ORDINANCE NO. 1296

AN ORDINANCE TO AMEND THE CITY OF DICKSON MUNICIPAL CODE BY ADDING CHAPTER 8, STORMWATER MANAGEMENT, TO TITLE 12, BUILDING, UTILITY, ETC. CODES

CHAPTER 8

STORM WATER MANAGEMENT

SECTION

12-801 General Provisions.

(1) Findings of Fact

A. It is hereby determined that:

i. Land development projects and associated increases in impervious cover alter the hydrologic response of local watersheds and increase storm water runoff rates and volumes, flooding, stream channel erosion, and sediment transport and deposition unless mitigated by appropriate measures; this storm water runoff contributes to increased quantities of water-borne pollutants, and; storm water runoff, soil erosion and non-point source pollution can be controlled

and minimized through the regulation of storm water runoff from development sites.

ii. The City of Dickson has been designated as an MS4 by the Tennessee Department of Environment and Conservation. As such, the City operates its storm water program under the provisions contained in TNR8000000 – NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems. All developments within the City of Dickson shall comply with the mandatory provisions contained in that document.

iii. Therefore, the City of Dickson establishes this set of water quality and quantity policies applicable to all surface waters to provide reasonable guidance for the regulation of storm water runoff for the purpose of protecting local water resources from degradation. It is determined that the regulation of storm water runoff discharges from land development projects and other construction activities in order to control and minimize increases in storm water runoff rates and volumes, soil erosion, stream channel erosion, and non-point source pollution associated with storm water runoff is in the public interest and will prevent threats to public health and safety.

(2) Purpose

A. The purpose of this ordinance is to establish minimum storm water management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing in watersheds within this jurisdiction. This ordinance seeks to meet that purpose through the following objectives:

i. minimize increases in storm water runoff from any development in order to reduce flooding, siltation, increases in stream temperature, and stream bank erosion and maintain the integrity of stream channels;

ii. minimize increases in non-point source pollution caused by storm water runoff from development which would otherwise degrade local water quality;

iii. minimize the total annual volume of surface water runoff which flows from any specific site during and following development to not exceed the pre-development hydrologic regime to the maximum extent practical.

iv. reduce storm water runoff rates and volumes, soil erosion and non-point source pollution, wherever possible, through storm water

management controls and to ensure that these management controls are properly maintained and pose no threat to public safety.

(3) Applicability

A. This ordinance shall be applicable to all subdivision or site plan applications, unless eligible for an exemption or granted a waiver by the City of Dickson Planning Commission under the specifications of this ordinance. The ordinance also applies to land development activities that are smaller than the minimum applicability criteria if such activities are part of a larger common plan of development that meets the following applicability criteria, even though multiple separate and distinct land development activities may take place at different times on different schedules. In addition, all plans must also be reviewed by local officials to ensure that established water quality standards will be maintained during and after development of the site and that post construction runoff levels are consistent with any local and regional watershed plans.

B. To prevent the adverse impacts of storm water runoff, the City of Dickson has developed a set of performance standards that must be met at new development sites and re-development sites. These standards apply to any construction activity disturbing 10,000 or more square feet of land or adding 10,000 square feet of impervious area. The minimum disturbed area criterion may not apply if the development is part of a larger plan of development such as a lot in a residential, commercial or industrial development. In that instance, the proposed development shall be required to comply with these regulations in accordance with the requirements of the City's obligations as an MS4 under the regulations of the State of Tennessee. The following activities may be exempt from these storm water performance criteria:

i. Any logging and agricultural activity which is consistent with an approved soil conservation plan or a timber management plan prepared and approved, as applicable.

ii. Additions or modifications to existing single family structures.

iii. Developments that do not disturb more than 10,000 square feet of land, provided they are not part of a larger common development plan. The Codes Official shall have discretion in applying this exemption.

iv. Repairs to any storm water treatment practice deemed necessary by the City of Dickson. The City of Dickson Director of Planning, Zoning & Codes shall have the authority to make determinations regarding exemptions under these criteria. The applicant shall have the usual rights of appeal under City Regulations. The first avenue of appeal is to the City Planning Commission.

C. When a site development plan is submitted that qualifies as a redevelopment project as defined in this ordinance, decisions on permitting and on-site storm water requirements shall be governed by storm water sizing criteria developed through standards of engineering practice appropriate to local design storms. This criterion is dependent on the amount of impervious area created by the redevelopment and its impact on water quantity and quality. Final authorization of all redevelopment projects will be determined after a review by the City of Dickson.

(4) Compatibility with Other Permit and Ordinance Requirements

A. This ordinance is not intended to interfere with, abrogate, or annul any other ordinance, rule or regulation, statute, or other provision of local, state or federal law. The requirements of this ordinance should be considered minimum requirements, and where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall be considered to take precedence.

(5) Severability

A. If the provisions of any article, section, subsection, paragraph, subdivision or clause of this ordinance shall be judged invalid by a court of competent jurisdiction, such order of judgment shall not affect or invalidate the remainder of any article, section, subsection, paragraph, subdivision or clause of this ordinance.

(6) Development of a Storm Water Design Manual

A. The City of Dickson may furnish additional policy, criteria and information including specifications and standards, for the proper implementation of the requirements of this ordinance and may provide such information in the form of a Storm Water Design Manual. This manual may include a list of acceptable storm water treatment practices, including the specific design criteria and operation and maintenance

requirements for each storm water practice. The manual may be updated and expanded from time to time, at the discretion of the local authority, based on improvements in engineering, science, monitoring and local maintenance experience. Storm water treatment practices that are designed and constructed in accordance with these design and sizing criteria will be presumed to meet the minimum water quality performance standards. In the absence of a Storm Water Design Manual, designers may propose treatment methods that provide 80% total suspended solids (TSS) and 40% phosphorus removal of post construction storm water runoff. Additionally, each site shall have management practices that detain the first one-inch of rainfall runoff on site through the use of infiltration, evaporation or other acceptable means. Measures shall be capable of treating two subsequent storms separated by 72-hours. Proposals for construction phase storm water controls shall comply with criteria contained in this ordinance, or with State and Federal criteria, the more stringent requirement being applicable. Proposed designs shall be submitted for review and shall have all supporting calculations and documentation necessary to evaluate the proposal.

(7) References

A. TNS000000, NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems, effective October 1, 2010, and subsequent editions.
B. TNR100000, General NPDES Permit for Discharges of Stormwater Associated with Construction Activities, effective edition.
C. Section 402 of the Clean Water Act.
D. Current 303d List of Impaired Waters in Tennessee
E. Division of Water Pollution Control Standard Operating Procedure Aquatic Resource Alteration Permit.
F. Rules of the Tennessee Department of Environment and Conservation, Chapter 1200-4-3-06, "Tennessee Antidegradation Statement"
G. 44 CFR Chapter 1 – Federal Emergency Management Agency
H. Perceived conflicts between these references and this ordinance shall be resolved by, and at the discretion of, the City of Dickson.

12-802 Definitions.

"Accelerated Erosion" means erosion caused by development activities that exceeds the natural processes by which the surface of the land is worn away by the action of water, wind, or chemical action.

"Applicant" means a property owner or agent of a property owner who has filed an application for a storm water management permit.

"Best Management Practice (BMP)" - Structural device, measure, facility or activity that helps to achieve storm water management control objectives at a designated site.

"Building" means any structure, either temporary or permanent, having walls and a roof, designed for the shelter of any person, animal, or property, and occupying more than 100 square feet of area.

"Building Official" means the Director of the City of Dickson Planning, Zoning and Codes Department as designated by the City of Dickson. The Building Official may also perform the duties of the Stormwater Coordinator if directed.

"Channel" means a natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

"**Community Waters**" 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 man-made, lying within or forming part of the boundaries of the City of Dickson.

"**Contaminant**" means any physical, chemical, biological or radiological substance or matter.

"Dedication" means the deliberate appropriation of property by its owner for general public use.

"Design Storm" means the storm for which the storm water facility is designed. For the purposes of storm water quantity detention the design storm is the 25-year, 24-hour storm. For the purposes of storm water quality, the design storm is the storm which produces one-inch of runoff from the proposed development. This is not to be misconstrued as a one-inch rainfall, but should be understood to be the storm, of whatever total depth, that produces one-inch of runoff.

"**Detention**" means the temporary storage of storm runoff in a storm water management practice with the goals of controlling peak discharge rates and providing gravity settling of pollutants.

"Detention Facility" means a detention basin or alternative structure designed by a licensed professional for the purpose of temporary storage of stream flow or surface runoff and gradual release of stored water at controlled rates.

"Developer" means a person who undertakes land disturbance activities.

"**Discharge**" means any substance disposed, deposited, spilled, poured, injected, seeped, dumped, leaked, or placed by any means, intentionally or unintentionally, into community waters, the waters of the state, the waters of the United States, or any area draining directly or indirectly into the municipal storm water system of the City of Dickson.

"Drainage Easement" means a legal right granted by a landowner to a grantee allowing the use of private land for storm water management purposes. Drainage easements must be recorded prior to approval of construction plans and start of construction.

"Erosion Prevention and Sediment Control (EPSC) Plan" means a plan that is designed by a licensed professional to minimize the accelerated erosion and sediment runoff at a site during construction activities. For the purposes of this regulation, professionals authorized to develop EPSC plans are those allowed by the State of Tennessee.

"**Hotspot**" means an area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in storm water.

"**Hydrologic Soil Group (HSG)**" means a Natural Resource Conservation Service classification system in which soils are categorized into four runoff potential groups. The groups range from A soils, with high permeability and little runoff production, to D soils, which have low permeability rates and produce much more runoff.

"Illicit Discharge" means any substance discharged into the storm water facilities of the City of Dickson, or waters of the U.S., that is either prohibited or not specifically permitted under Section 12-803 of this ordinance.

"**Impervious Cover**" means those surfaces that cannot effectively infiltrate rainfall (e.g., building rooftops, pavement, sidewalks, driveways, etc).

"**Industrial Storm Water Permit**" means an National Pollutant Discharge Elimination System permit issued to a commercial industry or group of industries which regulates the pollutant levels associated with industrial storm water discharges or specifies on-site pollution control strategies.

"**Infiltration**" means the process of percolating storm water into the subsoil.

"**Infiltration Facility**" means any structure or device designed to infiltrate retained water to the subsurface. These facilities may be above grade or below grade.

"**Jurisdictional Wetland**" means an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation, and meets all three criteria for designation as a wetland.

"Land Disturbance Activity" means any activity which alters the surface characteristics of the ground or changes the volume or peak flow discharge rate of rainfall runoff from the land surface. This may include the grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction, substantial removal of vegetation, construction of buildings, or any activity which bares soil or rock or involves the diversion or piping of any natural or man-made watercourse.

"Landowner" means the legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land.

"**Maintenance Agreement**" means a legally recorded document that acts as a property deed restriction, and which provides for long-term maintenance of storm water management practices. All developments within the City of Dickson shall have in place agreements or restrictive covenants that require the beneficial owners or users of the development to maintain storm water facilities that regulate the discharge of storm water or treat storm water. The City of Dickson shall not be named as the maintenance agency for storm water detention or treatment facilities.

"**Municipal Separate Storm Sewer System (MS4) of the City of Dickson**" means a conveyance, or system of conveyances (including roads with drainage systems, city streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains) designed or used for collecting and conveying storm water; provided, however that sanitary and combined sewers are not included in the definition of the municipal separate storm sewer system.

"**Non-Point Source Pollution"** means pollution from any source other than from any discernible, confined, and discrete conveyances, and shall include, but not be limited to, pollutants from agricultural, silvicultural, mining, construction, subsurface disposal and urban runoff sources.

"**Non-Storm Water Discharge**" means any discharge to the municipal separate storm sewer system except as permitted by this ordinance.

"Off-Site Facility" means a storm water management measure located outside the subject property boundary described in the permit application for land development activity. Agreements, easements and maintenance agreements shall be in place before a development is considered for approval.

"On-Site Facility" means a storm water management measure located within the subject property boundary described in the permit application for land development activity.

"Recharge" means the replenishment of underground water reserves.

"**Redevelopment**" means any construction, alteration or improvement exceeding 10,000 square feet in areas where existing land use is high density commercial, industrial, institutional or multi-family residential, or the demolition of existing site features for the purpose of constructing new site features.

"**Responsible Official**" means the Mayor of the City of Dickson, or his designee.

"Stop Work Order" means an order issued which requires that all construction activity on a site be stopped until the conditions of the stop work order have been satisfied and approved by the Building Official.

"Storm Water Committee" means the panel appointed by the City of Dickson to hear storm water issues, and empowered by the City of Dickson to make rulings in matters brought before the committee, or to make recommendations to the Planning Commission and City Council, as applicable.

"Storm Water Coordinator" means the City official tasked with the day-to-day management of the storm water program. The duties of this office may be assigned to the Building Official, or may be assigned to personnel reporting to the Building Official.

"Storm Water Management" means the use of structural or non-structural practices that are designed to reduce storm water runoff pollutant loads, discharge volumes, peak flow discharge rates and detrimental changes in stream temperature that affect water quality and habitat.

Storm Water Management Plan (SWMP) - A document approved at the site design phase that outlines the measures and practices used to control storm water runoff at a site.

Storm Water Pollution Prevention Plan (SWPPP) - A document prepared during the design phase that outlines the measures and practices used to prevent storm water pollution during the construction phase of the project.

"Storm Water Retrofit" means a storm water management practice designed for an existing development site that previously had either no storm water

management practice in place or a practice inadequate to meet the storm water management requirements of the site.

"**Storm Water Runoff**" means flow on the surface of the ground, or collected in natural or manmade channels, resulting from precipitation.

"**Storm Water Treatment Practices (STPs)**" means measures, either structural or nonstructural, that are determined to be the most effective, practical means of preventing or reducing point source or non-point source pollution inputs to storm water runoff and water bodies.

"Stream Buffer Zone" means the area adjacent to the stream bank, measured perpendicular to the bank, intended to remain undisturbed by development, logging, underbrushing or other land disturbance activities. In the City of Dickson, the stream buffer zone extends 25 feet from each bank of all streams, unless the requirements imposed by the Tennessee Department of Environment and Conservation call for larger zones for an individual stream.

"Watercourse" means a permanent or intermittent stream or other body of water, either natural or man-made, which gathers or carries surface water. For the purposes of this ordinance, the assumption is made that any natural watercourse that conveys flow for any duration during any frequency storm is classified as a stream unless otherwise classified in writing by the Tennessee Department of Environment and Conservation.

"**Water Quality Volume (WQ_v)**" means the storage needed to capture and treat 90% of the average annual storm water runoff volume. Numerically **(WQ_v)** will vary as a function of long term rainfall statistical data.

"**Waters of the State**" means any water, surface or underground, lying within or forming a part of the boundaries of the City of Dickson, over which the State of Tennessee, through the Tennessee Department of Environment and Conservation, exercises primary control with respect to storm water permits.

12-802 Illicit Discharges.

(1) Except as hereinafter provided, all non-storm water discharges into community waters, the waters of the state, or the municipal separate storm sewer system of the City of Dickson are prohibited and declared to be unlawful.

(2) Unless the Responsible Official has identified them as a source of contaminants to community waters, the waters of the state, or the municipal separate storm sewer system of the City of Dickson, the following discharges are permitted:

A. Storm water as defined in TCA Section 68-221-1102(5);

B. Water line flushing;
C. Landscape irrigation;
D. Diverted stream flows under appropriate permits;
E. Rising ground waters;
F. Uncontaminated groundwater infiltration (as defined in 40 CFR 35.2005(20)) to separate storm sewers;
G. Uncontaminated pumped groundwater;
H. Discharges from potable water sources;
I. Foundation drains;
J. Air conditioner condensate;
K. Irrigation water;
L. Springs;
M. Water from crawlspace pumps;
N. Footing drains;
O. Lawn watering;
P. Individual residential car washing;
Q. Flows from riparian habitats and wetlands;
R. Dechlorinated swimming pool discharges;
S. Street wash waters resulting from normal street cleaning operations;
T. Discharges or flows from emergency fire fighting activities.

(3) The Responsible Official shall have authority to implement this section by appropriate regulations. Such regulations may include, but are not limited to, provisions for inspection of points of origin of known or suspected non-permitted discharges by appropriate personnel of the City of Dickson.

(4) Discharges pursuant to a valid and effective NPDES permit issued by the State of Tennessee are not prohibited by this section.

(5) The provisions of this section shall not apply to sanitary or combined sewers, which are governed by other statutes.

(6) Violation of this section shall subject the violator to a civil penalty of not less than fifty dollars per day for each violation. Penalties may be assessed up to the maximum allowed under TCA 68-221-1106. Each day of violation may constitute a separate violation.

12-804. General Drainage.

(1) Storm water discharges shall be separate from the sanitary sewer system. Cross connection between the storm sewer system and sanitary sewer shall be prohibited.

(2) All surface water drainage facilities, whether by pipe or open ditch, shall be approved by the Building Official or his designee.
(3) All work performed by the City of Dickson to accommodate storm water drainage shall be confined to a dedicated drainage easement, which conforms to the lines of such water course and shall be of adequate width.
(4) All culverts or other structures to be constructed to provide storm water drainage shall be approved by the Building Official.
(5) All drainage culverts or structures, whether installed by the City of Dickson or by private forces, shall be at the expense of the property owner.
(6) The size of all drainage culverts or structures shall be approved by the Building Official.
(7) The designer shall submit a completed Hydrologic & Hydraulic Check List to the Building Official.
(8) All constructed storm water facilities that are intended to be dedicated to the City of Dickson shall be within road rights-of-way or dedicated drainage easements in favor of the City of Dickson.
(9) Discharge into the 100-year floodplain shall not constitute grounds for waiver from the requirements of this ordinance.
(10) As an MS4, the City operates its storm water program under the provisions contained in TNR8000000 – NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems. All developments within the City of Dickson shall comply with the mandatory provisions contained in that document.

12-805. Storm Water Drainage Plans.

(1) Storm water drainage plans shall be prepared by an engineer licensed in the State of Tennessee and shall be based on criteria established in this ordinance. Plans are subject to approval by the Building Official. Such plans shall be prepared for each development proposal of industrial or commercial property, and shall be prepared for each residential subdivision. Storm water facilities shall be indicated on items presented before the City of Dickson Planning Commission. The plans submitted shall include a completed Hydrologic & Hydraulic Check List that provides details of design criteria and data for each storm water structure in the development. The designer shall present all hydrologic and hydraulic calculations for review, along with summary text clearly indicating the methodology used, assumptions made and bases for the assumptions, analysis and design parameters selected and rationale for selection, results and conclusions. The

submission of reams of computer output is discouraged, and submission of summary output is encouraged. Summary output should contain a written description of the site pre- and post-project conditions, tables containing coefficients used in the calculations along with the basis for selection, a side by side comparison of pre- and post-project discharges, and other information the designer or the City staff may feel necessary to adequately convey information and evaluate the proposal.

12-806. Storm Water Systems Design.

(1) Storm water systems shall be designed by an engineer licensed in the State of Tennessee.

(2) Storm water systems shall be designed as a coordinated unit and may include, but shall not be limited to, the following elements:

A. On-site detention storage.

B. Increased use of storage to balance the discharge of peak flows.

C. The use of land treatment systems for disposal of storm water.

D. Temporary ponding at various points.

E. Storm water treatment devices to meet water quality criteria.

F. Storm water treatment devices to meet the requirement to retain the first one-inch of rainfall runoff.

(3) Storm water that cannot be accommodated at the development site should be detained at a nearby location. The site shall be equipped with a controlled outlet to the receiving source with peak flow not exceeding the pre-development peak flow for the design storm. For the purpose of storm water quantity detention, the design storm shall be the 25-year, 24-hour storm.

(4) Provisions for the temporary controlled detention of storm water and its regulated discharge to the downstream system, with peak rates less than would occur without such facilities, must be included in storm water drainage systems development. These provisions shall regulate post-development peak discharges for the design storm to a rate equal to, or less than, pre-development discharges for the same storm.

12-807. Performance Criteria.

(1) The design for storm water quantity detention shall provide for detention of the twenty-five year, 24-hour storm, such that the post-development discharge is equal to, or less than, the pre-development discharge. The

calculations shall include runoff from all areas of the site, and should include any "run-on" storm water from up gradient areas. Infiltration trenches and dry wells may be included as part of the storm water detention system, provided that the design engineer presents data and calculations to support this use.

(2) Storm water ponds, whether for quantity or quality, shall have adequate capacity to contain the maximum required volume of tributary storm water runoff with one (1) foot of freeboard above the pool elevation necessary to route the 100-year storm without overtopping the structure. Adequate provisions and allowances shall be made for the accumulation and removal of silt. If the developer wishes to use the pond for permanent or temporary sediment control, the engineer shall provide a design, with supporting calculations and construction details, indicating the volume of dead storage in the pond and the expected frequency of maintenance. The pond shall also be constructed with a scale in the dead storage area that indicates depth of accumulated silt, and the plans shall indicate the depth at which dead storage is considered 80% full. Upon reaching 80% dead storage, the developer/owner shall make arrangements to remove accumulated silt from the pond.

(3) Outlet works shall be designed to limit peak outflow rates from storm water quantity detention such that the post-development discharge is equal to, or less than, the storm water discharge under pre-development conditions for the design storm.

A. Outlet works shall be designed to accommodate the discharge for the entire tributary area to prevent overtopping of the storage facility during the design storm.

B. Outlet works shall not include any mechanical components or devices and shall function without requiring attendance or control during operation.

C. Size and hydraulic characteristics of the outlet works shall be such that the storm water storage volume is evacuated within twenty-four (24) hours of the end of the design storm rainfall, unless storm water quality features are incorporated into the pond. If storm water quality is incorporated with quantity detention in a single pond, the drawdown time may be extended to forty (40) hours.

D. Outlet works shall be capable of routing the 100-year, 24-hour design storm without overtopping the containment structure (dam). An emergency spillway may be included in the design to provide this discharge capacity.

(4) Storm water detention facilities shall be designed to accept storm water runoff from the entire tributary area regardless of ownership of lands included within the tributary area, unless run-on storm water is routed around the site by acceptable means. Acceptable means shall be subject to interpretation by the City of Dickson.

(5) Emergency spillways shall be provided in order to permit safe passage of water from storms producing runoff in excess of the design storm if the service spillway does not provide capacity to pass the 100-year, 24-hour storm with 1-foot of freeboard below the crest of the containment structure. Unless the facility falls under provisions of the Tennessee Safe Dams Act, the design storm for emergency spillways shall be the one hundred (100) year (one percent annual chance exceedence) storm, taking no credit for discharges through the service spillway if it does not provide capacity to pass the storm by itself. Emergency spillways are not required for facilities with service spillways capable of passing the 100-year, 24-hour storm.

(6) Storm sewer inlets and piping shall be designed to accommodate the twenty-five (25) year storm and shall take into account all storm water runoff from the entire tributary drainage area regardless of ownership of lands within the tributary drainage area. Staged development shall be considered when calculating design flows and design calculations, inlet spacing and pipe sizes shall account for ultimate development of lands under the developer's control. The 100-year, 24-hour storm routing shall be shown on plans to determine if the development will aggravate downstream flooding. If it is determined during the City's review process that downstream flooding will be increased, the City shall require the developer to provide additional measures to prevent flooding.

(7) Roadway cross drains shall be designed to prevent overtopping of the roadway during the occurrence of the 50-year, 24-hour storm, unless the cross drain conveys a stream, which shall require design for a 100-year, 24-hour storm without overtopping the roadway. If the stream appears on a Flood Insurance Rate Map, and the project area is in a flood zone, the owner shall prepare a Conditional Letter of Map Revision, along with a "No-Impact" Certification demonstrating that the project will not increase flooding and providing base flood elevations (1% Annual Chance Exceedence Flood) in the project area. No stream crossing shall be permitted in the City of Dickson which causes flooding to any existing structure or facility.

(8) In planned growth areas within the City of Dickson, or contiguous growth areas of other jurisdictions that drain storm water through the City

of Dickson, the Building Official may require storm sewers to be designed to accommodate flows for developed conditions of properties upstream of a proposed project.

(9) Hydrologic analyses for the project shall indicate the effect of the project relative to capacities of the next two downstream hydraulic structures, up to a distance of one-mile downstream maximum. If the proposed development affects downstream drainage structures, the developer shall pay all costs associated with improvements necessitated by the proposed development, or alter the design to mitigate effects.

(10) The one hundred (100) year *(one percent annual chance exceedence)* flood routing shall be shown on all plans. The routing shall indicate flow path and flooded area, by elevation, along the routing.

(11) The design criteria for water quality shall be the storm producing one inch rainfall runoff distributed in no more than 24-hours. The practices included in the site design shall be capable of treating similar storms separated by 72-hours. This storm shall be contained on-site and shall not produce runoff leaving the site.

(12) Site storm water practices shall be designed such that there will be no discharge from the site during the occurrence of a rainfall producing the first one-inch of rainfall runoff. This may be accomplished by retention, infiltration, evaporation or other acceptable means. The practice shall be capable of treating similar storms separated by 72-hours.

(13) As an MS4, the City operates its storm water program under the provisions contained in TNR8000000 – NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems. All developments within the City of Dickson shall comply with the mandatory provisions contained in that document.

(14) Measures shall not be used that potentially bring humans into direct contact with storm water being detained or treated. The City of Dickson retains the right to make determinations in this regard.

(15) Nothing in these criteria shall release the owner or designer from the responsibility to protect the health, safety and general welfare of the public, or the responsibility to protect storm water quality at the site.

12-808. Design Data Submittal.

In addition to complete plans, the following design data shall be submitted for the Building Official's approval for all projects including detention facilities:

(1) A written narrative of the methods used and assumptions made in the analysis. The narrative shall include tables showing coefficients used, and shall provide text describing the rationale for coefficient selection. Additionally, there shall be a summary of results in which a table is used for side by side comparison of conditions prior to, and following, project construction as proposed.

(2) Calculations shall be provided in summary format. Reams of computer printout are neither required nor desired.

(3) Runoff hydrograph. A runoff hydrograph plotted in units of cubic feet per second as ordinates, and the time from the start of runoff to the return to baseflow as abscissas. The runoff hydrograph shall be developed to include all storms of lesser duration within the twenty-four (24) hour storm.

(4) Storage Curve. An elevation/storage curve for the proposed detention facility plotted in units of elevation or stage as ordinates and the cumulative storage in acre-feet as abscissas.

(5) Discharge characteristics. Discharge rating curve for the outlet works plotted in units of water surface elevation or stage as ordinates and the discharge rate in cubic feet per second as abscissas. The ordinates must use the same units as the storage curve.

(6) Routed Hydrograph. Hydrograph showing both inflow and discharge in units of cubic feet per second as ordinates and the time from the start of runoff as abscissas.

A. Curves shall be arranged such that the vertical distance between the in flow and the discharge will indicate the net volume in storage at any point in time.

B. Curves shall be extended to the time required for complete discharge of all storm water runoff stored in the detention facility.

(7) Permits. Building permits for projects including detention facilities shall be granted only after all easements have been dedicated, accepted and recorded, and all of the required maintenance agreements, contracts, and bonds or letters of credit have been executed.

(8) Easements. Permanent drainage easements shall be obtained for all storm water drainage systems and open drains that are not within a public dedication. The easement shall permit the right of entry for inspection and maintenance when applicable. Such easements shall be obtained for a detention dam site with spillway and release facilities and flood/flow rights for temporary detention and conveyance of storm water drainage. Deeds and easements shall be properly recorded.

12-809. Requirement for and Establishment of a Grading Permit.

(1) Persons responsible for property developments that are determined to have a significant hydrologic impact or materially increase the degree of flooding shall be required to submit detailed grading and drainage plans to the Building Official for review and approval prior to initiation of work. Significant hydrologic impact is assessed by the effect on downstream drainage or adjoining property caused by the development proposal. The City reserves the right to make such determinations based on judgment and available information. The developer may submit information to assist the City, but this in no way diminishes the City's authority in the matter. An erosion control plan prepared by a design professional shall be included in order to prevent sedimentation from reducing the flow carrying capacity of the downstream drainage system. The design professional shall have the Level I Fundamentals of Erosion Prevention & Sediment Control and Level II Design Principles of Erosion Prevention & Sediment Control for Construction Sites held by the Tennessee Department of Environment and Conservation. For purposes of this chapter, property developments that may have a significant hydrologic impact shall include the grading, excavation, clearing or other alteration of landscape for other than agricultural purposes. This section applies whether or not a building application has been filed, and whether or not subdivision of the land or construction on the land is contemplated in the near future.

(2) For purposes of these regulations, a grading permit is herein established and shall be issued by the Office of Planning & Zoning.

12-810. Review of Construction Plans.

(1) Excavation and grading plans are required to be submitted prior to issuance of a grading permit. In order to facilitate reviews and avoid unnecessary reviews any site that falls between 10,000 square feet up to ½ acre of disturbance shall submit a concept plan to the Building Official for determination of the need to submit a full grading plan. Developers of sites greater than ½ acre shall submit grading plans. The Building Official shall have discretion in applying these requirements. Exceptions are as follows:

A. Single to two family individual residential dwellings in any given area that do not alter a drainage channel, and do not alter the natural ground elevation or vegetation by an amount greater than specified in these regulations, and disturb less than one acre of the site.

B. Commercial or industrial development that:
   i. Adds less than 10,000 square feet of impervious surface. (Either building structure or paved parking and drives), unless part of a larger plan of development.
   ii. Does not alter a drainage channel.
   iii. Does not alter the natural ground elevation five (5) feet or more.
   iv. Disturbs less than one acre unless part of a larger plan of development. If the total developable area of a commercial or industrial property is greater than one acre and an individual parcel or outparcel is less than one acre, excavation and grading plans are required.

12-811. <u>Sinkholes</u>.

(1) General. Sinkholes may be acceptable for use as storm water relief provided that they are determined to be sufficiently active to prevent long term ponding of water, and the developer obtains any necessary State or Federal permits to use the sinkhole is such a manner. Approved State or Federal permits shall be presented to the City of Dickson prior to consideration of the project plans by the City.

(2) Required volume. When a sinkhole is used for storm water relief, provisions shall be made to supply the necessary volume to contain total runoff equivalent to that occurring for a one hundred (100) year, twenty-four (24) hour storm.

(3) Protection. There shall be measures taken to assure that the sinkhole is protected from sedimentation and erosion during construction. Temporary methods such as erosion control fabric and surrounding the sinkhole with bales of straw may be acceptable during construction. Permanent protection of the sinkhole opening shall normally include a metal or concrete casing which is protected from entry by a top gate and is encapsulated within stone to prevent sediment from clogging the opening.

(4) Permits and permissions. Nothing in this ordinance shall be construed as the City of Dickson granting the use of sinkholes for storm water drainage outside the uses normally permitted under the regulations of the State of Tennessee and the government of the United States, nor does this ordinance constrain the City of Dickson to allow the use of sinkholes as part of the storm water management plan for a development. Additionally, the developer shall obtain necessary permits from state and federal agencies for

this use prior to consideration by the City of Dickson. Copies of state and federal permits shall be provided to the Building Official.

12-812 Stream Buffer Zones.

(1) The City of Dickson has established a buffer zone adjacent to all streams within its jurisdiction. The buffer zone shall extend a distance of twenty-five feet from the top of bank on each side of the stream, regardless of the size of stream. The buffer zone shall not be disturbed during the course of development or the maintenance of the property after development. If the stream is designated as high quality or impaired the buffer zone shall be as required by State regulations.

Comment [jgj1]: The state requires an average 60 feet buffer zone on high quality or impaired streams. I suggest 25 feet on all streams unless the state criterion is applicable.

(2) Developers may request a variance of the buffer zone requirement from the City of Dickson Stormwater Committee provided that the following criteria can be met by the proposal:

A. The average width of the stream buffer in the affected area shall be no less than 25 feet, and the minimum allowable width used in the average shall be no less than 10 feet.

B. The developer shall provide a remediation plan illustrating how the disturbance is to be mitigated. Remediation plans shall take into account storm water filtration and stream shading provided by existing vegetation.

C. A landscaping plan shall be submitted prepared by a licensed landscape architect.

(3) In-stream disturbances shall not be permitted under any circumstance without an Aquatic Resources Alteration Permit issued by TDEC, and either a TVA 26A or USACE 404 permit. Failure to obtain these permits prior to disturbance shall constitute a violation of this ordinance.

(4) The requirements of this section shall not be misconstrued to imply a granting of permission to violate established state or federal regulations that may provide a higher standard. The more restrictive standard shall apply in all cases of conflict.

12-813. Erosion Prevention and Sediment Control.

(1) The City of Dickson is Phase II Municipal Separate Storm Sewer System (MS4) operator under the National Pollutant Discharge Elimination System of the Clear Water Act. As such, the City operates its storm water program under the provisions contained in TNR8000000 – NPDES General Permit

for Discharges from Small Municipal Separate Storm Sewer Systems. All developments within the City of Dickson shall comply with the mandatory provisions contained in that document.

(2) All development projects within the City of Dickson shall have an erosion protection and sediment control plan prepared by a design professional licensed in the State of Tennessee in order to prevent sedimentation from reducing the flow carrying capacity of the downstream drainage system and to protect water quality and aquatic/riparian habitat. The design professional shall have attended the Level I Fundamentals of Erosion Prevention & Sediment Control and Level II Design Principles of Erosion Prevention & Sediment Control for Construction Sites held by the Tennessee Department of Environment and Conservation. The date of certification, and the date of expiration of the certification, shall be reported on the EPSC plan.

(3) Erosion prevention and sediment control plans shall be prepared for site disturbances of one acre or greater, or smaller sites that are part of a larger plan of development, whether residential, commercial or industrial. In single lot, single family residential applications, the requirement for an EPSC plan shall only apply if the nature of construction requires the issuance a grading permit.

(4) Developers of sites one acre or greater in size, or smaller lots that are part of a larger plan of development, shall submit a Notice of Intent to the Tennessee Department of Environment and Conservation (TDEC) as required by state regulations. If the acreage threshold for a State permit changes, the adopted State threshold shall apply to this section. The developer shall submit a copy of the coverage letter from TDEC prior to a grading permit being issued by the Building Official.

(5) Erosion prevention and sediment control plans shall be designed to protect against erosion and sedimentation during the occurrence of the five (5) year 24-hour storm event, as a minimum, and shall comply with applicable provisions of the Erosion and Sediment Control Handbook, by TDEC. It is understood that state regulations allow the 2-year 24-hour design storm to be used except in certain situations that require the 5-year 24-hour storm as the design storm, but the intent is to ascribe to the higher standard. In the event the state standards increase, the higher standard shall prevail.

(6) Erosion prevention and sediment control plans shall be designed to meet the required higher standards mandated by the State of Tennessee when it is shown that the site will discharge into an impaired or high quality stream.

The current 303d list and state website shall be referenced by the developer, and stated on plans, to determine the status of the receiving stream.

(7) Erosion prevention and sediment control measures shall be maintained until such time as the site is fully stabilized and the Building Official grants final approval.

(8) The developer and designer shall have obtained in writing the approval of the Building Official with regard to final stabilization of the site prior to submitting the Notice of Termination (NOT) to the State of Tennessee. Failure to allow local review of site conditions and obtain Building Official approval prior to submittal of the NOT shall constitute a violation of these standards and shall be punishable as allowable under these standards.

(9) The developer shall submit to the Building Official a copy of the Notice of Termination and closure letter issued by TDEC at the completion of the project.

(10) The Erosion Prevention and Sediment Control Plan shall comply with the requirements of this ordinance and provisions of the Tennessee General NPDES Permit for Discharges of Storm Water Associated with Construction Activities.

(11) All land disturbance activities shall be inspected in accordance with TNR100000. Copies of the inspection reports shall be submitted to the City of Dickson no later than the first business day following the Friday of a completed week of construction. Failure to submit the required reports shall constitute a violation of these standards and shall be punishable as allowable under these standards.

12-814. Storm Water Management.

(1) Permit Procedures and Requirements

A. Permit Required.

i. No land owner or land operator shall receive any of the building, grading or other land development permits required for land disturbance activities without first meeting the requirements of this ordinance prior to commencing the proposed activity.

B. Application Requirements

i. Unless specifically excluded by this ordinance, any land owner or operator desiring a permit for a land disturbance activity shall submit to the City of Dickson a permit application on a form provided for that purpose.

ii. Unless otherwise excepted by this ordinance, a permit application must be accompanied by the following in order that the permit application may be considered: a site plan; a grading plan; an erosion prevention and sediment control plan; a storm water pollution prevention plan; a storm water management plan; a developer's agreement; a maintenance agreement; and a non-refundable permit review fee.

iii. The storm water management plan shall be prepared to meet the requirements of this ordinance and TNR 100000, the maintenance agreement shall be prepared to meet the requirements of this ordinance, and fees shall be those established by the City of Dickson.

C. Application Review Fees

i. The fee for review of any land development application shall be based on the amount of land to be disturbed at the site, and the fee structure shall be established by the City of Dickson. All of the monetary contributions shall be credited to a local budgetary category to support local plan review, inspection and program administration, and shall be made prior to the issuance of any building permit for the development.

ii. In the event that submittals fail to be approved on technical grounds on three subsequent submittal attempts, the developer shall be required to pay an additional review fee in the amount of the original fee in order to receive further consideration. This process shall continue until either the site achieves approval or the proposal is withdrawn.

D. Application Procedure

i. Applications for land disturbance activity permits must be filed with the City of Dickson Planning, Zoning and Codes Department on any regular business day subject to deadlines associated with the Planning Commission agenda.

1. Applications shall contain all plans, calculations and supporting information necessary to provide a complete review of the proposal.

ii. A copy of this permit application shall be forwarded by the Planning, Zoning and Codes Department to the City Engineer for review.

iii. Permit applications shall include the following: three copies of all site, grading and drainage plans, three copies of the storm water pollution prevention plan, three copies of the storm water management plan, three copies of the maintenance agreement, three copies of all calculations, and any required review fees.

iv. Within 15 business days of the receipt of a complete permit application, including all documents and fees as required by this ordinance, the City of Dickson Planning, Zoning and Codes Department shall inform the applicant whether the application, plans and maintenance agreement are approved or disapproved. Grounds for disapproval include, but are not limited to, non-compliance with this ordinance, the City Zoning Ordinance and Subdivision Regulations, regulations of state and federal agencies, or accepted standards of engineering practice, failure to pay all fees, and failure to submit all required information. Approval of plans by the Planning, Zoning and Codes Department shall neither negate, nor supersede, required approval by the City of Dickson Planning Commission or Stormwater Committee. Conversely, approval by the City of Dickson Planning Commission shall neither negate, nor supersede, required approval based on codes and technical reviews. Disapproval by the City of Dickson Planning Commission shall prevent the issuance of any permits for the proposed development other than those required for site stabilization.

v. If the permit application, site, grading and drainage plans, storm water pollution prevention plan, storm water management plan or maintenance agreement are disapproved, the applicant may revise the storm water management plan or agreement. If additional information is submitted, the City of Dickson shall have 10 business days from the date the additional information is received in complete form to inform the applicant that the plan and maintenance agreement are either approved or disapproved.

vi. The applicant may appeal disapproval of the plans by the Planning, Zoning and Codes Department by requesting a hearing before the Planning Commission. Appeals of disapproval based on storm water issues must go before the Storm Water Committee.

vii. If the permit application, final storm water management plan and maintenance agreement are approved by the City of Dickson Planning, Zoning and Codes Department and the City of Dickson

Planning Commission, all appropriate land disturbance activity permits shall be issued. No permits shall be issued without both approvals.

E. Permit Duration

i. Permits issued under this section shall be valid from the date of issuance through the date the City of Dickson notifies the permit holder that all storm water management practices have passed the final inspection required under permit condition. If the developer does not start work within six months of receiving permits under this ordinance, said permits shall become null and void and the developer shall be required to resubmit the complete application with all materials and fees. The developer may request from the Planning Commission a single 12-month extension to begin construction prior to the expiration of the original 6-month period. Subsequent extensions are not permitted.

(2) Waivers to Storm Water Management Requirements

A. Waivers for Providing Storm Water Management

i. Every applicant shall provide for storm water management as required by this ordinance, unless a written request is filed to waive this requirement. Requests to waive the storm water management plan requirements shall be submitted to the City of Dickson Planning Commission Storm Water Committee, via the Planning, Zoning and Codes Department, for approval. The minimum requirements for storm water 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:

1. It can be demonstrated that the proposed development is not likely to impair attainment of the objectives of this ordinance.
2. Alternative minimum requirements for on-site management of storm water discharges have been established in a storm water management plan that has been approved by the City of Dickson and the implementation of the plan is required by local ordinance.
3. Provisions are made to manage storm water by an off-site facility. The off-site facility is required to be in place, to be designed and adequately sized to provide a level of storm water control that is equal to or greater than that which

would be afforded by on-site practices and there is a legally obligated entity responsible for long-term operation and maintenance of the storm water practice.

4. The City of Dickson Planning Commission finds that meeting the minimum on-site management requirements is not feasible due to the natural or existing physical characteristics of a site.
5. Non-structural practices will be used on the site that reduce: a) the generation of storm water from the site, b) the size and cost of storm water storage and c) the pollutants generated at the site. The acceptance of non-structural practices shall be based upon the submittal of designs and calculations demonstrating the effectiveness of said practices and the acceptance of these non-structural practices shall be at the discretion of the City of Dickson Planning Commission based on staff recommendations.

ii. In instances where one of the conditions above applies, the City of Dickson Planning Commission may grant a waiver from strict compliance with these storm water management provisions, as long as acceptable mitigation measures are provided. However, to be eligible for a variance, the applicant must demonstrate to the satisfaction of the City of Dickson Planning, Zoning and Codes Department and the City of Dickson Planning Commission that the variance will not result in the following impacts to downstream waterways:

1. Deterioration of existing culverts, bridges, dams, and other structures resulting from erosion, scour, increased frequency of overtopping/inundation or other occurrences;
2. Degradation of biological functions or habitat;
3. Accelerated stream bank or streambed erosion or siltation;
4. Increased threat of flood damage to public health, life, property.

iii. This demonstration must be provided by calculations prepared by a licensed professional experienced in the preparation of these analyses.

iv. Furthermore, where compliance with minimum requirements for storm water management is waived, the applicant will satisfy the minimum requirements by meeting one of the mitigation measures selected by the jurisdictional authority. Mitigation measures may include, but are not limited to, the following:

1. The purchase and donation of privately owned lands, or the grant of an easement to be dedicated for preservation and/or reforestation. These lands should be located adjacent to the stream corridor in order to provide permanent buffer areas to protect water quality and aquatic habitat,
2. The creation of a storm water management facility or other drainage improvements on previously developed properties, public or private, that currently lack storm water management facilities designed and constructed in accordance with the purposes and standards of this ordinance,
3. Monetary contributions (Fee-in-Lieu) to fund storm water management activities such as research and studies (e.g., regional wetland delineation studies, stream monitoring studies for water quality and macroinvertebrates, stream flow monitoring, threatened and endangered species studies, hydrologic studies, and monitoring of storm water management practices. Contributions shall be at the rate of 1.5 times the cost of providing on-site measures to meet the criteria, in accordance with the provisions contained in TNR8000000 – NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems.

(3) General Performance Criteria for Storm Water Quantity and Quality Management

A. Unless judged by the City of Dickson Planning Commission or Storm Water Committee to be exempt or granted a waiver, the following performance criteria shall be addressed for storm water management at all sites:

i. All site designs shall establish storm water management practices to control the peak flow rates of storm water discharge associated with specified design storms and reduce the generation of storm water.

These practices should seek to utilize pervious areas for storm water treatment and to infiltrate storm water runoff from driveways, sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity.

ii. New developments shall not discharge untreated storm water directly into jurisdictional wetlands or local water bodies without adequate treatment. Where such discharges are proposed, the impact of the proposal on wetland functional values shall be assessed using a method acceptable to the City of Dickson and the Tennessee Department of Environment and Conservation. In no case shall the impact on functional values be any less than allowed by the Army Corp of Engineers (USACE) or the Tennessee Department of Environment and Conservation, or other agencies responsible for natural resources.

iii. Annual groundwater recharge rates shall be maintained by promoting infiltration through the use of structural and non-structural methods. At a minimum, annual recharge from the post development site shall mimic the annual recharge from pre-development site conditions to the maximum extent practical.

iv. For new development, structural Stormwater Treatment Practices (STP) shall be designed to remove 80% of the average annual post development total suspended solids load (TSS). It is presumed that a STP complies with this performance standard if it is:

1. sized to capture the prescribed water quality volume (WQ_v);
2. designed according to the specific performance criteria outlined in the local storm water design manual, or in the absence of the manual, meets the standards of engineering practice associated with like measures, and complies with the TDEC Handbook;
3. constructed properly, and;
4. maintained regularly.

v. The facilities must be sized to treat the storm water runoff generated on the site for the design storm. For the purposes of storm water quality, the design storm is the storm which produces one-inch of runoff from the proposed development. This is not to be misconstrued as a one-inch rainfall, but should be understood to be

the storm, of whatever total depth, that produces one-inch of runoff under the proposed land use conditions. Designed facilities shall be capable of successfully treating subsequent storms separated by a 72-hour interval without rainfall. The volume generated by one-inch of runoff shall not be allowed to drain from the site but must be retained on site through the use of infiltration, evaporation or other suitable means. The City of Dickson shall have discretion in approving suitable means provided that such means are not in conflict with state or federal regulations.

vi. To protect stream channels from degradation, a specific channel protection criteria shall be provided as prescribed in the current storm water manual, or prescribed by the State of Tennessee, U.S. Environmental Protection Agency or the U.S. Army Corps of Engineers. In the City of Dickson, the channel protection criterion (Cpy) shall be the 24-hour extended detention of the 24-hour one-year storm event. This criterion shall apply to sites that are 10 acres or greater in size, and does not apply to sites that discharge directly to a lake. Applicable site designs shall utilize measures to prevent accelerated erosion in the receiving stream by controlling the rate and velocity of storm water leaving the site.

vii. Storm water discharges to critical areas with sensitive resources (i.e., cold water fisheries, shellfish beds, swimming beaches, recharge areas, water supply reservoirs, and exceptional streams) may be subject to additional performance criteria, or may need to utilize or restrict certain storm water management practices.

viii. Certain industrial sites are required to prepare and implement a storm water pollution prevention plan, and shall file a Notice of Intent (NOI) under the provisions of the National Pollutant Discharge Elimination System (NPDES) permit. The storm water pollution prevention plan requirement applies to both existing and new industrial sites. The State of Tennessee shall govern such sites.

ix. Storm water discharges from land uses or activities with higher potential pollutant loadings, known as “hotspots”, may require the use of specific structural STPs, pretreatment and pollution prevention practices. The application of this criterion and interpretation of “hotspots” shall be at the discretion of the City of Dickson Planning, Zoning and Codes Department.

x. Prior to design, applicants are required to consult with the City of Dickson Planning, Zoning and Codes Department to determine if they are subject to additional storm water design requirements. Failure to consult the City prior to design does not negate the requirements of more stringent criteria, if applicable.

xi. Calculations for determining peak flows as indicated in the ordinance shall be used for sizing all storm water management practices.

(4) Basic Storm Water Management Design Criteria

A. Minimum Control Requirements

i. All storm water management practices will be designed so that the specific storm frequency storage volumes (e.g., recharge, water quality, channel protection, 10-year, 100-year) as identified in the current storm water design manual, or this ordinance in the absence of a manual, are met, unless the City of Dickson Planning Commission grants the applicant a waiver or the applicant is exempt from such requirements. In addition, if hydrologic or topographic conditions warrant greater control than that provided by the minimum control requirements, the City of Dickson, through the Planning, Zoning and Codes Department, with the approval of the City of Dickson Planning Commission, reserves the right to impose any and all additional requirements deemed necessary to control the volume, quality, timing, and rate of runoff.

B. Site Design Feasibility

i. Storm water management practices for a site shall be chosen based on the physical conditions of the site. Among the factors that should be considered:

1. Topography
2. Maximum Drainage Area
3. Depth to Water Table
4. Soils
5. Slopes
6. Terrain
7. Head
8. Location in relation to environmentally sensitive features or ultra-urban areas

C. Conveyance Issues

i. All storm water management practices shall be designed to convey storm water to allow for the maximum removal of pollutants and reduction of in-flow velocities. This shall include, but not be limited to:

1. Maximizing of flow paths from inflow points to outflow points
2. Protection of inlet and outfall structures
3. Elimination of erosive flow velocities
4. Inclusion of infiltration or evaporation facilities
5. Providing of underdrain systems, where applicable

D. Pretreatment Requirements

i. Every storm water treatment practice shall have an acceptable form of water quality pretreatment, in accordance with the pretreatment requirements found in the current storm water design manual (if applicable), this ordinance or state and federal regulations. Certain storm water treatment practices are prohibited even with pretreatment in the following circumstances:

1. Storm water is generated from highly contaminated source areas known as "hotspots"
2. Storm water is carried in a conveyance system that also carries contaminated, non- storm water discharges
3. Storm water is being managed in a designated groundwater recharge area.
4. Certain geologic conditions exist (e.g., karst) that prohibit the proper pretreatment of storm water.
5. In-stream treatment practices are never acceptable. This refers to treatment within a watercourse designated as waters of the state.

E. Treatment/Geometry Conditions

i. All storm water management practices shall be designed to capture and treat storm water runoff according to the specifications outlined in the Storm Water Design Manual (if applicable), or this ordinance. These specifications will designate the water quantity and quality treatment criteria that apply to an approved storm water management practice.

F. Landscaping Plans Required

i. All storm water management practices must have a landscaping plan detailing both the vegetation to be in the practice and how and who will manage and maintain this vegetation. This plan must be prepared by a registered landscape architect.

G. Maintenance Agreements

i. All storm water treatment practices, whether for quantity or quality, shall have an enforceable operation and maintenance agreement to ensure the system functions as designed. This agreement will include any and all maintenance easements required to access and inspect the storm water treatment practices, and to perform routine maintenance as necessary to ensure proper functioning of the storm water treatment practice. In addition, a legally binding covenant specifying the parties responsible for the proper maintenance of all storm water treatment practices shall be secured prior to issuance of any permits for land disturbance activities. Easements shall include the City of Dickson in rights-of-entry for the purpose of inspecting material condition and maintenance of the storm water facility.

H. Non-Structural Storm Water Practices

i. The use of non-structural storm water treatment practices is encouraged in order to minimize the reliance on structural practices.

(5) Requirements for Storm Water Management Plan Approval

A. Storm Water Management Plan Required for All Developments.

i. No application for development will be approved unless it includes a storm water management plan detailing in concept how runoff and associated water quality impacts resulting from the development will be controlled or managed. This plan must be prepared by licensed professional and approved by the City of Dickson and must indicate whether storm water will be managed on-site or off-site and, if on-site, the general location and type of practices. Off-site management practices must be pre-approved by the City of Dickson, and shall have executed agreements, maintenance covenants, deed restrictions and/or other appropriate legally enforceable documents to ensure continuation and maintenance of the management practice. Draft documentation shall be submitted to the City prior to submittal of development plans to be reviewed, and shall be properly executed and recorded, with copies provided

to the City bearing the Recorder's stamp, prior to issuance of permits for the development.

ii. The storm water management plan(s) shall be referred for comment to all other interested agencies, and any comments must be addressed in a final storm water management plan. This final plan must be signed by a licensed professional engineer (PE), who will cerify that the design of all storm water management practices meet the submittal requirements. No building, grading, or sediment control permit shall be issued until a satisfactory final storm water management plan, or a waiver thereof, shall have undergone a review and been approved by the City of Dickson after determining that the plan or waiver is consistent with the requirements of this ordinance.

B. Storm Water Management Concept Plan Requirements

i. A storm water management concept plan shall be required with all permit applications and will include sufficient information (e.g., maps, hydrologic calculations, etc) 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 storm water generated at the project site. The intent of this conceptual planning process is to determine the type of storm water management measures necessary for the proposed project, and ensure adequate planning for management of storm water runoff from future development. To accomplish this goal the following information shall be included in the concept plan:

ii. A map (or maps) indicating the location of existing and proposed buildings, roads, parking areas, utilities, structural storm water management and sediment control facilities. The map(s) will also clearly show 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; A written description of the site plan and justification of proposed changes in natural conditions may also be required.

iii. Sufficient engineering analysis to show that the proposed storm water management measures are capable of controlling runoff from the site in compliance with this ordinance.

iv. A written or graphic inventory of the natural resources at the site and surrounding area as it exists prior to the commencement of the project and a description of the watershed and its relation to the project site. This description should include a discussion of soil conditions, forest cover, topography, wetlands, existing stream cross sections downstream and adjacent to the site, endangered species or habitat on the site, and other native vegetative areas on the site. Particular attention should be paid to environmentally sensitive features that provide particular opportunities or constraints for development.

v. A written description of the required maintenance burden for any proposed storm water management facility.

vi. The City of Dickson, through the Planning Commission and/or Planning, Zoning and Codes Department, may also require a concept plan to consider the maximum development potential of a site under existing zoning, regardless of whether the applicant presently intends to develop the site to its maximum potential at this time.

vii. For development or redevelopment occurring on a previously developed site, an applicant shall be required to include within the storm water concept plan measures for controlling existing storm water runoff discharges from the site in accordance with the standards of this Ordinance to the maximum extent practical with the concurrence of the City of Dickson Planning, Zoning and Codes Department.

C. Final Storm Water Management Plan Requirements

i. After review of the storm water management concept plan, and modifications to that plan as deemed necessary by the City of Dickson Planning, Zoning and Codes Department, a final storm water management plan must be submitted for approval. The final storm water management plan, in addition to the information from the concept plan, shall include all of the information required in the Final Storm Water Management Plan. This includes:

1. Contact Information
    a. The name, address, and telephone number of all persons having a legal interest in the property and the tax map reference number and parcel number of the property or properties affected.
2. Topographic Base Map

a. A 1" = 200' (max.) topographic base map of the site which extends a minimum of 200 feet beyond the limits of the proposed development and indicates existing surface water drainage including streams, ponds, culverts, ditches, and wetlands; current land use including all existing structures; locations of utilities, roads, and easements; and significant natural and manmade features not otherwise shown.

3. Calculations
   a. Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in this ordinance. Such calculations shall include (i) description of the design storm frequency, intensity and duration, (ii) time of concentration, (iii) Soil Curve Numbers or runoff coefficients, (iv) peak runoff rates and total runoff volumes for each watershed area (pre- and post-), (v) infiltration rates, where applicable, (vi) culvert design storm, capacities and materials, (vii) flow velocities, (viii) data on the increase in rate and volume of runoff for the design storms referenced, and (ix) documentation of sources for all computation methods and field test results. Calculations shall be submitted showing post-development peak runoff for the design storm(s) with, and without, water quantity and water quality detention provided at the site. Submittal of reams of paper is not the intent of this ordinance, but submittal of a concise summary illustrating the methodology and coefficients used, and results achieved should suffice to convey the designer's intent.
4. Soils Information
   a. If a storm water 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. 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.

b. A soils report consisting of summary information found on the USGS website shall be sufficient for supporting information for storm water quantity calculations.

5. Maintenance and Repair Plan

a. The design and planning of all storm water management facilities shall include detailed maintenance and repair procedures to ensure their continued function. These plans will identify the parts or components of a storm water management facility that need to be maintained and the equipment and skills or training necessary. It shall also identify the required frequency of maintenance and the person/party responsible for performing maintenance. 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.

6. Landscaping plan

a. 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. This plan must be prepared by a registered landscape architect.

7. Maintenance Easements

a. The applicant must ensure access to all storm water treatment practices at the site for the purpose of inspection and repair by securing all the maintenance easements needed on a permanent basis. These easements will be recorded with the plan and will remain in effect even with transfer of title to the property. Easements should also allow access to the City of Dickson for periodic inspection.

8. Maintenance Agreement

a. The applicant must execute an easement and an inspection and maintenance agreement binding on all subsequent owners of land served by an on-site storm water management measure in accordance with the specifications of this ordinance.

9. Erosion Prevention and Sediment Control Plans for Construction of Storm Water Management Measures and Storm Water Pollution Prevention Plan
   a. The applicant must prepare an erosion prevention and sediment control plan for all construction activities related to implementing any storm water management practices.
   b. The EPSC plan must comply with TNR100000.
   c. The SWPPP must comply with, and contain the sections discussed in, TNR100000.
10. Other Environmental Permits
   a. The applicant shall assure that all other applicable environmental permits have been acquired for the site prior to approval of the final storm water design plan. These permits include, but may not be limited to, a Notice of Intent, Aquatic Resources Alteration Permit, USACE 404 permit, or TVA 26A permit. Copies of these permits shall be provided to the City of Dickson prior to the issuance of City permits for the development.

D. Performance Bond/Security

i. The City of Dickson shall, at its discretion, require the submittal of a performance security or bond prior to issuance of a permit in order to insure that the storm water practices are installed by the permit holder as required by the approved storm water management plan. The amount of the installation performance security shall be the total estimated construction cost of the storm water management practices approved under the permit. The performance security shall contain forfeiture provisions for failure to complete work specified in the storm water management plan, whether in manner of construction, timeliness of construction, or completeness, or failure of the features to perform as required. This amount may, at

the City's sole discretion, be included in the amount of the Site Bond.

ii. The installation performance security shall be released in full only upon submission of "as built plans" and written certification by a registered professional engineer that the storm water practice has been installed in accordance with the approved plan and other applicable provisions of this ordinance. The City of Dickson Planning, Zoning and Codes Department will make a final inspection of the storm water practice 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 based on the completion of various development stages may be done at the discretion of the City of Dickson Planning Commission.

iii. In the event that a Performance Bond/Security is not renewed prior to expiration when construction is on-going, the Director of Planning, Zoning and Codes shall notify the City Planning Commission at its regular meeting prior to expiration, and shall receive authority from the City Planning Commission to call the Performance Bond/Security if not renewed at least two days prior to expiration.

(6) Construction Inspection

A. Notice of Construction Commencement

i. The applicant must notify the City of Dickson Planning, Zoning and Codes Department at least 5 working days in advance of the desired commencement of construction. Regular verification inspections of the storm water management system construction may be conducted by the City of Dickson Planning and Zoning Department, or their representative. The developer shall guarantee right-of-entry to the City of Dickson and its representatives at all times. Prior notification of site visits by the City shall not be required. All inspections conducted by the City shall be documented and written summary reports prepared that contain the following minimum information:

1. The date and location of the inspection;
2. Whether construction is in compliance with the approved storm water management plan
3. Variations from the approved construction specifications

4. Any violations that exist
5. Any expanded text necessary to convey issues or concerns noted at the site

ii. If any violations are found, the property owner shall be notified at the site on the day of inspection and in writing of the nature of the violation and the required corrective actions. No added work shall proceed until all violations are corrected and all work previously completed has received approval by the City of Dickson Planning, Zoning and Codes Department

iii. Inspections by the City of Dickson do not replace the developer's responsibility to provide regular inspections of the storm water management system under the provisions of the Tennessee General Permit for Discharges of Storm Water Associated with Construction Activities. The owner/developer shall independently implement and maintain an inspection plan with full documentation as required by the terms of the permit provided by the State of Tennessee.

(7) As Built Plans

A. All applicants are required to submit actual "as-built" plans for any storm water management practices located on-site after final construction is completed. The plan must show the final design specifications, elevations, sizes, etc., for all storm water management facilities and must be certified by a professional engineer. A final inspection by the City of Dickson Planning, Zoning and Codes Department is required before the release of any performance securities can occur. Failure to submit "as-built" plans, or a finding during final inspection that constructed measures do not comply with approved plans, shall prevent the issuance of a certificate of occupancy, and shall result in a stop-work order until such plans are received and discrepancies are rectified. The City of Dickson may, at its sole discretion, call the performance security in order to correct discrepancies.

(8) Landscaping and Stabilization Requirements

A. Any area of land from which the natural vegetative cover has been either partially or wholly cleared or removed by development activities shall be revegetated within fifteen (15) days from the substantial completion of such clearing and construction, unless under pavement or within the envelope of a building actively under construction. This shall

also apply to sites that have been idle for fifteen (15) days. 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. Reseeding and re-mulching shall be done as often as necessary to maintain temporary protection and establish permanent vegetation.

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.

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. This plan must be prepared by a registered landscape architect, and must be approved prior to receiving a permit.

(9) Maintenance and Repair of Storm Water Facilities

A. The City of Dickson shall not be responsible for the maintenance or repair of storm water facilities constructed as part of a plan of development, unless such facilities are constructed as part of a project developed by the City.

B. Maintenance Easement

i. Prior to the issuance of any permit that has a storm water management facility as one of the requirements of the permit, the applicant or owner of the site must execute a maintenance easement agreement that shall be binding on all subsequent owners of land served by the storm water management facility. The agreement shall provide for access to the facility at reasonable times for periodic inspection

by the City of Dickson, or their contractor or agent, and for regular or special assessments of property owners and their maintenance contractors to ensure that the facility is maintained in proper working condition to meet design standards and any other provisions established by this ordinance. The easement agreement shall be recorded by in the land records of Dickson County.

C. Maintenance Covenants

i. Maintenance of all storm water management facilities shall be ensured through the creation of a formal maintenance covenant that must be approved by the City of Dickson Planning Commission and recorded into the land record of Dickson County upon final plan approval. Maintenance, unless accepted by the City, shall be accomplished by the owner of record, or developer, as provided by the maintenance covenant. As part of the covenant, a schedule shall be developed for when and how often maintenance will occur to ensure proper function of the storm water management facility. The covenant shall also include plans for periodic inspections to ensure proper performance of the facility between scheduled cleanouts. The City of Dickson, in lieu of a maintenance covenant, may accept dedication of any existing or future storm water management facility for maintenance, provided such facility meets all the requirements of this chapter and includes adequate and perpetual access and sufficient area, by easement or otherwise, for inspection and regular maintenance. Such acceptance shall clearly be in the best interest of the general public and shall be referred by the Planning Commission to the City Council for a final decision.

D. Requirements for Maintenance Covenants

i. All storm water management facilities must undergo, at the minimum, a twice-yearly inspection by the owner to document maintenance and repair needs and ensure compliance with the requirements of this ordinance and accomplishment of its purposes. These needs may include; removal of silt, litter and other debris from all catch basins, inlets and drainage pipes, grass cutting and vegetation removal, and necessary replacement of landscape vegetation. Any maintenance needs found must be addressed in a timely manner, no more than 30 days barring adverse weather conditions, as determined by the City of Dickson, and the inspection and maintenance requirement may be increased as deemed necessary

to ensure proper functioning of the storm water management facility. Increased inspections and maintenance, as required under this ordinance, may be placed upon the owner at the discretion of the City of Dickson if the approved frequency does not, in the opinion of the Building Official, accomplish the storm water goals for the facility.

E. Inspection of Storm Water Facilities by the City of Dickson

i. 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 state or federal water or sediment quality standards or the NPDES storm water 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 visually evaluating the condition of drainage control facilities and other storm water treatment practices. The City of Dickson shall, at least annually, inspect facilities and review owners' records of inspection and maintenance.

F. Right-of-Entry for Inspection

i. When any new drainage control facility is installed on private property, or when any new connection is made between private property and a public drainage control system, sanitary sewer or combined sewer, the property owner shall grant to the City of Dickson the right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. This includes the right to enter a property when the City has a reasonable basis to believe that a violation of this ordinance is occurring or has occurred, and to enter when necessary for abatement of a public nuisance or correction of a violation of this ordinance.

G. Records of Installation and Maintenance Activities.

i. Parties responsible for the operation and maintenance of a storm water management facility shall make records of the installation and of all inspections, maintenance and repairs, and shall retain the records for at least five years. Records of construction shall be maintained in perpetuity. These records shall be made available to the City of Dickson during inspections of the facility and at other reasonable times upon request.

H. Failure to Maintain Practices

i. If a responsible party fails or refuses to meet the requirements of the maintenance covenant, the City of Dickson, 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 storm water management facility becomes a danger to public safety or public health, the City of Dickson shall notify the party responsible for maintenance of the storm water management facility in writing. Upon receipt of that notice, the responsible person shall have thirty days to effect maintenance and repair of the facility in an approved manner. After proper notice, the City of Dickson may assess the owner(s) of the facility for the cost of repair work and any penalties; and the cost of the work shall be a lien on the property, or prorated against the beneficial users of the property, and may be placed on the tax bill and collected as ordinary taxes by the City.

(10) Enforcement and Penalties.

A. Violations

i. Any development activity that is commenced or is conducted contrary to this Ordinance may be restrained by injunction or otherwise abated in a manner provided by law.

B. Notice of Violation.

i. When the City of Dickson determines that an activity is not being carried out in accordance with the requirements of this Ordinance, it shall issue a written notice of violation to the owner of the property. The notice of violation shall contain:

1. the name and address of the owner or applicant;
2. the address when available or a description of the building, structure or land upon which the violation is occurring;

3. a statement specifying the nature of the violation;
4. a description of the remedial measures necessary to bring the development activity into compliance with this Ordinance, or condition to be corrected, and a time schedule for the completion of such remedial action;
5. a statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed;
6. a statement that the determination of violation may be appealed to the municipality by filing a written notice of appeal within fifteen (15) calendar days of service of notice of violation.

C. Stop Work Orders

i. Persons receiving a notice of violation shall also be given an Stop Work Order and will be required to halt all construction activities other than those required to correct the deficient condition. This "stop work order" will be in effect until the City of Dickson confirms that the development activity is in compliance and the violation has been satisfactorily addressed. Failure to address a notice of violation in a timely manner can result in civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in this ordinance.

D. Penalties

i. In addition to, or as an alternative to, any penalty provided herein or by law, any person who violates the provisions of this Ordinance shall be punished by a fine of not less than fifty Dollars ($50) per day, per violation, up to the maximum penalties allowed under TCA 68-221-1106, normally $5,000 per day, per violation. Such person shall be guilty of a separate offense for each day during which the violation occurs or continues.

E. Restoration of lands

i. Any violator may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the City of Dickson may take necessary corrective action, the cost of which shall become a lien upon the property until paid.

F. Holds on Occupation Permits

i. Occupation permits will not be granted until corrections to all storm water practices have been made and accepted by the City of Dickson.

12-815. Post-Construction Storm Water Facility Operation and Maintenance

(1) Design

A. All storm water BMPs shall be designed in a manner to minimize the need for maintenance, and reduce the chances of failure. In the absence of local design guidelines, published state standards and the standards of good engineering practice shall apply.

B. Storm water easements and covenants shall be provided by the property owner for access for facility inspections and maintenance. The owner shall be responsible for all inspections and maintenance, to be accomplished at least twice per year unless specified more frequently during the development of the SWMP. Under the easement agreements the City of Dickson shall be allowed access for periodic inspections for verification purposes. This shall not be interpreted that the City will accept maintenance responsibility for the facility. Maintenance responsibility for the facility will remain with the Owner/Developer/Homeowner's Association, as appropriate. Easements and covenants shall be recorded with the Dickson County Register of Deeds, with copies provided to the City of Dickson prior to the issuance of a permit.

C. Final design shall be approved the City of Dickson Planning, Zoning and Codes Department.

(2) Routine Maintenance

A. All storm water BMPs shall be maintained according to the measures outlined in the approved SWMP and as approved in the permit.

B. The person(s) or organization(s) responsible for maintenance shall be designated in the SWMP. Options include:

i. Property owner.

ii. Homeowner's association, provided that provisions for financing necessary maintenance are included in deed restrictions or other contractual agreements.

C. Maintenance agreements shall specify responsibilities for financing maintenance.

(3) Non-Routine Maintenance

A. Non-routine maintenance includes maintenance activities that are expensive but infrequent, such as pond dredging or major repairs to

storm water structures.

B. Non-routine maintenance shall be performed on an as-needed basis based on information gathered during regular inspections.

C. If non-routine maintenance activities are not completed in a timely manner, or as specified in the Plan, the City of Dickson may complete the necessary maintenance at the owner's/ operator's expense, and such expenses may be assessed as a lien upon the property(s), or included with the annual tax bill.

(4) Inspections

A. The person(s) or organization(s) responsible for maintenance shall inspect storm water BMPs on a regular basis, as outlined in the Plan, but in no case less than twice per calendar year.

B. Authorized representatives of the City of Dickson may enter at reasonable times to conduct on-site inspections for verification, or routine maintenance if the responsible party is in default with respect to performance of maintenance activities.

C. For BMPs maintained by the property owner or homeowner's association, inspection and maintenance reports shall be filed with the City of Dickson, as provided for in the Plan, no later than thirty days after each inspection occurs.

D. Owners/operators shall submit reports of maintenance/repair of BMPs to the City of Dickson within thirty days of the activity. If permits are required to conduct the activity, the Owner/operator shall obtain all permits prior to performing the maintenance activity.

E. Authorized representatives of the City of Dickson may conduct inspections to confirm the information in the reports filed under "C" and "D" above.