

# **TOWN OF SMYRNA**

## **Water Quality Buffer Zone Policy**

### **Section I - Description**

A water quality buffer zone (a.k.a. a riparian zone) is a strip of undisturbed native (indigenous) vegetation, either original or re-established, that borders streams and rivers, ponds and lakes, wetlands, and seeps. Water quality buffers zones, a.k.a. buffer zones, are most effective when storm water runoff is flowing into and through them as shallow sheet flow, rather than in concentrated form such as in channels, gullies, splays, or wet weather conveyances. Therefore, it is critical that the design of any development include management practices, to the maximum extent practical, that will result in storm water runoff flowing into and through the buffer zone as shallow sheet flow.

Water quality buffer zones protect the physical and ecological integrity of water bodies from surrounding upland activities in the following ways:

- filtering excess amounts of sediment, organic material, nutrients, and other chemicals;
- reducing storm runoff velocities;
- providing flood protection;
- protecting channel bank areas from scour and erosion;
- providing shade for cooling adjacent water; which allows waters to hold a greater level of dissolved oxygen;
- providing leaf litter and large woody debris important to aquatic organisms; and
- improving stream bank habitat for aquatic organisms

### **Section II – Intent**

The intent of this policy is to protect and maintain the native vegetation in water quality buffer zones by implementing specifications for the establishment, protection, and long-term maintenance of buffer zones along all intermittent and perennial stream waterways, wetlands, and seeps, in or adjacent to new development and significant redevelopment within our jurisdictional authority. This policy serves to clarify the requirements for water quality buffer zones. It applies to all development approved after its enactment, including significant redevelopment of properties approved prior to its enactment.

### **Section III - Design Standards for Water Quality Buffer Zones**

A water quality buffer zone is required along all perennial and intermittent stream waterways and wetlands as identified on a 7.5-minute USGS quadrangle map, or as determined by the Tennessee Department of Environment and Conservation (TDEC) or Town of Smyrna Engineering Department. The buffer zone width shall be determined as follows:

Where a subdivision is traversed by a watercourse, drainageway, channel, or stream, there shall be provided a water quality buffer zone extending two (2) times the width of the channel of such watercourse from both edges of said channel. This buffer zone shall be required unless a licensed engineer demonstrates to the satisfaction of the city engineer that a lesser buffer zone is required using an alternative best management practice equaling or exceeding the effectiveness of the required buffer zone.

Water quality buffer zone width adjustment:

- A) If there are 15% to 24% slopes which are within the required buffer zone width, the buffer width shall be adjusted to include an additional 20 feet.
- B) If there are 25% or greater slopes which are within the required buffer zone width, the buffer width shall be adjusted to include an additional 50 feet.
- C) If the adjacent land use involves drainfields from on-site sewage disposal and treatment systems (i.e. STEP system collection / sand filter treatment / disposal field lines) or subsurface sewage disposal systems (i.e. conventional, alternative, and experimental septic systems) current TDEC-Division of Water Pollution Control and Rutherford County Health Department regulations, requiring a 25 foot setback from top of bank, shall govern. No septic tanks shall be allowed within the buffer zone, while disposal field lines are allowed within the buffer zone so long as they abide by the aforementioned state and county regulations.
- D) If the land use or activity involves the storage of hazardous substances or petroleum facilities, the buffer zone width shall be adjusted to include an additional 100 feet.
- E) If the land use involves animal feedlot operations, the buffer zone width shall be adjusted to include an additional 200 feet.
- F) If the land use or activity involves solid waste landfills or junkyards, the buffer zone width shall be adjusted to include an additional 250 feet.
- G) If the adjacent land use involves surface discharges of collected septage current Rutherford County Health Department regulations, requiring a 300 foot setback from the top of bank, shall govern.
- H) If the adjacent land use involves surface discharges from a wastewater treatment plant, land application of bio-solids, or animal waste the buffer zone width shall be governed by current TDEC-Division of Water Pollution Control regulations.
- I) If more than one of the aforementioned are applicable, the greater width adjustment shall apply.

**Section IV - Water Quality Buffer Zone Management and Maintenance**

The function of the water quality buffer zone is to protect the physical and ecological integrity of the waterway, to reduce flooding potential, and to filter runoff from residential, commercial, institutional, recreational, and industrial development. The buffer zone vegetative objective is undisturbed native vegetation.

- A) Management of the water quality buffer zone includes specific limitations on alteration of the natural conditions. The following practices and activities are restricted within the water quality buffer zone, except with prior approval by the Town of Smyrna Engineering Department:
  - 1) Clearing or grubbing of existing vegetation;
  - 2) Clearcutting of vegetation;
  - 3) Soil disturbance by grading, stripping, or other practices;
  - 4) Filling or dumping;
  - 5) Use, storage, or application of pesticides, herbicides, and fertilizers; and
  - 6) Conversion of vegetation from native to exotic species.

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- B) The following structures, practices, and activities are permitted in the water quality buffer zone, subject to the prior approval of the Town of Smyrna Engineering Department, the acquisition of an Aquatic Resources Alteration Permit (ARAP) from the Natural Resources Section, Division of Water Pollution Control, TDEC, and the following specific design or maintenance features:
- 1) Stream crossings, paths (i.e. trails and greenways), stream bank stabilization efforts, riparian zone enhancements, instream deflector structures, and utilities
    - a) An analysis needs to be conducted to ensure that no economically feasible alternative is available;
    - b) The right of way should be the minimum width needed to allow for maintenance access and installation;
    - c) The angle of a crossing shall be perpendicular to the stream or buffer in order to minimize clearing requirements;
    - d) The minimum number of crossings should be used within each development, and no more than one crossing is allowed for every 1,000 linear feet of buffer zone. Where possible, the design of roadways and lots within a development should be aligned such that all streams are either to the rear or the side of individual lots, never along the front.
  - 2) Individual trees within the water quality buffer zone may be cut down if in danger of falling, causing damage to dwellings or other structures, or causing blockage of the stream. The remaining root wad or stump should be left in place, where feasible, to maintain soil stability and instream habitat.
- C) All site development plans and plats prepared for recording shall:
- 1) Show the extent of any water quality buffer zone on the subject property by metes and bounds and be labeled as "Water Quality Buffer Zone";
  - 2) Provide a note to reference any water quality buffer zone stating, "There shall be no clearing, grading, construction, or disturbance of soil and/or native vegetation except as permitted by the Town of Smyrna Engineering Department"; and
  - 3) Provide a note to reference any protective covenants governing all water quality buffer zones stating, "Any water quality buffer zone shown hereon is subject to protective covenants which may be found in the land records and which restrict disturbance and use of these areas."
- D) All water quality buffer zones must be protected during development activities. Prior to the initiation of development activities, ensure adequate visibility of the water quality buffer zones by staking and flagging and onsite visitation and discussion(s) with all appropriate contractors. Permanent boundary markers, in the form of signage approved by the Town of Smyrna Engineering Department, shall be installed prior to the completion of the development activities.

- E) Stream banks and other areas within the water quality buffer zone shall be left in a stabilized condition upon completion of the development activities. The vegetative condition of the entire buffer zone shall be monitored and landscaping or stabilization performed to repair erosion, damaged vegetation, or other problems identified. Only native vegetation may be used in conjunction with stabilization activities. A guide to selecting native vegetation can be found at [www.tva.com/river/landandshore/stabilization/plantsearch.htm](http://www.tva.com/river/landandshore/stabilization/plantsearch.htm), or obtained by contacting the Town of Smyrna Engineering Department.

All landscaping or stabilization activities within the water quality buffer zone shall have prior approval by the Town of Smyrna Engineering Department. In addition, performing work in and around waters of the state may require coverage under a state and possibly a federal permit. Contact the nearest TDEC, Division of Water Pollution Control Environmental Assistance Center (1-888-891-8332) for more information on whether a proposed activity requires a permit.

- F) No buildings shall be allowed in the water quality buffer zone with the exception of open type recreation areas as detailed in the Town of Smyrna Municipal Zoning Ordinance.
- G) All water quality buffer zones shall be maintained through a declaration of protective covenant, which is required to be submitted for approval by the Town of Smyrna Engineering Department. The covenant shall be recorded in the land records and shall run with the land and continue in perpetuity.
- H) Water quality buffer zones shall be recorded on the plat for parcels subject to plat revision as water quality buffer easements. On parcels not subject to plat revisions, the buffer zone shall be applied as a setback from the edge of channel and shown on the site plan as a water quality buffer zone.
- I) All lease agreements shall contain a notation regarding the presence and location of protective covenants for water quality buffer zones. The aforementioned agreement shall contain information on the management and maintenance requirements for the buffer zones for the new resident.

#### **Section V - Waivers/Variances**

- A) This water quality buffer zone policy shall apply to all proposed development except for a development which was approved prior to the effective date of this ordinance:
- 1) Is covered by a valid, unexpired plat in accordance with development regulations;
  - 2) Is covered by a current, executed public works agreement;
  - 3) Is covered by a valid, unexpired building permit; or
  - 4) Has been granted a waiver in accordance with current development regulations.

- B) The Town of Smyrna Engineering Department may grant a variance for the following:
- 1) Those projects or activities where it can be demonstrated that strict compliance with the ordinance would result in practical difficulty or financial hardship; or
  - 2) Those projects or activities serving a public need where no feasible alternative is available; or
  - 3) The repair and maintenance of public improvements where avoidance and minimization of adverse impacts to wetlands and associated aquatic ecosystems have been addressed.
- C) Waivers for development may also be granted in two additional forms, if deemed appropriate by the Town of Smyrna Engineering Department:
- 1) The water quality buffer zone width may be relaxed and permitted to become narrower at some points as long as the width is not reduced to less than (35) feet perpendicular from the top of bank, and the overall average width of the buffer zone meets the minimum requirement set forth in Section III – Water Quality Buffer Zone Width Determination (page 1) of this policy.
  - 2) The Town of Smyrna may consider credit for additional density elsewhere on the site in compensation for the loss of developable land due to the requirements of this ordinance. This compensation may increase the total number of dwelling units on the site up to the amount permitted under the base zoning.
- D) The applicant shall submit a written request for a variance to the Town of Smyrna Engineering Department. The application shall include specific reasons justifying the variance and any other information necessary to evaluate the proposed variance request. The Town of Smyrna Engineering Department may require an alternatives analysis that clearly demonstrates that no other feasible alternatives exist and that minimal impact will occur as a result of the project or development.
- E) When considering a request for a variance, the Town of Smyrna Engineering Department may require additional information such as, but not limited too, site design, landscape planting, fencing, the placement of signs, and the establishment of water quality best management practices in order to reduce adverse impacts on water quality, streams, and wetlands.

## **Section VI - Conflict with Other Regulations**

Where the standards and management requirements of this buffer ordinance are in conflict with other laws, regulations, and policies regarding streams, steep slopes, erodible soils, wetlands, floodplains, timber harvesting, land disturbance activities, or other environmental protective measures, the more restrictive requirements shall apply.