

Chapter 6: Water Quality Buffer Requirements

6.1 Introduction

Water quality buffer requirements apply to all new land development or redevelopment containing streams or other water bodies such as ponds, lakes and wetlands, and subject to regulation under the Montgomery County Storm Water Resolution. Water quality buffers must be established, protected, maintained in perpetuity. Buffers shall remain undisturbed for the length of the water feature. These requirements are in addition to, and do not replace or supersede, any other applicable buffer requirements established by the State.

Water quality buffers that are disturbed shall be revegetated following a revegetation plan approved by the Montgomery County Storm Water Coordinator and following TDEC ARAP guidelines and requirements.

The Montgomery County Building and Codes Department will maintain a map identifying water features that must be buffered. These features will be added to or removed from this map as encountered in the field and investigated and/or as TDEC or the Army Corp of Engineers designates. The County's designation map may not accurately capture TDEC- or COE- regulated streams or wetlands. Developers are responsible for complying with TDEC and COE permits related to streams and wetlands.

Water quality buffers provide the County and its citizen's environmental protection and resource management benefits:

- Removing pollutants delivered in urban storm water
- Reducing erosion and controlling sedimentation
- Stabilizing stream banks
- Providing infiltration of storm water runoff
- Maintaining base flow of streams
- Contributing the organic matter (e.g., leaf litter, woody debris) that is a source of food and energy for the aquatic ecosystem
- Providing tree canopy to shade streams which lessens the potential for harmful algal blooms where significant levels of nutrients are present
- Providing riparian wildlife habitat
- Furnishing scenic value and recreational opportunities.

Benefits of a water quality buffer zone to a property developer can include:

- Reducing loss of stream bank and erosion of land
- Avoiding need to obtain an Aquatic Resource Alteration Permit from the Tennessee Department of Environment and Conservation for grading next to a stream, creek or other body of water
- Avoiding the necessity for a permit from the U.S. Army Corps of Engineers
- Providing natural flood storage and flood conveyance alongside the creek or stream
- Increasing natural vegetation, property aesthetics and property value
- Reduced maintenance and landscaping

6.2 Water Quality Buffer Widths

Buffer widths have been established separately for streams and other water bodies. Zones and/or buffer compositions differ for streams and other water bodies.

Rivers, Streams and Brooks: New land disturbing activities along or near streams shall establish, protect, and maintain perpetually a 60 foot water quality buffers adjacent to, and on each side of rivers, streams and brooks. The buffer shall be measured horizontally from the top of bank. Top of bank shall mean the highest elevation of land which confines water flowing in a stream to the channel. Stream buffers shall have two zones as follows:

- a) Zone 1 will begin at the top of bank and extend horizontally and perpendicular to the stream for 30 feet. It will consist of trees and deep-rooted vegetation and shall remain undisturbed except for uses provided in Section 6.
- b) Zone 2 will begin at the outer edge of Zone 1 and extend landward 30 feet, making the combined width of the zones 60 feet. It will minimally consist of a dense grass buffer, with the grass maintained between 2 to 6 inches in height. Grading and revegetating in Zone 2 is allowed provided that the health of Zone 1 is not compromised. Other allowable activities and uses are listed under Section 6.4 Allowable Activities within a Water Quality Buffer.

Ponds, Lakes, Other Water Bodies: All land development or re-development activity subject to this ordinance shall establish and maintain a 30 foot grass buffer along all ponds, lakes, and other water bodies. Where manmade ponds interrupt streams, Zone 1 of the stream buffer can stop at the pond and resume at the point of outflow of the pond into the stream.

- a) Ponds that do not discharge into streams, brooks, rivers, sinkholes, wells, wetlands, watersheds, or into bodies of water which do discharge into the natural watershed, or onto another property owner's lands are not required to maintain a water quality buffer zone. The pond owner is responsible for property damages resulting from the failure of pond water containment measures, or if water that is released as a result of that failure results in pollutant discharge to the environment exceeding the limits outlined under the terms of the NPDES act, TDEC regulations, or the Montgomery County Storm Water Resolution.

Wetlands: All land development or re-development activity subject to this ordinance shall establish and maintain 50 foot wide undisturbed water quality buffer adjacent to all wetlands. The buffer width shall be measured around the outer edge of the identified wetland. Native vegetation shall be undisturbed in this buffer. For those wetlands where the designation or extent of the wetland is in dispute, Montgomery County will rely on wetland designation by the Corps of Engineers (COE) or TDEC

Sinkholes: All land development or re-development activity subject to this ordinance shall establish and maintain a 60 foot wide undisturbed water quality buffer adjacent to all sinkholes. The buffer width shall be measured around the outer edge of the identified sinkhole. No structures are to be built within this buffer zone.

Class 5 Injection Wells (Improved Sinkholes): All land development or re-development activity subject to this ordinance shall establish and maintain a 60 foot wide undisturbed water quality buffer adjacent to all Class 5 Injection Wells. The buffer width shall be measured around the outer edge of the structure. No structures are to be built within this buffer zone.

Caves: Caves are formed in karstic areas by the same material dissolution and collapse process that results in sinkholes. A cave provides direct access to subsurface formations, and has the same potential for pollution of groundwater as sinkholes. Caves are storm water structures regulated by the Montgomery County Storm Water Resolution. The same water quality buffer requirements that are applied to sinkholes are also required for caves.

6.3 Protection of Water Quality Buffers

During construction, water quality buffers around streams, wetlands, ponds, and other water bodies must be protected from disturbance and from sediment-laden runoff from the site. Prior to beginning land-disturbing activities at a site, water quality buffers must be identified and flagged in the field for protection. Temporary fencing or other suitable alternative must be placed at the outer edge of the buffer to prevent inadvertent disturbance. The method of buffer protection must be detailed in the Storm Water Quality plan and the Grading Drainage and Erosion Control plan. Water quality buffers cannot act as vegetated filters for sediment control.

6.4 Allowable Activities within a Water Quality Buffer

Montgomery County considers the activities listed in Table 1: Allowable Water Quality Buffer Impacts as allowable buffer activities. All other activities that impact the buffer shall proceed through a variance process.

6.5 Specifically Forbidden Activities within a Water Quality Buffer

In order for the water quality buffer zone to function properly, it is necessary for certain activities to be limited within the buffer. The following activities are specifically limited within buffers without prior permission from the Montgomery County Building Commissioner.

- a) Filling or dumping
- b) Using, storing, or applying pesticides, herbicides and fertilizers
- c) Removal of vegetation in Zone 1 water quality buffers
- d) Camp fires, burning of plant waste or trash

Table 1: Allowable Water Quality Buffer Impacts

Allowable Activities	Stream Buffers	Wetland Buffers	Pond Buffers
Greenway and Trails	Zone 1: Hardened surfaces not allowed.	Allowable, width not to exceed 5 feet	Allowable, width not to exceed 5 feet
	Zone 2: Hardened surfaces allowable, width not to exceed 5 feet.		
Wildlife and Fisheries Management	Wildlife and Fishing as approved by TDEC, TWRA, and/or U.S. Fish and Wildlife		
Water Dependant Structures (Boat Docks, Piers, Marinas)	Allowable pending Tennessee Department of Environment, Tennessee Wildlife Resources Agency, and/or US Corps of Engineers permit and licensing requirements. Builder must minimize environment disturbance and stabilize disturbed areas as soon as possible		
Driveway Crossings	Less than 3000 square feet of buffer impact is allowable (based on 30 foot wide disturbance) perpendicular to the stream.	Not Allowable	Allowable
Road Crossings	2 crossings per 1000 linear feet of stream are allowable. Crossings shall be perpendicular to the stream	Not Allowable	Allowable
Underground Utility Lines	Zone 1: Not allowable Zone 2: Allowable	Not Allowable	Allowable
	Stream crossings shall be perpendicular to the stream flow and shall impact no more than 30 feet width perpendicular to the flow.		
Overhead Utility Lines	Allowable: Stream crossings shall be perpendicular to the stream flow and shall impact no more than 30 feet width perpendicular to the flow.	Allowable	Allowable

6.6 Buffer Ownership and Maintenance

For private properties and subdivisions, buffers shall be located inside individual lots or located within easements in common areas. Maintenance of the buffer shall remain with the property owner or with a homeowner's association. In the event of the homeowner's association dissolution, responsibility for Water Quality Buffer maintenance reverts to the property owner. Maintenance responsibilities shall be clearly indicated on plans submitted to the Building and Codes Department.

- a) Maintenance shall be limited to removing dead or diseased plant material, repairing erosion problems internal to the buffer, clean up after a storm, or removal of invasive plants. Woody vegetation shall be removed by hand. Vegetative root systems shall be left intact to maintain the integrity of soil. Stumps shall remain where trees are cut.
- b) It is permissible to remove individual trees from water quality zones if there is danger of the tree falling and causing damage to dwellings or other structures, or which would result in significant blockage of stream flow, with prior permission from the Montgomery County Building Commissioner or a qualified designee. The root wad or stump should be left in place to maintain soil stability.

