

# **MODEL STORMWATER ORDINANCE**

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## MODEL STORMWATER ORDINANCE

**Section 1. General provisions.** (1). Purpose. It is the purpose of this ordinance to:

- (a) Protect, maintain, and enhance the environment of the City of \_\_\_\_\_ 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 of \_\_\_\_\_ 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 of \_\_\_\_\_ to exercise the powers granted in Tennessee Code Annotated §68-221-1105, which provides that, among other powers municipalities have with respect to stormwater facilities, is the power by ordinance or resolution to:
  - (1) Exercise general regulation over the planning, location, construction, and operation and maintenance of stormwater facilities in the municipality, whether or not owned and operated by the municipality;

- (2) 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;
- (3) Establish standards to regulate the quantity of stormwater discharged and to regulate stormwater contaminants as may be necessary to protect water quality;
- (4) Review and approve plans and plats for stormwater management in proposed subdivisions or commercial developments;
- (5) Issue permits for stormwater discharges, or for the construction, alteration, extension, or repair of stormwater facilities;
- (6) Suspend or revoke permits when it is determined that the permittee has violated any applicable ordinance, resolution, or condition of the permit;
- (7) Regulate and prohibit discharges into stormwater facilities of sanitary, industrial, or commercial sewage or waters that have otherwise been contaminated; and
- (8) 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 \_\_\_\_\_ (**stormwater utility**) shall administer the provisions of this ordinance.

[NOTE: Many municipalities will not establish a stormwater utility to administer this ordinance. The public works or other department of the municipality could be designated by the municipal governing body to perform such functions. In such cases the ordinance will need to be modified accordingly.]

**Section 2. Definitions.** For the purpose of this chapter, the following definitions shall apply:

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.

- (1) “*As built plans*” means drawings depicting conditions as they were actually constructed.
- (2) “*Best management practices*” or “*BMPs*” are physical, structural, and/or managerial practices that, when used singly or in combination, prevent or reduce pollution of water, that have been approved by the City of \_\_\_\_\_, and that have been incorporated by reference into this ordinance as if fully set out therein.

[NOTE: See § 5(1) for recommended BMP manual.]

- (3) “*Channel*” means a natural or artificial watercourse with a definite bed and banks that conducts flowing water continuously or periodically.
- (4) “*Community water*” means any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wetlands, wells and other bodies of surface or subsurface water, natural or artificial, lying within or forming a part of the boundaries of the City of \_\_\_\_\_.

- (5) “*Contaminant*” means any physical, chemical, biological, or radiological substance or matter in water.
- (6) “*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.
- (7) “*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.
- (8) “*Easement*” means an acquired privilege or right of use or enjoyment that a person, party, firm, corporation, municipality or other legal entity has in the land of another.
- (9) “*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 anthropogenic activities or effects.
- (10) “*Erosion and sediment control plan*” means a written plan (including drawings or other graphic representations) that is designed to minimize the accelerated erosion and sediment runoff at a site during construction activities.
- (11) “*Hotspot*” (“*priority area*”) means an area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater.

- (12) “*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.
- (13) “*Illicit discharge*” means any discharge to the municipal separate storm sewer system that is not composed entirely of stormwater and not specifically exempted under §3(3).
- (14) “*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.
- (15) “*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.
- (16) “*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.
- (17) “*Municipal separate storm sewer system (MS4)*” (“*Municipal separate stormwater system*”) means the conveyances owned or operated by the

municipality 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.

- (18) “*National Pollutant Discharge Elimination System permit*” or “*NPDES permit*” means a permit issued pursuant to 33 U.S.C. 1342.
- (19) “*Off-site facility*” means a structural BMP located outside the subject property boundary described in the permit application for land development activity.
- (20) “*On-site facility*” means a structural BMP located within the subject property boundary described in the permit application for land development activity.
- (21) “*Peak flow*” means the maximum instantaneous rate of flow of water at a particular point resulting from a storm event.
- (22) “*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.
- (23) “*Priority area*” means “hot spot” as defined in § 2(11).
- (24) “*Runoff*” means that portion of the precipitation on a drainage area that is discharged from the area into the municipal separate stormwater system.
- (25) “*Sediment*” means solid material, both mineral 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.

- (26) “*Sedimentation*” means soil particles suspended in stormwater that can settle in stream beds and disrupt the natural flow of the stream.
- (27) “*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.
- (28) “*Stabilization*” means providing adequate measures, vegetative and/or structural, that will prevent erosion from occurring.
- (29) “*Stormwater*” means stormwater runoff, snow melt runoff, surface runoff, street wash waters related to street cleaning or maintenance, infiltration and drainage.
- (30) “*Stormwater management*” means the programs to maintain quality and quantity of stormwater runoff to pre-development levels.
- (31) “*Stormwater management facilities*” means the drainage structures, conduits, ditches, combined sewers, sewers, and all device appurtenances by means of which stormwater is collected, transported, pumped, treated or disposed of.
- (32) “*Stormwater management plan*” means the set of drawings and other documents that comprise all the information and specifications for the programs, drainagesystems, structures, BMPs, concepts and techniques intended to maintain or restore quality and quantity of stormwater runoff to pre-development levels.
- (33) “*Stormwater runoff*” means flow on the surface of the ground, resulting from precipitation.

- (34) “*Stormwater utility*” means the stormwater utility created by ordinance of the city to administer the stormwater management ordinance, and other stormwater rules and regulations adopted by the municipality.
- (35) “*Structural BMPs*” means devices that are constructed to provide control of stormwater runoff.
- (36) “*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.
- (37) “*Watercourse*” means a permanent or intermittent stream or other body of water, either natural or man-made, which gathers or carries surface water.
- (38) “*Watershed*” means all the land area that contributes runoff to a particular point along a waterway.

**Section 3. Land disturbance permits. (1). When required.**

- (a) Every person will be required to obtain a land disturbance permit from the \_\_\_\_\_ (**stormwater utility**) in the following cases:

- (1) Land disturbing activity disturbs one (1) or more acres of land;

[NOTE: Municipalities have the option of generally requiring land disturbance permits for activities of less than one (1) acre. However, the general one (1) acre requirement is consistent with the size of the land disturbance for which a TDEC permit is also required.]

- (2) Land disturbing activity of less than one (1) acre of land if such activity is part of a larger common plan of development that affects one (1) or more acre of land;

- (3) Land disturbing activity of less than one (1) acre of land, if in the discretion of the \_\_\_\_\_ (**stormwater utility**) such activity poses a unique threat to water, or public health or safety;
  - (4) The creation and use of borrow pits.
- (2). Building permit. No building permit shall be issued until the applicant has obtained a land disturbance permit where the same is required by this ordinance.
- (3). Exemptions. The following activities are exempt from the permit requirement:
  - (a) Any emergency activity that is immediately necessary for the protection of life, property, or natural resources.
  - (b) Existing nursery and agricultural operations conducted as a permitted main or accessory use.
  - (c) Any logging or agricultural activity that is consistent with an approved farm conservation plan or a timber management plan prepared or approved by the \_\_\_\_\_ (**appropriate federal or state agency**).
  - (d) Additions or modifications to existing single family structures.
- (4). Application for a land disturbance permit.
  - (a) Each application shall include the following:
    - (1) Name of applicant;
    - (2) Business or residence address of applicant;
    - (3) Name, address and telephone number of the owner of the property of record in the office of the assessor of property;

- (4) Address and legal description of subject property including the tax reference number and parcel number of the subject property;
  - (5) Name, address and telephone number of the contractor and any subcontractor(s) who shall perform the land disturbing activity and who shall implement the erosion and sediment control plan;
  - (6) A statement indicating the nature, extent and purpose of the land disturbing activity including the size of the area for which the permit shall be applicable and a schedule for the starting and completion dates of the land disturbing activity.
  - (7) Where the property includes a sinkhole, the applicant shall obtain from the Tennessee Department of Environment and Conservation appropriate permits.
  - (8) The applicant shall obtain from any other state or federal agency any other appropriate environmental permits that pertain to the property. However, the inclusion of those permits in the application shall not foreclose the \_\_\_\_\_  
**(stormwater utility)** from imposing additional development requirements and conditions, commensurate with this ordinance, on the development of property covered by those permits.
- (b) Each application shall be accompanied by: (1) a sediment and erosion control plan as described in §5(5).

- (2) A stormwater management plan as described in §5(4), providing for stormwater management during the land disturbing activity and after the activity has been completed.
  - (3) Each application for a land disturbance permit shall be accompanied by payment of land disturbance permit and other stormwater management fees, which shall be set by resolution or ordinance.
- (5). Review and approval of application.
- (a) The \_\_\_\_\_ (**stormwater utility**) will review each application for a land disturbance permit to determine its conformance with the provisions of this ordinance. Within \_\_\_\_ days after receiving an application, the \_\_\_\_\_ (**stormwater utility**) shall provide one of the following responses in writing:
    - (1) Approval of the permit application;
    - (2) Approval of the permit application, subject to such reasonable conditions as may be necessary to secure substantially the objectives of this ordinance, and issue the permit subject to these conditions; or
    - (3) Denial of the permit application, indicating the reason(s) for the denial.
  - (b) If the \_\_\_\_\_ (**stormwater utility**) has granted conditional approval of the permit, the applicant shall submit a revised plan that conforms to the conditions established by the \_\_\_\_\_ (**stormwater utility**). However, the applicant shall be allowed to proceed with his land disturbing activity

so long as it conforms to conditions established by the \_\_\_\_\_  
**(stormwater utility).**

(c) No development plans will be released until the land disturbance permit has been approved.

(6). Permit duration.

Every land disturbance permit shall expire and become null and void if substantial work authorized by such permit has not commenced within one hundred eighty (180) calendar days of issuance, or is not complete within eighteen (18) months from the date of the commencement of construction.

(7). Notice of construction.

The applicant must notify the \_\_\_\_\_ **(stormwater utility)** ten (10) working days in advance of the commencement of construction. Regular inspections of the stormwater management system construction shall be conducted by the \_\_\_\_\_ **(stormwater utility)**. All inspections shall be documented and written reports prepared that contain the following information:

- (1) The date and location of the inspection;
- (2) Whether construction is in compliance with the approved stormwater management plan;
- (3) Variations from the approved construction specifications;
- (4) Any violations that exist.

(8). Performance bonds.

- (a) The \_\_\_\_\_ (**stormwater utility**) may, at its discretion, require the submittal of a performance security or performance bond prior to issuance of a permit in order to ensure that the stormwater practices are installed by the permit holder as required by the approved stormwater management plan. The amount of the installation performance security or performance bond shall be the total estimated construction cost of the structural BMPs approved under the permit plus any reasonably foreseeable additional related costs, e.g., for damages or enforcement. [Or plus a certain percentage of the total estimated costs.] The performance security shall contain forfeiture provisions for failure to complete work specified in the stormwater management plan. The applicant shall provide an itemized construction cost estimate complete with unit prices which shall be subject to acceptance, amendment or rejection by the \_\_\_\_\_ (**stormwater utility**). Alternatively the \_\_\_\_\_ (**stormwater utility**) shall have the right to calculate the cost of construction cost estimates.
- (b) The performance security or performance bond shall be released in full only upon submission of as-built plans and written certification by a registered professional engineer licensed to practice in Tennessee that the structural BMP has been installed in accordance with the approved plan and other applicable provisions of this ordinance. The \_\_\_\_\_ (**stormwater utility**) will make a final inspection of the structural BMP to ensure that it is in compliance with the approved plan and the provisions of this ordinance. Provisions for a partial pro-

rata release of the performance security or performance bond based on the completion of various development stages can be made at the discretion of the \_\_\_\_\_ (**stormwater utility**).

**Section 4. Waivers.** (1). General. Every applicant shall provide for stormwater management as required by this ordinance, unless a written request is filed to waive this requirement. Requests to waive the stormwater management plan requirements shall be submitted to the \_\_\_\_\_ (**stormwater utility**) for approval.

(2). Conditions for waiver. The minimum requirements for stormwater management may be waived in whole or in part upon written request of the applicant, provided that at least one of the following conditions applies:

- (a) It can be demonstrated that the proposed development is not likely to impair attainment of the objectives of this ordinance.
- (b) Alternative minimum requirements for on-site management of stormwater discharges have been established in a stormwater management plan that has been approved by the \_\_\_\_\_ (**stormwater utility**).
- (c) Provisions are made to manage stormwater by an off-site facility. The off-site facility must be in place and designed to provide the level of stormwater control that is equal to or greater than that which would be afforded by on-site practices. Further, the facility must be operated and maintained by an entity that is legally obligated to continue the operation and maintenance of the facility.

- (3). Downstream damage, etc. prohibited. In order to receive a waiver, the applicant must demonstrate to the satisfaction of the \_\_\_\_\_ (**stormwater utility**) that the waiver 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.
- (4). Land disturbance permit not to be issued where waiver requested. No land disturbance permit shall be issued where a waiver has been requested until the waiver is granted. If no waiver is granted, the plans must be resubmitted with a stormwater management plan.

**Section 5. Stormwater system design and management standards.** (1) Stormwater design or BMP manual.

- (a) Adoption. The municipality adopts as its stormwater design and best management practices (BMP) manual the following publications, which are incorporated by reference in this ordinance as is fully set out herein:
  - (1) TDEC Sediment and Erosion Control Manual
  - (2) TDEC Manual for Post Construction

[NOTE: The municipality has great latitude with respect to the BMP manuals that it wishes to adopt. The above manuals are recommended but are not mandatory.]

- (b) This manual includes a list of acceptable BMPs including the specific design performance criteria and operation and maintenance requirements for each stormwater practice. The manual may be updated and expanded from time to time, at the discretion of the governing body of the municipality, upon the

recommendation of the \_\_\_\_\_ (**stormwater utility**), based on improvements in engineering, science, monitory and local maintenance experience.

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). General performance criteria for stormwater management. Unless granted a waiver or judged by the \_\_\_\_\_ (**stormwater utility**) to be exempt, the following performance criteria shall be addressed for stormwater management at all sites:

- (a) All site designs shall control the peak flow rates of stormwater discharge associated with design storms specified in this ordinance or in the BMP manual and reduce the generation of post construction stormwater runoff to pre-construction levels. These practices should seek to utilize pervious areas for stormwater treatment and to infiltrate stormwater runoff from driveways, sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity.
- (b) To protect stream channels from degradation, specific channel protection criteria shall be provided as prescribed in the 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 BMPs and pollution prevention practices.
  - (e) Prior to or during the site design process, applicants for land disturbance permits shall consult with the \_\_\_\_\_ (**stormwater utility**) to determine if they are subject to additional stormwater design requirements.
  - (f) The calculations for determining peak flows as found in the BMP manual shall be used for sizing all stormwater facilities.
- (3). Minimum control requirements.
- (a) Stormwater designs shall meet the multi-stage storm frequency storage requirements as identified in the BMP manual unless the \_\_\_\_\_ (**stormwater utility**) has granted the applicant a full or partial waiver for a particular BMP under § 4.
  - (b) If hydrologic or topographic conditions warrant greater control than that provided by the minimum control requirements, the \_\_\_\_\_ (**stormwater utility**) may impose any and all additional requirements deemed necessary to control the volume, timing, and rate of runoff.
- (4). Stormwater management plan requirements. The stormwater management plan shall include sufficient information to allow the \_\_\_\_\_ (**stormwater utility**) 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: A 1" = \_\_\_\_\_ topographic base map of the site which extends a minimum of \_\_\_ feet beyond the limits of the proposed development and indicates:
  - (1) 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;
  - (2) Current land use including all existing structures, locations of utilities, roads, and easements;
  - (3) All other existing significant natural and artificial features;
  - (4) 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;
  - (5) Proposed structural BMPs;
  - (6) A written description of the site plan and justification of proposed changes in natural conditions may also be required.
- (b) Calculations: Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in the BMP manual. These calculations must show that the proposed stormwater management measures are capable of controlling runoff from the site in compliance

with this ordinance and the guidelines of the BMP manual. Such calculations shall include:

- (1) A description of the design storm frequency, duration, and intensity where applicable;
  - (2) Time of concentration;
  - (3) Soil curve numbers or runoff coefficients including assumed soil moisture conditions;
  - (4) Peak runoff rates and total runoff volumes for each watershed area;
  - (5) Infiltration rates, where applicable;
  - (6) Culvert, stormwater sewer, ditch and/or other stormwater conveyance capacities;
  - (7) Flow velocities;
  - (8) Data on the increase in rate and volume of runoff for the design storms referenced in the BMP manual; and
  - (9) Documentation of sources for all computation methods and field test results.
- (c) 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.

- (d) **Maintenance and Repair Plan:** The design and planning of all 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. A permanent elevation benchmark shall be identified in the plans to assist in the periodic inspection of the facility.
- (e) **Landscaping Plan:** The applicant must present a detailed plan for management of vegetation at the site after construction is finished, including 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. Where it is required by the BMP, this plan must be prepared by a registered landscape architect licensed in Tennessee.
- (f) **Maintenance Easements:** The applicant must ensure access to the site for the purpose of inspection and repair by securing all the maintenance easements needed. These easements must be binding on the current property owner and all subsequent owners of the property and must be properly recorded in the land record.

(g) Maintenance Agreement:

(1) The owner of property to be served by an on-site stormwater management facility must execute an inspection and maintenance agreement that shall operate as a deed restriction binding on the current property owner and all subsequent property owners.

(2) The maintenance agreement shall:

(a) Assign responsibility for the maintenance and repair of the stormwater facility to the owner of the property upon which the facility is located and be recorded as such on the plat for the property by appropriate notation.

(b) Provide for a periodic inspection by the property owner for the purpose of documenting maintenance and repair needs and ensure compliance with the purpose and requirements of this ordinance. The property owner 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 sealed report of the inspection to the

\_\_\_\_\_ (**stormwater utility**). 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.

- (c) 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, grass cuttings 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 owner shall be responsible for additional maintenance and repair needs consistent with the needs and standards outlined in the BMP manual.
  - (d) Provide that maintenance needs must be addressed in a timely manner, on a schedule to be determined by the \_\_\_\_\_ (**stormwater utility**).
  - (e) Provide that if the property is not maintained or repaired within the prescribed schedule, the \_\_\_\_\_ (**stormwater utility**) 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 \_\_\_\_\_ stormwater utility's cost of performing the maintenance shall be a lien against the property.
- (3) The municipality shall have the discretion to accept the dedication of any existing or future stormwater management facility, provided such facility

meets the requirements of this ordinance, and includes adequate and perpetual access and sufficient areas, by easement or otherwise, for inspection and regular maintenance. Any stormwater facility accepted by the municipality must also meet the municipality's construction standards and any other standards and specifications that apply to the particular stormwater facility in question.

(h) Sediment and Erosion Control Plans: The applicant must prepare a sediment and erosion control plan for all construction activities that complies with §5(5) below.

(5). Sediment and erosion control plan requirements. The sediment and erosion control plan 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. The plan shall be sealed by a registered professional engineer licensed in the state of Tennessee. The plan shall also conform to the requirements found in the 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 five (5) 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) 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 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 rock pads, wash down pads, and settling 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 \_\_\_\_\_ (**stormwater utility**). Soil, sediment, and debris brought onto streets and public ways must be removed by the end of the work day by

machine, broom or shovel to the satisfaction of the \_\_\_\_\_

**(stormwater utility)**. Failure to remove the sediment, soil or debris shall be deemed a violation of this ordinance.

(p) Proposed structures; location (to the extent possible) 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 infiltration.

**Section 6. Post Construction.** (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 \_\_\_\_\_ **(stormwater utility)** is required before any performance security or performance bond will be released. The \_\_\_\_\_ **(stormwater utility)** 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 \_\_\_\_\_ **(stormwater utility)**.

(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 be revegetated according to a schedule approved by the \_\_\_\_\_ **(stormwater utility)**. The following criteria shall apply to revegetation efforts:

- (1) 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.
  - (2) 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.
  - (3) 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.
- (b) 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 as provided for in §5(4)(g)(2)(b).

- (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 \_\_\_ years. These records shall be made available to the \_\_\_\_\_ (**stormwater utility**) 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 ordinance, the \_\_\_\_\_ (**stormwater utility**), 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 \_\_\_\_\_ (**stormwater utility**) shall notify in writing the party responsible for maintenance of the stormwater management facility. Upon receipt of that notice, the responsible person shall have \_\_\_ 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 \_\_\_\_\_ (**stormwater utility**) may take necessary corrective action. The cost of any action by the \_\_\_\_\_ (**stormwater utility**) under this section shall be charged to the responsible party.

**Section 7. Existing locations and developments.** (1). Requirements for all existing locations and 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 the BMP manual and on a schedule acceptable to the \_\_\_\_\_ **(stormwater utility)**.
- (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-rapp, channel lining, etc., to prevent erosion.
- (d) Trash, junk, rubbish, etc. shall be cleared from drainage ways.
- (e) Stormwater runoff shall be controlled to the extent reasonable to prevent pollution of local waters. Such control measures may include, but are not limited to, the following:
  - (1) Ponds
    - (a) Detention pond
    - (b) Extended detention pond
    - (c) Wet pond
    - (d) Alternative storage measures
  - (2) Constructed wetlands
  - (3) Infiltration systems
    - (a) Infiltration/percolation trench
    - (b) Infiltration basin
    - (c) Drainage (recharge) well
    - (d) Porous pavement

- (4) Filtering systems
  - (a) Catch basin inserts/media filter
  - (b) Sand filter
  - (c) Filter/absorption bed
  - (d) Filter and buffer strips
- (5) Open channel
  - (a) swale

(2). Requirements for existing problem locations. The \_\_\_\_\_ (**stormwater utility**) shall in writing notify the owners of existing locations and developments of specific drainage, erosion or sediment problem affecting such locations and developments, and the specific actions required to correct those problems. The notice shall also specify a reasonable time for compliance.

(3). Inspection of existing facilities. The \_\_\_\_\_ (**stormwater utility**) may, to the extent authorized by state and federal law, establish inspection programs to verify that all stormwater management facilities, including those built before as well as after the adoption of this ordinance, 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 municipality'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 BMPs.

- (4). Corrections of problems subject to appeal. Corrective measures imposed by the stormwater utility under this section are subject to appeal under § 11 of this ordinance.

**Section 8. Illicit discharges.** (1). Scope. This section shall apply to all water generated on developed or undeveloped land entering the municipality'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. 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:
- (1) Water line flushing or other potable water sources,
  - (2) Landscape irrigation or lawn watering with potable water,
  - (3) Diverted stream flows,
  - (4) Rising ground water,
  - (5) Groundwater infiltration to storm drains,
  - (6) Pumped groundwater,
  - (7) Foundation or footing drains,

- (8) Crawl space pumps,
  - (9) Air conditioning condensation,
  - (10) Springs,
  - (11) Non-commercial washing of vehicles,
  - (12) Natural riparian habitat or wet-land flows,
  - (13) Swimming pools (if dechlorinated - typically less than one PPM chlorine),
  - (14) Fire fighting activities, and
  - (15) Any other uncontaminated water source.
- (b) Discharges specified in writing by the \_\_\_\_\_ (**stormwater utility**) as being necessary to protect public health and safety.
  - (c) Dye testing is an allowable discharge if the \_\_\_\_\_ (**stormwater utility**) has so specified in writing.
- (3). Prohibition of illicit connections.
- (a) The construction, use, maintenance or continued existence of illicit connections to the separate municipal storm sewer system is prohibited.
  - (b) 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 compliance with the provisions of this section.

- (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 stormwater, 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 \_\_\_\_\_ (**stormwater utility**) in person or by telephone or facsimile no later than the next business day. Notifications in person or by telephone shall be confirmed by written notice addressed and mailed to the \_\_\_\_\_ (**stormwater utility**) 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 \_\_\_\_\_ years.

## Section 9. Enforcement

- (1). Enforcement authority. The director of the \_\_\_\_\_ (**stormwater utility**) or his designees shall have the authority to issue notices of violation and citations, and to impose the civil penalties provided in this section.
- (2). Notification of violation.
  - (a) Written Notice. Whenever the director of the \_\_\_\_\_ (**stormwater utility**) 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 may serve upon such person written notice of the violation. Within ten (10) days of this 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. 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.
  - (b) Consent Orders. The director 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.

- (c) Show Cause Hearing. The director may order any person who violates this ordinance 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.
- (d) Compliance Order. When the director finds that any person has violated or continues to violate this ordinance or a permit or order issued thereunder, he may issue an order to the violator directing that, following a specific time period, adequate structures, devices, be installed 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 structures, installation of devices, self-monitoring, and management practices.
- (e) Cease and Desist Orders. When the director finds that any person has violated or continues to violate this ordinance or any permit or order issued hereunder, the director may issue an order to cease and desist all such violations and direct those persons in noncompliance to:
- (1) Comply forthwith; or

(2) Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations and terminating the discharge.

(3). Conflicting standards. Whenever there is a conflict between any standard contained in this ordinance and in the BMP manual adopted by the municipality under this ordinance, the strictest standard shall prevail.

**Section 10. Penalties.** (1). Violations. Any person who shall commit any act declared unlawful under this ordinance, who violates any provision of this ordinance, who violates the provisions of any permit issued pursuant to this ordinance, or who fails or refuses to comply with any lawful communication or notice to abate or take corrective action by the \_\_\_\_\_ (**stormwater utility**), shall be guilty of a civil offense.

(2). Penalties. Under the authority provided in Tennessee Code Annotated §68-221-1106, the municipality declares that any person violating the provisions of this ordinance may be assessed a civil penalty by the \_\_\_\_\_ (**stormwater utility**) 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.

[NOTE: In City of Chattanooga v. Davis, 54 S.W. 3d 248 (Tenn. 2001), the Tennessee Supreme Court held that municipal civil penalties or fines in excess of \$50 violate Article VI, § 14, of the Tennessee Constitution, if their purpose is punitive rather than remedial. Article VI, § 14 of the Tennessee Constitution provides that, “No fine shall be laid on any citizen of this state that shall exceed Fifty Dollars, unless it shall be assessed by a jury of his peers....” The determination of whether a civil penalty or fine is punitive or remedial is determined on a case by case basis by a “totality of circumstances.” The distinction between punitive and a remedial civil penalties or fines is so difficult to draw that as a practical matter, most municipal courts are not asked to levy, or do not levy, civil penalties or fines of over \$50.

However, it is questionable whether City of Chattanooga v. Davis applies to administrative penalties that exceed \$50. The Chancery Court for Davidson County in Dickson v. State, No. 00-2823-1, filed December 5, 2001, held that the answer was no with respect to two fines totaling \$15,000 levied by the Tennessee Petroleum Underground Storage Tank Board Petroleum Tank Storage Board. It reasoned that Davis applied only to civil penalties levied by a court, and that an administrative agency is not a court. Tennessee Code Annotated, § 68-221-1106 appears to contemplate that the civil penalty for stormwater ordinance violations be levied by a municipal official or entity rather than a court.]

(3). Measuring civil penalties. In assessing a civil penalty, the director of the

\_\_\_\_\_ (**stormwater utility**) may consider:

- (a) The harm done to the public health or the environment;
- (b) Whether the civil penalty imposed will be a substantial economic deterrent to the illegal activity;
- (c) The economic benefit gained by the violator;
- (d) The amount of effort put forth by the violator to remedy this violation;
- (e) Any unusual or extraordinary enforcement costs incurred by the municipality;
- (f) The amount of penalty established by ordinance or resolution for specific categories of violations; and
- (g) 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 municipality may recover; (a) all damages proximately caused by the violator to the

municipality, which may include any reasonable expenses incurred in investigating violations of, and enforcing compliance with, this ordinance, or any other actual damages caused by the violation.

(b) The costs of the municipality's maintenance of stormwater facilities when the user of such facilities fails to maintain them as required by this ordinance.

(5). Other remedies. The municipality may bring legal action to enjoin the continuing violation of this ordinance, and the existence of any other remedy, at law or equity, shall be no defense to any such actions.

(6). 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.

**Section 11. Appeals.** 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 ordinance may appeal said penalty or damage assessment to the municipality's governing body.

(1). 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.

(2). Public hearing. Upon receipt of an appeal, the municipality's governing body 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 governing body of the municipality shall be final.

- (3). Appealing decisions of the municipality's governing body. Any alleged violator may appeal a decision of the municipality's governing body pursuant to the provisions of Tennessee Code Annotated, title 27, chapter 8.