

**ORDINANCE 06-O-\_\_** amending the Murfreesboro City Code, Chapter 27½—Stormwater Management, Section 27½-2, and adding Sections 27½-17 through 27½-33, dealing with water quality protection area.

**BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MURFREESBORO, TENNESSEE, AS FOLLOWS:**

SECTION 1. Chapter 27½ of the Murfreesboro City Code is hereby amended by designating Sections 27½-1 through 27½-16 as “Article I. Stormwater Management.”

SECTION 2. Section 27½-2 of the Murfreesboro City Code is hereby amended by adding the following definitions in alphabetic order:

“Active Channel. The area of the stream channel that is subject to frequent flows (approximately once per one and one half (1½) years) and that includes the portion of the channel below where the floodplain flattens.

Drip Line. A vertical line extending from the outermost edge of the tree canopy or shrub branch to the ground.

Greenway. A linear open space established along a natural or constructed corridor (e.g. stream, river or railroad) which is designed to connect recreational areas with cultural or historic features and/or populated areas for pedestrian and/or bicycle traffic. A greenway is developed and maintained to provide protection of natural resources, transportation alternatives, and recreational opportunities. A greenway may include associated amenities (e.g. interpretive markers, canoe launching areas, and trailhead facilities such as buildings, picnic areas and playgrounds) with the linear pathway.

Managed Vegetation. Management that does not involve grubbing, clearing, tilling, disking or plowing of the ground. Cutting, mowing, pruning, no-till planting, and aeration are allowed activities of managed vegetation.

Stream. Waters of the State except for those waters flowing within wet weather conveyances. In the absence of a definitive assessment by the State of Tennessee of whether a watercourse is a stream or a wet-weather conveyance, the following watercourses are considered to be streams:

- (A) watercourses serving drainage areas of one hundred acres or more, provided that the watercourse existed prior to the development under consideration for application of the water quality protection area;
- (B) watercourses known to flow regularly after seven days of dry weather (e.g., spring-fed surface water);
- (C) watercourses identified as a dashed blue line on the USGS map; and
- (D) watercourses identified as a continuous blue line on the USGS map.

The City may conclude, subject to review by the State, that a watercourse or segment of watercourse is not a stream, based on a review of field data assessing its geomorphology, hydrology and biology.

Seedling/Sapling. A deciduous, native, non-invasive canopy tree with a minimum height of twenty-four inches and minimum caliper of three-eighths (3/8) inches at time of planting. Seedlings/saplings can be

bare-root or container grown. All seedling/saplings are to have well developed root systems, to be free of insects and disease as well as mechanical injuries, and in all respects to be suitable for field planting.

Significant Redevelopment. Redevelopment that has a value greater than fifty percent (50%) of the property's current assessed value; increases the Impervious surface area of the property; redirects the flow of stormwater in any way; modifies the storm sewer system; or, is likely to result in additional pollutants to the stormwater characteristics.

Top of Bank. The landward edge of the active channel.

USGS Map. The most recent 7.5 minute series (topographic) map for the location under consideration.

Water Quality Protection Area (WQPA). Undisturbed vegetation, including trees, shrubs and herbaceous vegetation; enhanced or restored vegetation; or the reestablishment of vegetation bordering streams, ponds, wetlands, reservoirs or lakes, which exists or is established to protect those bodies of water.

Wet Weather Conveyances. Man-made or natural watercourses, including natural watercourses that have been modified by channelization, that flow only in direct response to precipitation runoff in their immediate locality and whose channels are above the groundwater table and which do not support fish and aquatic life and are not suitable for drinking water supplies."

**SECTION 3.** Section 27½-2 of the Murfreesboro City Code is hereby amended by adding the following to the end of the definition for "*Waters of the State*":

"Waters of the State or simply waters means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine to effect a junction with natural surface or underground waters."

**SECTION 4.** Chapter 27½ of the Murfreesboro City Code is hereby amended by adding "Article II. Water Quality Protection Area."

**SECTION 5.** Chapter 27½ of the Murfreesboro City Code is hereby amended by adding the following sections to Article II:

**"SECTION 27½-17 WATER QUALITY PROTECTION AREA.**

A water quality protection area (WQPA) is a strip of undisturbed vegetation, either original or reestablished, bordering streams, ponds, wetlands, reservoirs or lakes, which provides:

- (A) A naturally vegetated and pervious buffer between a stream and clearing, grading, filling, paving and building activities of nearby new site development; and
- (B) Protection of stream quality, and resource management benefits.

**SECTION 27½-18 DEVELOPMENT AND REDEVELOPMENT.**

In all development and redevelopment adjacent to streams and wetlands, the persons involved in the process of development shall provide for and ensure the establishment, protection, maintenance and function of the WQPA. In development and significant redevelopment, the WQPA requirements apply to the whole site. In redevelopment, the WQPA applies only to the specific area of redevelopment.

**SECTION 27½-19**

**ZONES AND VEGETATION.**

Zone widths and target vegetation within the WQPA are as follows:

- (A) Zone 1 is measured perpendicular to the stream channel. Zone 2 is measured along the same line beginning at the outside edge of Zone 1.
- (B) Where a stream is indicated as a continuous blue line or double blue line on the USGS map, Zone 1 shall measure thirty-five feet from top of bank, and Zone 2, fifteen feet.
- (C) Where a stream is indicated as a dashed blue line on the USGS map, Zone 1 shall measure thirty-five feet from top of bank, and Zone 2, fifteen feet.
- (D) Where a stream is not indicated on the USGS map, Zone 1 shall measure twenty feet from top of bank, and Zone 2, fifteen feet.
- (E) The vegetative target in Zone 1 is a variety of mature vegetation, including trees, allowed to grow undisturbed. Native vegetation is preferred. Native vegetation is required for any new plantings, and invasive species are prohibited.
- (F) While the preferred vegetation for Zone 2 is a variety of plants, including grasses, allowed to grow undisturbed, other forms of vegetation are allowed in Zone 2. Managed vegetation is allowed in Zone 2, subject to limitations in Section 27½-20. Native vegetation is required for any new plantings, except non-native lawn grasses are allowed.
- (G) To summarize (A) through (F):

		Zone 1	Zone 2
WQPA width measurement	Stream represented by continuous blue line	35 feet from top of bank	15 feet
	Stream represented by dashed blue line	35 feet from top of bank	15 feet
	Stream not shown on USGS map	20 feet from top of bank	15 feet
Vegetative target, in areas with pre-existing trees alongside stream:		Undisturbed, mature vegetation; native vegetation preferred; new plantings must be native vegetation	Undisturbed vegetation; native vegetation, including grasses preferred; other vegetation and managed vegetation is allowed; new plantings must be native vegetation

- (H) When wetland areas extend beyond the edge of the required WQPA width, the WQPA shall be adjusted so that the area consists of the extent of the wetland plus a thirty-five foot zone extending beyond the wetland edge. The target vegetation in this zone shall be undisturbed, native vegetation.
- (I) Ponds which intersect the stream channel shall have the same WQPA as the original stream measured from the top of the bank of the pond. WQPA requirements shall not apply to a detention or retention pond constructed as a water quality management practice.

- (J) In areas of the WQPA without pre-existing tree canopy alongside the stream, the property developer must enhance the WQPA by planting trees, as follows:
- (1) Pre-existing tree canopy means a corridor of trees rooted within fifteen feet of the stream's top of bank providing canopy and shade along the stream;
  - (2) Where a property has no pre-existing canopy or the existing canopy is broken by a forty foot or greater section or sections, with only low-growing vegetation (eighteen inches or less), as traced out by the drip lines of adjacent trees, the developer must plant trees in these sections.
  - (3) Planting standards and specifications.
    - (a) A variety of native tree seedlings/saplings planted within fifteen feet of the top of stream bank evenly spaced on approximately ten foot centers. More than one species shall be planted and every effort should be made to observe the surrounding area and identify which native tree species dominate that particular locale so as to aid in the seedling/sapling selection process.
    - (b) A plan shall be submitted to the City for approval, before there is any disturbance of the WQPA. The plan must address erosion prevention and sediment control. The plan is subject to approval by the City Horticulturalist.
    - (c) Planting must be done at a time to minimize stress to plants. All planting must be completed by the next planting season. Performance sureties shall not be released or final certificates of occupancy granted until the planting is accomplished.
  - (4) *Planting standards and specifications for commercial properties.* Plantings which fulfill the requirements for perimeter and buffer zone landscaping, of Appendix A–Zoning, Section 27, may be allowed to serve as required WQPA plantings, where the plantings are adjacent the stream and will function to establish canopy alongside the stream.

**SECTION 27½-20 PROHIBITED ACTS.**

Within both Zones 1 and 2 of the WQPA, persons are not allowed, except with prior written approval of the Planning Commission or City Engineer, or as allowed under Sections 27½-21 and 27½-22, to:

- (A) clear or grub existing vegetation;
- (B) disturb soil by grading, stripping or other means;
- (C) fill or dump;
- (D) ditch or construct other stormwater drainage systems;
- (E) build or place structures; or
- (F) use, store or apply pesticides, herbicides or fertilizers.

**SECTION 27½-21 ALLOWED DISTURBANCES OF WQPA.**

- (A) Disturbance of a WQPA is allowed where necessary for crossings by roads, bridges, paths and utilities, provided:
  - (1) the Planning Director or Planning Commission, in consultation with the City Engineer and Director of the Water and Sewer Department, have provided prior written approval to the land developers;
  - (2) options to reduce or eliminate the crossing are examined and prove to be not economically feasible;

- (3) the width of disturbance during installation and maintenance is kept to a minimum;
  - (4) the angle of crossing should be perpendicular or within fifteen degrees (15°) of perpendicular to the stream, to minimize clearing requirements;
  - (5) a minimum of crossings is used; and,
  - (6) the design of roadways and lots within a residential subdivision development avoids driveway stream crossings.
- (B) The City may allow disturbance of a WQPA where necessary for the repair and maintenance of public improvements, provided that specifications for the project address means to avoid and lessen adverse impacts to streams, wetlands and associated aquatic ecosystems. Nothing herein shall prohibit usual and customary maintenance of public utility rights-of-way, including limited use of herbicides, provided that measures are taken to avoid or minimize adverse disturbance to a WQPA.

**SECTION 27½-22 ACCEPTABLE STRUCTURES AND ACTIVITIES WITHIN A WQPA.**

Acceptable structures and activities within the WQPA, in addition to vegetation as described in 27½-19, include:

- (A) In Zone 1 - Publicly accessible Greenways and road, bridge and utility crossings; and,
- (B) In Zone 2 – Uses allowed in Zone 1 and utility right(s)-of-way.

These additional uses are acceptable provided the Planning Director, in consultation with other departments, provides prior written approval and plans for such construction minimize impervious areas and show methods of construction to minimize ground disturbance, compaction of soil, and removal of trees.

**SECTION 27½-23 MANAGEMENT OF A WQPA.**

- (A) Management of a WQPA shall be the responsibility of the property owner; ownership can be collective, e.g. a homeowners' association, rather than individual.
- (B) Property owners are allowed to have managed vegetation in Zone 2, subject to limitations in Section 27½-20.
- (C) Removal of individual trees in the WQPA is allowed, where the tree is likely to fall and damage dwellings or other structures, or to cause blockage of the stream; the root wad or stump should be left in place, where feasible, to maintain soil stability.
- (D) Property owners may be allowed to remove invasive, exotic plant species in the WQPA, provided that permission is given in writing by the City Horticulturalist.

**SECTION 27½-24 DESIGN, PLACEMENT AND OPERATION OF GREENWAYS WITHIN A WQPA.**

Greenways, as defined herein, are allowed within a WQPA provided:

- (A) the design and placement of the greenway is outside Zone 1 insofar as practicable;
- (B) the design and placement of the greenway takes into account natural fluctuations in stream channel;
- (C) the design and placement of the greenway takes into consideration the location of invasive, exotic plants or other undesirable vegetation or lack of vegetation;

- (D) grading and post-construction planting is done to maintain or establish stormwater sheet flow and infiltration of stormwater to the maximum extent practicable;
- (E) where watercourses cross the greenway, care is taken to provide ample culvert or channel structure to avoid scour;
- (F) disturbance of native vegetation and more valuable trees is minimized;
- (G) vegetation is reestablished where missing;
- (H) management of the greenway includes litter pick-up and monitoring and elimination of erosion or other polluting activities;
- (I) management of the greenway includes removal of invasive, exotic plants; and,
- (J) programs or materials to educate users about surface water quality are provided.

**SECTION 27½-25 PROTECTION OF WQPA DURING DEVELOPMENT ACTIVITIES.**

- (A) Prior to the initiation of any grubbing or clearing of vegetation, and prior to any pre-construction drilling, cutting or soil-sampling, the developer shall ensure adequate visibility of the WQPA by staking and flagging at the outer edge of Zone 2 or by silt fence placed at the edge of or outside the WQPA.
- (B) If the property owner or agent removes or destroys vegetation within the WQPA, the City will require the owner to restore vegetation, including stream bank stabilization as necessary, according to a plan approved by the City.
- (C) For activities that include stream and/or wetland disturbance, alteration, or relocation which require approval and permitting by federal and/or state regulatory agencies including but not limited to Aquatic Resource Alteration Permit or Section 404 Permit and include disturbance of a WQPA, the following additional requirements apply:
  - (1) obtain prior written approval of the City Engineer;
  - (2) prepare WQPA restoration plan to establish or reestablish Zone 1 and Zone 2 WQPAs for review by the City Engineer and City Horticulturalist;
  - (3) obtain other City approvals and permits as necessary; and
  - (4) establish WQPA notations as required in Section 27½-27.
 This subsection (C) does not apply to allowed disturbances as addressed in Section 27½-21.

**SECTION 27½-26 STABILIZATION.**

Stream banks and other areas within a WQPA must be left stable upon completion of the development activities. The condition of vegetation within the buffer must be monitored, and planting, landscaping or stabilization performed to repair erosion, damaged vegetation, or other problems identified. Only native vegetation may be used in conjunction with stabilization activities.

**SECTION 27½-27 SITE DEVELOPMENT PLANS AND PLATS.**

All site development plans and subdivision plats submitted to the City or prepared for recording shall:

- (A) show the extent of any WQPA on the subject property by metes and bounds and with the label "Water Quality Protection Area – Do Not Disturb";

- (B) provide a note to reference the WQPA, "There shall be no clearing, grading, construction or disturbance of soil and/or native vegetation except as permitted in writing by the City of Murfreesboro"; and
- (C) if a protective covenant has been established for the maintenance of the WQPA, provide a note stating, "Any water quality protection area (WQPA) shown hereon is subject to protective covenants which restrict disturbance and use of these areas."

**SECTION 27½-28 PROTECTIVE COVENANTS.**

WQPAs may, but are not required to be, documented and maintained through a declaration of protective covenant. Any such covenant should be recorded in the land records to run with the land.

**SECTION 27½-29 APPLICATION TO PROPOSED DEVELOPMENT AND REDEVELOPMENTS.**

The WQPA requirements apply to all proposed development and redevelopment, except for development which prior to the effective date of this ordinance:

- (A) is covered by a valid, unexpired plat in accordance with development regulations;
- (B) is covered by a current, executed public works agreement;
- (C) is covered by a valid, unexpired City land disturbance permit or building permit; or,
- (D) has been granted Planning Commission approval of preliminary plat or site plan.

**SECTION 27½-30 VARIANCES.**

The Water and Sewer Board may grant a variance for the following:

- (A) Those projects or activities where it can be demonstrated that strict compliance with the ordinance would result in extreme practical difficulty or substantial financial hardship.
- (B) Those projects or activities serving a public need where no feasible alternative is available.
- (C) Developments in planned development zoning districts which have a master plan approved by the City Council before February 14, 2006, which do not qualify for exemption under Section 27½-29.
- (D) To request a variance, one must submit a written request to the Director of the Murfreesboro Water and Sewer Department, expressing the reason(s) for the request and providing information for the City and hearing board to evaluate the proposal. The City may require an analysis to demonstrate no feasible alternatives exist and to show minimal impact will occur as a result of the project. When a variance is granted as to the width of the WQPA in one area, the applicant must normally demonstrate that the average width of the WQPA across the length of the stream channel for that development equals or exceeds the otherwise applicable WQPA width. If a variance request arises under subsection (C) herein, the standards for granting the variance may be less restrictive and the degree of variance granted may be greater than for other variance requests.

**SECTION 27½-31 CONFLICT OF LAWS.**

Where the standards and management requirements of this buffer ordinance are in conflict with other laws, regulations, and policies regarding streams, wetlands, floodplains, land disturbance activities or other environmental protective measures, including those of the federal and state governments, the more restrictive requirements shall apply.

**SECTION 27½-32 VIOLATION.**

Violations of the provisions of this ordinance or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variance shall constitute an offense punishable as other violations of City ordinances as provided by law. Each day of such violation shall be considered a separate offense. Nothing herein shall prevent the City from taking other lawful actions to prevent or remedy any violation.

**SECTION 27½-33 SEVERABILITY.**

Should any article, section, subsection, clause or provision of this ordinance be declared by a court of competent jurisdiction to be unconstitutional or invalid, such decision shall not affect the validity of the ordinance as a whole or any part thereof other than the part declared to be unconstitutional or invalid, each article, section clause and provision being declared severable.”

SECTION 6. That this Ordinance shall take effect fifteen (15) days after its passage upon third and final reading, the public welfare and the welfare of the City requiring it.

Passed:

1<sup>st</sup> reading \_\_\_\_\_  
2<sup>nd</sup> reading \_\_\_\_\_  
3<sup>rd</sup> reading \_\_\_\_\_

\_\_\_\_\_  
Tommy Bragg, Mayor

ATTEST:

APPROVED AS TO FORM:

\_\_\_\_\_  
James B. Penner  
City Recorder

\_\_\_\_\_  
Susan Emery McGannon  
City Attorney

SEAL