail shall also be provided to the aggrieved party, such notice to be sent to the address provided by the aggrieved party at the time of appeal. The decision of the **Board of Zoning Appeals** shall be final.
4. Appealing decisions of the City's **Board of Zoning Appeals**. Any alleged violator may appeal a decision of the **Board of Zoning Appeals** pursuant to the provisions of Tennessee Code Annotated, title 27, chapter 8.