UNIFIED DEVELOPMENT ORDINANCE

Greenville County, South Carolina



Article 6: Buffers & Screening

PUBLIC REVIEW DRAFT | NOVEMBER 15, 2022

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ARTICLE 6: BUFFERS & SCREENING

6.1 GENERAL PROVISIONS

6.1.1 PURPOSE¹

The purpose of this Article is to establish minimum standards to achieve the following purposes, which, combined, promote the health and general welfare of the County:

- A. **Appearance and Beauty**. Enhancement of the overall appearance and natural beauty of the community;
- B. **Buffering and Screening**. Buffering of incompatible land uses and screening negative site elements;
- C. **Heat Island Effect**. Reduction of heat generated from paved surfaces;
- D. Water Quality and Wildlife. Protection of water quality and wildlife habitat;
- E. **Conservation**. Promotion of approaches to the design, installation, and maintenance of landscaping that encourage water and energy conservation;
- F. **Nuisances**. Mitigate air, dust, noise, heat, and chemical pollution;
- G. Vegetation and Topsoil. Preservation of existing vegetation and topsoil; and
- H. **Additional Benefits**. Provision of multiple additional benefits including energy conservation, increased property values, and an enhanced aesthetic quality throughout the County.

6.1.2 APPLICABILITY²

The provisions of this Article apply to all of the following activities in unincorporated Greenville County, except for agricultural uses and individual detached house dwellings, that meets or exceeds the following thresholds:

A. **New Development**. New development on previously undeveloped land;

¹ This is new language that explains the purpose of the Article.

² This is new language that provides clarity for what kinds of development activities in the County trigger compliance with this Article.

B. Change in Use.

- 1. A change in use from a residential use to a non-residential use; or
- 2. A change from one non-residential use to another non-residential use, if the lot is adjacent to a residential zoning district or to a lot containing a residential use;

C. **Expansions**.

- 1. Expansion of Multiplex Dwellings. Expansion of a multiplex dwelling by more than 5 dwelling units;
- 2. Expansion of Apartment Complex. Expansion of an apartment complex by more than 5 dwelling units;
- 3. Expansion of Gross Floor Area. Expansion of the gross floor area of a building by more than 25%; or
- 4. Expansion of Paved Surface. Expansion of a paved surface by more than 25%.
- 5. Existing Uses. Where buffering is required due to the expansion of an existing land use, the perimeter or right-of-way buffer is only required on the property lines most adjacent to the expansion.

6.1.3 PLANT MATERIALS STANDARDS³

- A. **Plant Variety**. All required plants shall be of the type and species appropriate for the climate of Greenville County and location being planted. All plant material shall meet the minimum standards recognized by landscape professionals. In order to reduce the threat and impact of plant disease, multiple plant types and species shall be utilized on each site.
- B. **Prohibited**. Invasive non-native species as listed by the <u>Southeast Exotic Pest Plant Council for South Carolina</u> are prohibited plant material.

C. Sizes and Varieties.

- 1. *Generally*. All required plants shall meet the size and variety requirements in Table 6.1.3-1: *Minimum Plant Sizes and Heights*.
- 2. Selection of Materials.

³ This Subsection contains measurements that mostly come from the existing Zoning Ordinance.

- (a) Biodiversity of the genus and species of trees and shrubs is required in order to prevent monocultures, which could result in large-scale losses in the event of disease or blight.
- (b) Except for plantings in riparian buffers, within each category of required landscaping (shade or coniferous evergreen trees, small or multi-stem trees, and evergreen shrubs), not more than 60% shall be of any one genus and not more than 40% shall be of any one species. Refer to Section 6.3: *Riparian Buffers*, for plant genus and species requirements in such buffers.
- (c) Trees and shrubs planted pursuant to this Section shall be good, healthy nursery stock.

Table 6.1.3-1: Minimum Plant Sizes and Heights						
Plant Type	Minimum Size at Planting	Minimum Height at Planting				
Shade Tree	2-Inch Caliper	10 feet				
Small or Multi-Stem Tree	1.5-Inch Caliper	6 feet				
Evergreen Tree	Not Applicable	6 feet				
Evergreen Shrub	3-Gallon Container	1 foot at planting / 3 feet within 3 years after planting				

D. Suggested Plant List.4

- 1. *Generally*. Plants listed in Table 6.1.3-2: *Suggested Plant List,* may be utilized to fulfill the requirements of this Article. Plants that are not listed in Table 6.1.3-2: *Suggested Plant List* are allowed in landscaped areas and may count toward compliance with this Section if the Zoning Administrator determines that:
 - (a) The plant is not a prohibited species;
 - (b) Is either native to the region or not invasive; and
 - (c) Provides habitat for native wildlife or migratory birds.
- 2. *Professional Expertise*. The applicant should seek professional expertise to determine the appropriate plant materials for any particular site, when considering individual site, soil, moisture, and microclimate conditions.

⁴ This list may be updated in conjunction with revisions to the tree preservation regulations.

Table 6.1.3-2: Suggested Plant List							
Shade Trees	Small or Multi-Stem Tree	Evergreen Coniferous Trees	Evergreen Shrubs	Grasses			
American Beech, Fagus grandifolia ^{1,2}	American Holly, Ilex opaca ¹	American Holly, Ilex opaca ¹	Azalea, Azalea obtusum	Big Bluestem, Andropogon gerardi			
Baldcypress, Taxodium distichum	American Hornbeam, Carpinus caroliniana ^{1,2}	Arborvitae Green Giant, Thuja standishii × plicata	Giant, Thuja Carissa Holly, Ilex				
Black Ash, Fraxinus nigra ^{1,3}	Amur Maple, Acer ginnala	Cryptomeria, Cryptomeria japonica	Cryptomeria Curiylear Ligustrum,				
Black Birch, Betula lenta ¹	Carolina Silverbell, Halesia Carolina	Darlingtonia Live Oak, Quercus virginiana ¹	Oak, Quercus Boxus sempervirens				
Black Cherry, Prunis serotina ¹	Cockspur hawthorn, Crataegus crus-galli ¹	Darlington Oak, Quercus laurifolia ¹	Dwarf Buford Holly, Ilex cornuta	Switch grass, Panicum virgatum			
Black Gum, Nyssa sylvatica ¹	Crape-Myrtle, Lagerstroemia indica	Deodar Cedar, Cedrus deodara	Dwarf Nandina, Nandina domestica	Little bluestem, Schizachyrium scoparium			
Black Walnut, Juglans nigra ¹	Devil's Walkingstick, Aralia spinosa ¹	Eastern Red Cedar, Juniperus virginiana ¹	Dwarf Yaupon Holly, Ilex vomitoria	Indian grass, Sorghastrum nutans			
Black Willow, Salix nigra ^{1,3}	Dogwood, Cornus florida ^{1,2}	Eastern White Pine, Pinus strobus ¹	Harland Boxwood, Boxus harlandii	Eastern gama grass, Tripsacum dactyloides			
Chestnut Oak, Quercus prinus ¹	Eastern Hophornbeam, Ostrya virginiana ^{1,2}	Loblolly Pine, Pinus taeda ¹	India Hawthorn, Raphiolepis indica				
Chinese Elm, Ulmus parvifolia	Eastern Redbud, Cercis Canadensis	Southern Magnolia, Magnolia grandiflora ¹	Inkberry Holly, Ilex glabra				

Table 6.1.3-2: Suggested Plant List							
Shade Trees	Small or Multi-Stem Tree	Evergreen Coniferous Trees	Evergreen Shrubs	Grasses			
Dawn Redwood, Metasequoia	Elderberry, Sambucus candensis ¹	Virginia Pine, Pinus virginiana¹	Japanese Holly, Ilex crenata				
Eastern Cottonwood, Populus deltoides ^{1,3}	Fringetree, Chionanthus virginicus ^{1,2}		Otto Laurel, Prunus laurocerasus				
Eastern Hemlock, Tsuga canadensis ^{1,2}	Golden Raintree, Koelreuteria paniculate		Parsons Juniper, Juniperus davurica				
Green Ash, Fraxinus pennsylvanica ^{1,3}	Green hawthorn, Crataegus viridis ¹		Schipka Laurel, Prunus laurocerasus				
Hackberry, Celtis occidentalis ¹	Kousa Dogwood, Cornus kousa		Tamarix Juniper, Juniperus sabina				
Japanese Pagoda, Sophora japonica	Kwanzan Cherry, Prunus serrucata						
Japanese Zelkova, Zelkova serrata	Nannyberry, Viburnum lentago ¹						
Laurel Oak, Quercus laurifolia ¹	Parsley hawthorne, Crataegus marshalli ¹						
Littleleaf Linden, Tillia cordata	Pawpaw, Asimia triloba ^{1,2}						
Overcup Oak, Quercus lyrata ¹	Pissard Plum, Prunus cerasifera						
Persimmon, Diospyros virginiana ¹	Possumhaw, Ilex deciduas ¹						
Pin Oak, Quercus palustris¹	Redbud - Judas Tree, Cercis canadensis ^{1,2}						
Red Maple, Acer rubrum ^{1,2,3}	Red Buckeye, Aesculus pavia ¹						
River Birch, Betula nigra ¹	Sassafras, Sassafras albidum ¹						
Shagbark hickory, Carya ovata¹	Saucer Magnolia, Magnolia soulangiana						

Table 6.1.3-2: Suggested Plant List							
Shade Trees	Small or Multi-Stem Tree	Evergreen Coniferous Trees	Evergreen Shrubs	Grasses			
Shingle Oak, Quercus imbricata ¹	Serviceberry - Shadbush, Amelanchier arborea ^{1,2,3}						
Shumard Oak, Quercus shumardii ¹	Smooth Alder, Alnus serrulata ¹						
Silver Maple, sacchharinum¹	Sourwood, Oxydendron arboreum ¹						
Slippery Elm, Ulmus rubra ^{1,3}	Sparkleberry, Vaccinium arboreum¹						
Sugar Maple, Acer saccharum, 1,3	Spicebush, Lindera benzoin ^{1,2}						
Sourwood, Oxydendron arboreum ¹	Sugar Hackberry, Celtis laevigata ¹						
Southern Magnolia, Magnolia grandiflora	Sweetbay Magnolia, Magnolia virginiana ^{1,2,3}						
Tulip Poplar, Liriodendron tulipifera ¹	Two-winged Silverbell, Halesia diptera ¹						
Washington Hawthorn, Craetagus phaenopyrum ¹	Yoshino Cherry, Prunus yedoensis						
Water Locust, Gleditsia aquatica ¹							
Water Oak, Quercus nigra ¹							
Water Tupelo, Nyssa aquatica ¹							
Weeping Willow, Salix babylonica ¹	_						
White Ash, Fraxinus americana ^{1,2}							

Table 6.1.3-2: Suggested Plant List						
Small or Multi-Stem Tree	Evergreen Coniferous Trees	Evergreen Shrubs	Grasses			
<u> </u>	mall or Multi-Stem	mall or Multi-Stem Evergreen	mall or Multi-Stem Evergreen Evergreen Shrubs			

¹ Plant is appropriate for Riparian Buffers.

6.1.4 PLANT LOCATIONS & SUBSTITUTIONS⁵

All plantings must comply with the following standards.

- A. **Public Right-of-Way**. A property owner may provide landscaping in the public right-of-way adjacent to his or her property in accordance with County Code Section 18-64(b)(3). Such landscaping shall not count toward the requirements of this Article.
- B. **Sight Distance Triangle**. No landscaping may be planted in violation of the requirements in Section 12.4: *Intersection Sight Distance*.
- C. **Easements**. Shade trees are prohibited within any public utility easement and under utility lines. Where shade trees are would normally be required in an area underneath overhead power lines, small or multi-stem trees are required in their place, as depicted in Figure 6.1.4-1: *Small or Multi-Stem Tree Substitution*.

² Plant is shade tolerant.

³ Plant is flood tolerant.

⁵ This Subsection provides guidance for tree plantings in special circumstances and allows for substitutions of certain plant types.

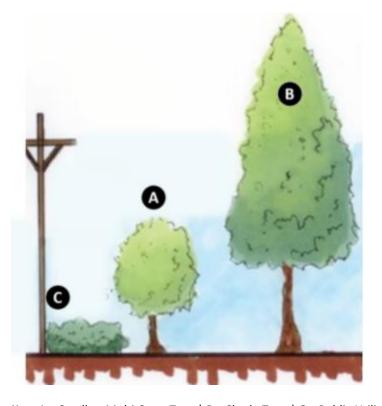


Figure 6.1.4-1: Small or Multi-Stem Tree Substitution

Key: A = Small or Multi-Stem Tree | B = Shade Tree | C = Public Utility Easement / Utility Line

- D. **Plant Substitutions**. The following substitution of tree planting requirements are permitted:
 - 1. Shade. One shade tree may take the place of 10 required shrubs.
 - 2. *Small or Multi-Stem*. One small or multi-stem tree may take the place of 5 required shrubs.
 - 3. Evergreen. One evergreen tree may take the place of 1 required shade tree.
 - 4. Substitution. One shade tree may take the place of 2 required small or multi-stem trees and 2 small or multi-stem trees may take the place of 1 shade tree per 100-foot buffer segment.
 - 5. *Grasses*. Three ornamental grasses may take the place of 1 required shrub.

6.1.5 CREDIT FOR EXISTING PLANTS, FENCES, & WALLS

A. **Generally**. An existing fence or wall may be counted towards the buffer requirements of this Section, provided that the fence or wall is structurally sound, in good repair, and of an upright condition.

- B. **Existing Plants**. Healthy trees and shrubs on the subject property are eligible to fulfil the planting requirements for buffers if the plants comply with the standards of this Section (including being a species on the Suggested Plant List).
- C. **Existing Fences and Walls**. If a structured buffer, as established in Section 6.2: *Perimeter & Right-of-Way Buffers*, is preferred or required and there is already a fence or wall on the property line, then the Director may waive the fence or wall requirement, provided:
 - 1. The applicant's engineer verifies that the existing fence or wall is structurally sound, in good repair, and of an upright condition;
 - 2. The height and level of screening of the fence or wall meets the intent of this Article with regard to buffering;
 - 3. The applicant records an agreement with the County that includes appropriate assurances that if the existing fence or wall deteriorates, or is damaged, destroyed, or removed, the applicant, or subsequent owners of the property, will repair or replace it with a fence or wall that meets the buffer standards of this Article; and
 - 4. The applicant's Final Plat or, if no plat is required, Site Plan, includes an annotation regarding the applicant's responsibilities under the agreement required by this Subsection.

6.2 PERIMETER & RIGHT-OF-WAY BUFFERS⁶

6.2.1 GENERALLY⁷

- A. **Types of Buffers**. The buffers required in this Section are based on the amount of screening they provide between zoning districts, depending on the types and intensities of adjoining zoning districts, or along the public right-of-way, depending on the adjacent street classification.
- B. **Description**. A buffer is a set aside area of land, 100 feet in length, located parallel to and within the outer perimeter of a property and extending to the property line, together with the plantings and vertical screening devices (berms, walls, or fences) required within the buffer. A

⁶ This Section revises and expands the requirements in ZO Section 12:9: *Screening and Buffering Requirements* and LDR Section 10.3.5: *Screening/Buffering*.

⁷ The intent for this "Generally" Subsection is to lay out as many provisions as possible that apply to both perimeter and ROW buffers and to let the specific subsections that follow address the remaining details.

buffer may also contain a barrier such as a wall, fence, or berm where additional screening is necessary to achieve the required level of buffering.

C. Fractional Buffers. Where a buffer is required along a portion of a property line that is a fraction of 100 linear feet, then the same fraction of plantings for the buffer is required. For example, if a property line is 175 linear feet between two zoning districts and requires a Class C perimeter buffer, then the buffer along that property line shall consist of a full Class C buffer for 100 feet and a 75-foot-long Class C buffer for the remainder. The required plantings for a structured Class C buffer for this segment, based on Table 6.2.1-1: Buffer Planting and Screening Requirements, are multiplied by .75, resulting in 4 shade or evergreen coniferous trees, 5 small or multi-stem trees, and 23 shrubs.

D. **Encroachments**.

- 1. *Perimeter or ROW Buffers*. Permitted activities, improvements, or encroachments within a perimeter or right-of-way buffer include:
 - (a) Monument signs, as established in <u>Chapter 19</u>: <u>Signs</u>, of the Greenville County Code, is the sign is no more than 5 feet in height;
 - (b) Utilities; and
 - (c) Walkways, paths, trails, and other elements associated with passive recreation or the provision for continuous pedestrian and bicycle connections between adjoining properties.
- 2. *ROW Buffers Only*. Permitted activities, improvements, or encroachments within a right-of-way buffer include:
 - (a) Driveway access;
 - (b) Entrance features and signage to the extent permitted; and
 - (c) Low impact drainage features as permitted in Article 14: Low Impact Development; and
 - (d) Clearing for sight distances as required for reasonable traffic safety.

E. Buffer Establishment.

1. Classes. There are three classes of buffers, each of which vary in width and in the numbers and types of plants required per 100 linear feet. These buffers function as perimeter and right-of-way buffers according to Subsections 6.2.2and 6.2.3, below. Table 6.2.1-1: Buffer Planting and Screening Requirements, sets out the minimum number of plantings and required screening for each class of perimeter buffer. Figure 6.2.2-1: Example Buffer Types, illustrates each buffer class.

- 2. *Designation*. A required buffer shall be designated as open space or common area on the subdivision plat or site plan if no plat is required.
- F. Width. The width of a buffer may be narrower than required by a maximum of one-half of the required width if the average width of the 100-foot buffer segment is the minimum required. For example, portions of a natural Class A buffer may be 6 feet in width if additional width is provided, wider than 12 feet, in other portions of the buffer.

G. **Plant Arrangement**.

- 1. Planting Patterns. Except as otherwise noted, required plantings may be arranged in clusters, in repeating patterns, or as needed in order to provide the most effective screening and buffering.
- 2. Location on Subject Property. Buffers shall be entirely located on the subject property unless the applicant executes and records a maintenance agreement with the adjacent property owner.
- 3. Relationship to Screening Devices. Where a screening device is part of a buffer, required plantings shall be located on the side of the screening device closest to the property line so that plantings are visible to the adjacent property or public right-of-way.
- H. **Buffer Maintenance**. Horticultural practices, including thinning and planting, may be used to maintain health of individual trees. Hazard trees and invasive species in the buffer may be removed.

I. Screening Devices.

- 1. Requirement. Screening devices are required for structured buffers established in Table 6.2.1-1: Buffer Planting and Screening Requirements. Screening devices consist of fences, walls, or berms that meets the standards of Section 6.6: Fences & Walls.
- 2. Fence and Wall Height. Required fences and walls shall be a minimum of 6 feet and a maximum of 9 feet in height.
- 3. *Support Columns*. Masonry support columns shall be provided every 40 feet of a required fence.
- 4. *Breaks*. Breaks in a required fence or wall may be provided for pedestrian connections to adjacent developments.
- 5. Berms Measurements. Berms that are part of a required buffer shall have:
 - (a) A minimum height of 4 feet;
 - (b) A minimum 2-foot wide flat area on top; and

- (c) Slopes of not less than 3 feet horizontal for each 1 foot vertical.
- 6. Buffers with Berms. In order to accommodate a berm, the buffer may need to be wider than required in Table 6.2.1-1: Buffer Planting and Screening Requirements. For example, a Type A buffer would have to be 26 feet in width in order to accommodate the berm and the flat area on top, but will only require the amount of plantings required for a Type A buffer.
- J. **Exemptions.**⁸ Perimeter and right-of-way buffers are not required when one of the following conditions exist, except that Paragraph 6.2.1.J.3: *Property Size*, applies to perimeter buffers only:
 - 1. *Elevation*. There is an elevation difference of at least 6 feet between two adjacent districts or between the subject property and the public right-of-way;
 - 2. Existing Vegetation. The subject property is separated from the adjacent property or right-of-way by a natural area, or a natural area that, if supplemented with new plantings, meets or exceeds the level of screening required by the applicable buffer;
 - 3. *Property Size*. The subject property in a non-residential or mixed use district is 2 acres or less in area; or
 - 4. Review Districts. The subject property is in a review district, as established in Table 2.1.2-1: Zoning Districts, because the buffer requirements for these districts are stipulated in the statement of intent and/or concept plan for each development; however, the perimeter buffer width for an I-2 or BTD district where it abuts a residential district shall be a minimum of 100 feet.

	Table 6.2.1-1: Buffer Planting and Screening Requirements									
	Buffer Width Requ				red Plantings per 100 Linear Feet					
	Natural	Structured	Shade or Evergreen Small or Multi-S Coniferous Trees Trees			Evergre	en Shrubs			
Buffer Class		Natural Buffer	Structured Buffer	Natural Buffer	Structured Buffer	Natural Buffer	Structured Buffer			
А	12'	8'	2	2	3	2	10			
В	25'	15′	4	3	4	3	20			
С	50′	25′	5	4	6	4	30			

Key: Structured buffers require a screening device that consists of a fence, wall, or berm that meets the standards of Section 6.2.1.I: *Screening Devices*.

⁸ Paragraphs 3 and 4 are existing exemptions that have been slightly modified.

Buffer Class

A

B

C

Natural Buffer (100-Foot Segment)

Structured Buffer (100-Foot Segment)

C

Structured Buffer (100-Foot Segment)

Figure 6.2.1-1: Example Buffer Classes

6.2.2 PERIMETER BUFFERS

- A. **Generally**. No perimeter buffer is required where identical zoning districts or groups of land uses are adjacent to one another or where zoning districts or groups of land uses are separated by public right-of-way.
- B. **Perimeter Buffers in Zoned Areas**. Table 6.2.2-1: *Perimeter Buffer Requirements in Zoned Areas* sets out the required buffer class as determined by the intensities of adjoining districts.

	Table 6.2.2-1: Perimeter Buffer Requirements in Zoned Areas								
		A	djacent Propert	y District					
Subject Property District	AG, ESD-PM, R-R3, R- R1	R-S, R-20, R- 20A, R-15, R- 12, R-10, R- 7.5, R-6	R-M8, R-M10, R-M16, R- M20, R-MA, R- MHP	OD, RU-V, NC	C-1, C-2, C-3, RU-C	S-1, I-1			
AG, ESD-PM, R-R3, R-R1	1					С			
R-S, R-20, R- 20A, R-15, R-12, R-10, R-7.5, R-6	А					С			

Table 6.2.2-1: Perimeter Buffer Requirements in Zoned Areas								
		A	djacent Propert	y District				
Subject Property District	AG, ESD-PM, R-R3, R- R1	R-S, R-20, R- 20A, R-15, R- 12, R-10, R- 7.5, R-6	R-M8, R-M10, R-M16, R- M20, R-MA, R- MHP	OD, RU-V, NC	C-1, C-2, C-3, RU-C	S-1, I-1		
R-M8, R-M10, R-M16, R-M20, R-MA, R-MHP	А	А				С		
OD, RU-V, NC	В	В	Α					
C-1, C-2, C-3, RU-C	В	В	А	А				
S-1, I-1	С	С	С	В	Α			

C. **Perimeter Buffers in Un-Zoned Areas.** Table 6.2.2-2: *Perimeter Buffer Requirements in Un-Zoned Areas* sets out the required buffer class as determined by the intensities of adjoining land uses in un-zoned areas. Land use groups, as defined in Article 23: *Definitions & Acronyms*, are used for purposes of determining the required buffer class in un-zoned areas.

Table 6.2.2-2: Perimeter Buffer Requirements in Un-Zoned Areas						
		Adjacent Property Land Use Group				
Subject Property Land Use Group		2	3	4		
1				С		
2	Α			С		
3	В	В				
4	С	С	С			

6.2.3 RIGHT-OF-WAY BUFFERS9

A. **Generally**. Except as required for Rural Scenic Road Buffers in Paragraph 6.2.3.D, below, Table 6.2.3-1: *Right-of-Way Buffer Requirements in Zoned Areas* sets out the required buffer class as determined by the classification of adjoining streets and the zoning district of the subject property. Table 6.2.3-2: *Right-of-Way Buffer Requirements in Un-Zoned Areas* sets out the

⁹ This Subsection replaces the roadside buffers required for parking lots with 10 or more spaces in zoned areas (ZO Sections

- required buffer class as determined by the classification of adjoining streets and the proposed land use group, as established in Article 23: *Definitions & Acronyms*, of the subject property.
- B. **Location.** Right-of-way buffers, as depicted in Figure 6.2.3-1: *Right-of-Way Buffers*, shall be located outside of the rights-of-way of existing roads and shall be located outside the future rights-of-way of all transportation corridor projects identified in Article 13: *Transportation Corridor Preservation*. ¹⁰

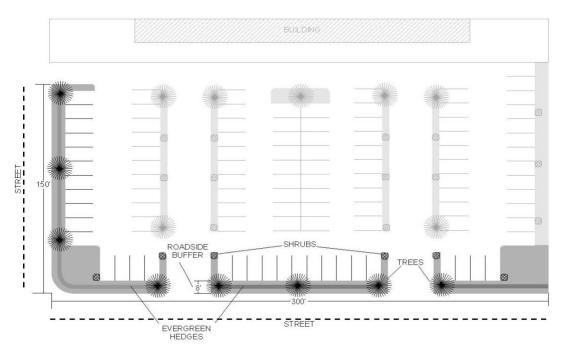


Figure 6.2.3-1: Right-of-Way Buffers

C. **Width and Plant Materials**. The widths and amount of plantings required in a right-of-way buffer are determined by multiplying such requirements of a perimeter buffer by one half. For example, a natural Class C right-of-way buffer is 25 feet in width, requires 3 shade or evergreen coniferous trees, 3 small or multi-stem trees, and 15 shrubs per 100-foot segment.

¹⁰ This Paragraph carries forward a portion of the first paragraph in ZO Section 12:4 *Parking Lot Landscaping*.

¹¹ This provision is intended to make the ROW buffer more similar to what the Zoning Code currently requires, although it is still an increase in requirements compared to current practice.

Table 6.2.3-1: Right-of-Way Buffer Requirements in Zoned Areas							
			Subject P	roperty Zon	ing District		
Adjoining Street Classification	AG, ESD-PM,	R-S, R-20, R-20A, R- 15, R-12, R-10, R- 7.5, R-6	R-M8, R- M10, R- M16, R- M20, R- MA, R-MHP	OD, NC	C-1, C-2, C-3,	S-1, I-1	R-R3, R-R1, RU- V, RU-C
Local	А	А	В	Α	В	В	А
Major or Minor Collector	Α	А	В	В	В	С	В
Principal or Minor Arterial ¹	А	В	С	В	С	С	С
Interstate	В	С	С	С	С	С	С

¹ Applies only to roads not listed in Section 6.2.3.D.: Rural Scenic Road Buffer.

Table 6.2.3-2: Right-of-Way Buffer Requirements in Un-Zoned Areas						
		Subject Property Land Use Group				
Adjoining Street Classification	1	2	3	4		
Local		А	В	С		
Major or Minor Collector	В	В	В	С		
Principal or Minor Arterial ¹	С	С	С	С		
Interstate	С	С	С	С		

¹ Applies only to roads not listed in Section 6.2.3.D: *Rural Scenic Road Buffer*.

D. Rural Scenic Road Buffer. 12

- 1. Applicability. Major Subdivisions that adjoin a designated Rural Scenic Road shall provide a rural scenic road buffer. The following roads are designated as Rural Scenic Roads:
 - (a) Jonesville Road;

¹² The Rural Scenic Road Buffer currently applies to major subdivisions in the Scuffletown Rural Conservation District that adjoin a rural scenic road. The provisions here have the effect of requiring rural scenic road buffers outside of the SRC-O. If carried forward here as generally applicable to all major subdivisions that adjoin a rural scenic road, these provisions will be removed from UDO Section 2.5.5.G. (SRC-O).

- (b) Scuffletown Road;
- (c) Lee Vaughn Road;
- (d) East Georgia Road;
- (e) Bethany Road;
- (f) Jones Mill Road;
- (g) Hunter Road; and
- (h) League Road.

2. Buffer Requirements.

- (a) Width. A minimum buffer 150 feet in width is required between any lot of a Major Subdivision and the right-of-way of any designated Rural Scenic Road. Within this buffer area there should be minimal disturbance of existing trees.
- (b) Existing Trees. In those areas where existing trees do not meet or exceed the tree requirements of a natural Class C buffer, new tree plantings shall be provided as required for a natural Class C buffer per 100-foot segment. Such trees shall not be placed within 25 feet of the road right-of-way and shall be arranged in an informal manner.
- (c) Berms, Fences, & Walls. Berms, fences, and walls are not permitted within the required buffer area.

6.3 RIPARIAN BUFFERS¹³

6.3.1 GENERALLY

A. **Applicability**. Riparian buffers shall be provided along all classes of streams in accordance with the Greenville County Soil and Water Conservation Commission Storm Water Management Design Manual.

¹³ Riparian Buffer and Stream Protection Buffer are both used in the existing regulations. They are combined here under the term "Riparian Buffer." This Section expands the current stream buffer requirements in the County's Tree Ordinance pursuant to input from staff and incorporates provisions from the County's Riparian Buffer Design and Maintenance Manual.

- B. **Exemptions**. Exemptions are allowed for appropriate CWA 404 permits and/or authorization obtained from SCDHEC and that vegetation outside the cited disturbed areas are retained.
- C. **Manual and Specifications**. Refer to the County publication "<u>Riparian Buffer Design and Maintenance Manual</u>" and Greenville County's <u>Stormwater Management Design Manual</u> Technical Specification WQ-11: *Permanent Water Quality Stream Buffer* for additional information on riparian buffers in the County.

6.3.2 STANDARDS

- **A. Riparian Buffer Widths.** ¹⁴ Except as specified further in this Section, the following riparian buffer widths are required.
 - 1. Less than 50 Acres. A minimum 50-foot riparian buffer as measured from the top of the stream bank inland shall be established along each side of all intermittent, perennial, and blue line streams draining less than 50 acres.
 - 2. 50 Acres or More. A minimum 100-foot riparian buffer as measured from the top of the stream bank inland shall be established along each side of all intermittent, perennial, and blue line streams draining 50 acres or more.
 - 3. *No Disturbance.* Within a riparian buffer the existing vegetation shall not be cleared or disturbed. Grading, stripping of topsoil, plowing, cultivating, filling, or storage of materials and machinery are prohibited within the buffer.
- B. **Encroachments.** The following structures and activities if approved by Greenville County and/or the State of South Carolina are permitted within the riparian buffer:
 - 1. Road crossings, bridges, trails, and utilities;
 - 2. Stream restoration projects;
 - Scientific studies, including water quality monitoring and stream gauging;
 - 4. Horticultural practices, including thinning and planting, may be used to maintain health of individual trees; and
 - 5. Removal of hazard trees and invasive species.

¹⁴ The current Zoning Ordinance requires riparian buffers in the Scuffletown Rural Conservation District. The provisions here have the effect of requiring riparian buffers outside of the SRC-O. If carried forward here as generally applicable throughout the County, these provisions will be removed from UDO Section 2.5.5.F. (SRC-O).

C. Riparian Buffer Easements¹⁵.

- 1. *Plat and Deed Restrictions.* Preservation of riparian buffers shall be provided by plat and deed restrictions.
- 2. Location. Any riparian buffers shall be located in common areas within residential subdivisions approved by the Planning Commission through the Preliminary Plan process.
- 3. *Individual Lots.* For individual lots created through the Summary Plat process, preservation of the buffer area shall be by plat and deed restrictions and must be protected during construction.
- D. **Delineation**. Within the proposed project boundary all jurisdictional waters of the United States or streams classified as waters of the state shall be delineated by a certified licensed professional using U.S. Army Corps of Engineers and SCDHEC's Water Classifications and Standards and shall be shown in the Stormwater Management Permit application along with all natural buffer areas.
- E. **Standards for Specific Activities.** The following standards shall apply to certain specified activities taking place in the vicinity of a body of water that requires a riparian buffer. Where these standards conflict with the riparian buffer widths required in Section 6.3.2.A: *Riparian Buffer Widths*, above, then the wider buffer width applies.
 - 1. *Disturbance*. Riparian buffer areas disturbed by construction activity or as part of a revegetation plan shall be re-vegetated using native vegetation.
 - 2. *Diffuse Flow.* Diffuse flow from stormwater runoff shall be maintained in the buffer by dispersing concentrated flow with appropriate energy dissipation measures.
 - 3. Reedy River Watershed. In the Reedy River Watershed, if existing tree density is inadequate, re-forestation may be required or stream stabilization and grassed buffers provided to meet the needed buffers described above.
 - 4. *Agricultural.* Stumping on agricultural land shall only take place outside of a riparian buffer a minimum of 75 feet in width.
 - 5. Silviculture. Removal of trees as a part of silviculture activity shall only take place outside of a riparian buffer a minimum of 40 feet in width unless authorized by the Forestry Commission for the overall health of the buffer.

¹⁵ This is from existing LDR 8.17.2.

- 6. Trout Waters. Clearing of land that has rivers, streams, or tributaries designated as fishing habitat shall only take place outside of a riparian buffer a minimum of 80 feet in width.
- 7. Existing Lake, Ponds, and Jurisdictional Wetlands. Clearing of land that has existing lakes, ponds, or jurisdictional wetlands shall only take place outside of a riparian buffer a minimum of 50 feet in width.
- 8. Endangered and Threatened Species. The presence of threatened or endangered plant species on the development site shall increase the riparian buffer to 150 feet in width. In addition, the applicant shall provide a critical areas report prepared by a qualified biologist consultant with the Preliminary Plan. The purpose of the report is to determine the extent, characteristics, and function of any critical areas or habitat that may be affected by activities on site.
- F. **Buffer Allowed Uses.** All riparian buffers shall be maintained as in-situ vegetation and free from development. Access through buffer areas shall be provided, when necessary, for maintenance purposes.
 - 1. Within Stream Side Buffer. Within the stream side zone of the buffer, only the following uses and activities are permitted:
 - (a) Passive recreation such as bird watching and walking;
 - (b) Flood control structures and stream bank stabilization;
 - (c) Installation of livestock watering points; and
 - (d) Utilities crossing and road crossings with stabilization of all disturbed areas.
 - 2. Outside Stream Side Buffer. Outside the stream side buffer area (within the managed zone) the following uses and activities are permitted:
 - (a) Utilities;
 - (b) Road crossings; and
 - (c) Bike paths and greenway trails (not to exceed 10 feet in width).
 - 3. *Fill Material.* Fill material shall not be brought into the riparian buffer.

6.3.3 REVEGETATION¹⁶

A. Applicability.

- 1. *Original State*. Generally, a riparian buffer shall be kept in its original state at the time of development with the property owner providing maintenance in accordance with Subsection 6.3.4: *Maintenance*.
- 2. *Criteria*. This Subsection applies where:
 - (a) The Assistant County Administrator for Public Works finds that the area around a waterbody is not well vegetated and not receiving the water quality benefits of a healthy buffer;
 - (b) An illegal buffer encroachment has occurred without first obtaining an authorized encroachment;
 - (c) Revegetation of a stream or wetland buffer is required as a part of an authorized encroachment; or
 - (d) A property owner is conducting a voluntary buffer restoration.

B. **Buffer Revegetation Plan.**

- 1. Generally. A Buffer Revegetation Plan specifies type, quantity, and placement of vegetation to create a healthy buffer as well as the long-term maintenance plan for caring for the buffer. The applicant shall submit to the Assistant County Administrator for Public Works a Buffer Revegetation Plan in order to demonstrate compliance with this Section.
- 2. *Contents*. A Buffer Revegetation Plan shall contain two components: a buffer revegetation site plan and a site preparation plan. Refer to Appendix A of the <u>Riparian</u> Buffer Design and Maintenance Manual for submittal requirements.
- 3. *Certification.* A Site Preparation plan shall be stamped and signed by a licensed landscape architect registered in the state of South Carolina.

C. Planting and Site Standards.

1. Disturbed Areas. For disturbed areas within the first 25 feet of the buffer measured from the top of stream bank inland, and any disturbed areas with slopes of three to two or greater, soil shall be stabilized in a manner approved by the Assistant County

¹⁶ This Section is derived from text in the "Riparian Buffer Design and Maintenance Manual" but is put in a more regulatory format.

- Administrator for Public Works until permanent vegetation is established. Only 100% biodegradable material shall be used.
- 2. Fertilizer. Fertilizers shall only be used in the 75-foot buffer area measured from the top of stream bank inland, with permission from the Assistant County Administrator for Public Works after a soil test confirms the need for additional nutrients. Fertilizer shall be slow-release, organic fertilizer and shall only provide the nutrients deemed necessary by the soil test conducted by the property owner.
- 3. *Manual Installation*. Plants shall be installed manually (no motorized vehicles or equipment).

D. Plant Species.

- 1. Plant List. Only plants listed in Table 6.1.3-2: Suggested Plant List that are shown as appropriate for riparian buffers may be installed in a riparian buffer. Invasive species¹⁷ shall not be used.
- 2. *Tree Species.* A minimum of 6 species of trees shall be planted for Buffer Revegetation Plans calling for greater than 20 trees.
- 3. Shrub Species. A minimum of 3 species of shrubs shall be planted for Buffer Revegetation Plans calling for greater than 15 shrubs. A minimum of 5 species of shrubs shall be planted for Buffer Revegetation Plans calling for greater than 50 shrubs.
- 4. *Grass Species*. A minimum of 4 species of grasses and grass-like plants, and a minimum of 2 species of forbs shall be planted when these plants are used to establish ground cover in areas greater than 1,000 square feet.
- 5. *Smaller Areas.* For areas less than 1,000 square feet, there are no minimum species requirements.
- E. **Planting Density Requirements.** All trees and shrubs shall be guaranteed for two years and replaced accordingly.
 - Quarter Acre or Less. If one quarter-acre or less of buffer area is disturbed (up to 10,890 square feet or less of buffer area), then for every 400-square-foot unit (20 feet by 20 feet) or fraction thereof, plant or install:
 - (a) One canopy tree at one and one-half inch caliper or large evergreen at 6 feet in height;

¹⁷ Invasive species means a native or non-native plant species that tends to spread uncontrollably, overwhelming other species.

- (b) Two understory trees a minimum of three-quarter inch caliper or 1 evergreen at 4 feet in height or 1 understory tree and 2 large shrubs at a minimum of 3 feet in height;
- (c) Three small shrubs or woody groundcover a minimum of 15 inches in height;
- (d) 100% vegetative cover of all exposed soil (no bare areas larger than one square foot) using native grasses, grass-like plants, and forbs; and
- (e) Organic mulch (shredded or chipped wood or leaf mulch, not including sawdust) shall be applied in a ring around the base of new trees and shrubs to aid in establishment and prevent competition by ground layer plantings.
- 2. More than a Quarter Acre. If greater than one quarter-acre of buffer area is disturbed (greater than 10,890 square feet of buffer area), then for every 400 square-foot unit (20 feet by 20 feet) or fraction thereof, plant or install:
 - (a) The waterside 50% of the riparian buffer (from the top of the stream bank inland for the first 50 feet): plant at the same rate as for one quarter-acre or less.
 - (b) From 50 feet inland to 100 feet inland trees shall be provided according to the following standards:
 - (1) A minimum of 320 trees shall be planted per acre;
 - (2) Trees may be dormant bare-root stock, but shall be at least 2 feet in height at the time of planting;
 - (3) 40% to 60% of trees shall be understory species;
 - (4) No more than 10% of required trees shall be pines; and
 - (5) To achieve a natural distribution, trees do not have to be evenly spaced.
 - (c) From 50 feet inland to 100 feet inland trees shall be provided according to the following standards:
 - (1) A minimum of 435 shrubs shall be planted per acre;
 - (2) Shrub may be containerized or bare root stock;
 - (3) If bare rooted or small containerized shrubs are used, initial planting should be greater than 538 per acre to allow for failure;
 - (4) Shrubs shall be planted in groups and more densely along the outer edges of the buffer to prevent light penetration and recolonization by invasive species; and

- (5) 100% cover of all exposed soil shall be provided using either native grasses, grass-like plants and forbs, or mulch.
- (d) Refer to Paragraph 6.3.3.E.3: *More than One Acre*, below, if the land owner proposes to disturb more than one acre of riparian buffer.
- 3. More than One Acre. If greater than one acre of buffer area is disturbed, then, with an evaluation from an arborist, forester, or other qualified professional, natural regeneration may be an acceptable method of buffer establishment. However, the property owner shall submit a forestry management plan to the Assistant County Administrator for Public Works, and receive approval of such plan, prior to any vegetation being removed. A minimum of 35 feet next to the water shall be left in a forested state and protected prior to any vegetation being removed.

6.3.4 MAINTENANCE

- A. *General.* Periodic maintenance of a riparian buffer in the form of plant removal is permitted subject to the requirements of this Subsection.
- B. *Tree Professional*. Before removal takes place, a professional arborist, forester, or other knowledgeable tree professional shall evaluate the vegetation to ensure proposed maintenance will not harm the effectiveness of the riparian buffer. The tree professional shall submit their findings to the Assistant County Administrator for Public Works.
- C. Dead and Decaying Plants. Dead and decaying plant matter on the ground may be removed if the tree professional finds that it is increasing erosion or otherwise threatening the stability of the bank.
- D. Overwhelming Species. If the tree professional finds that any species is overwhelming large portions of the buffer then the species may be removed.
- E. Removal and Pruning. Trees may be removed from the buffer if the tree professional finds that pruning is not a viable option. If pruning is proposed to take place, it shall take place according to the Riparian Buffer Design and Maintenance Manual.

6.4 ABANDONED CEMETERY BUFFERS¹⁸

6.4.1 PURPOSE

The purpose of this Section is to protect abandoned cemeteries, as defined in South Carolina Code of Laws <u>Section 27-43-40</u>, that share a common property line with or are located within new developments.

6.4.2 DESIGNATION ON APPLICATION

An abandoned cemetery shall be designated as such on any Site Plan or Subdivision Plat.

6.4.3 BUFFER REQUIREMENTS

- A. **Structured Buffer**. A structured buffer, as established in Section 6.2.1: *Generally*, shall be required to separate an abandoned cemetery from adjacent new development.
- B. **Historic Preservation Commission**. New fences or walls built to fulfill the structured buffer requirement require approval of the Historic Preservation Commission.
- C. **Height**. An existing or new fence or wall that is part of an abandoned cemetery buffer shall have a minimum height of 4 feet and a maximum height of 6 feet. The Zoning Administrator may approve existing fences or walls that are less than 4 feet or greater than 6 feet in height if the fence or wall adequately screens and protects the cemetery from the proposed development.

D. Buffer Classes.

- 1. Table 6.4.3-1: Abandoned Cemetery Buffer Requirements in Zoned Areas sets out the required buffer class as determined by the zoning district of the adjacent new development and the size of the abandoned cemetery.
- 2. Table 6.4.3-2: Abandoned Cemetery Buffer Requirements in Un-Zoned Areas sets out the required buffer class as determined by the land use group of the subject property and the size of the abandoned cemetery.
- E. Access. Design of an abandoned cemetery buffer shall allow for access as required in South Carolina Code of Laws Title 27, Chapter 43, Article 3: Access to Cemeteries on Private Property.

¹⁸ This Section is new and is intended to protect historic cemeteries.

F. **Functioning Cemeteries**. Buffer requirements as established in Section 6.2.2: *Perimeter Buffers*, shall apply to functioning cemeteries.

Table 6.4.3-1: Abandoned Cemetery Buffer Requirements in Zoned Areas									
	Adjacent New Development Zoning District								
Size of Abandoned Cemetery	AG, ESD-PM, R-R3, R- R1	R-S, R-20, R- 20A, R-15, R- 12, R-10, R- 7.5, R-6	R-M8, R-M10, R-M16, R- M20, R-MA, R- MHP	OD, RU-V, NC	C-1, C-2, C-3, RU-C	S-1, I-1			
2,000 Square Feet or Less	А	А	В	А	В	В			
More than 2,000 Square Feet	А	А	В	В	В	С			

Table 6.4.3-2: Abandoned Cemetery Buffer Requirements in Un-Zoned Areas									
	Subject Property Land Use Group								
Size of Abandoned Cemetery	1	2	3	4					
2,000 Square Feet or Less	Α	Α	В	С					
More than 2,000 Square Feet	А	В	В	С					

6.5 SCREENING FOR COMMERCIAL USES¹⁹

6.5.1 APPLICABILITY

- A. This Section applies to all new business, office, mercantile, assembly (gathering), educational, institutional, and storage uses, structures, and developments.
- B. This Section does not apply to industrial, governmental, quasi-governmental, or utility uses, structures, or developments.

¹⁹ This Section carries forward current screening standards in LDR Sections 10.3.4: *Trash Collection Facilities and Service Areas* and 10.3.7: *HVAC Screening*.

6.5.2 TRASH COLLECTION FACILITIES & SERVICE AREAS SCREENING

- A. Trash collection and service areas/loading docks must be incorporated into the overall design of the development so as to minimize the visual and acoustic impacts of these functions from adjacent properties and public streets.
- B. Trash collection and service areas that can be viewed from public roads or adjoining residential or commercial properties shall provide a minimum 6-foot tall opaque wall around the facility. Trash areas shall have a durable, opaque metal gate.
- C. These areas shall complement the principal building architecture to the extent possible.

6.5.3 EQUIPMENT SCREENING

- A. All ground-, wall-, and roof-mounted mechanical equipment, HVAC equipment, emergency generators, and other accessories (including satellite TV, electronic data dishes, and antennas) shall be screened from view from public roads and adjoining properties or their appearance shall be made less obtrusive in accordance with this Subsection. The site plan shall depict this equipment as dashed lines.
- B. Except as provided in Paragraph C, rooftop equipment shall be screened by a parapet or other architectural element that is at least equal to the maximum elevation of the equipment and is complimentary to the building's architecture.
- C. Where the elevation of an adjacent public road or adjoining property compared to the subject property is such that the screening of rooftop equipment would be ineffective, the applicant shall, at minimum, paint such equipment to match the primary color of the building.
- D. Where a building is proposed for adaptive reuse,²⁰ the applicant may either screen the equipment as required in Paragraph B, above, or paint the equipment, as provided in Paragraph C, above.

6.5.4 OUTDOOR STORAGE AREAS SCREENING

A. All outdoor storage areas, as allowed by Section 3.4.16: *Outdoor Storage*, shall be enclosed by a wall, fence, or evergreen plant material or a combination thereof measuring at least 6 feet in height.

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²⁰ The proposed definition of *adaptive reuse* is "the conversion of an existing building built for one use to another use, typically to address some aspect of physical or functional obsolescence."

B. If evergreen plant material is used, it must be at least 4 feet in height at the time of planting and capable of forming a continuous screen at least 6 feet in height. Individual plantings shall be spaced not more than 5 feet apart.

6.6 FENCES & WALLS²¹

6.6.1 APPLICABILITY

- A. This Section applies to all fences and walls with a height above average grade of 30 inches or more.
- B. The construction of a new fence or wall, or reconstruction of at least 50% of an existing fence or wall, shall comply with the standards of this Section.

6.6.2 LOCATION & HEIGHT

- A. A fence or wall shall be located entirely within the subject property, but may be located within a required setback, provided the fence or wall is aligned parallel to the adjacent property line.
- B. No fence or wall may:
 - 1. Encroach upon a public right-of-way;
 - 2. Conflict with the requirements in Section 12.4: Intersection Sight Distance;
 - 3. Interfere with any utility line; or
 - 4. Obstruct any required access point.
- C. Any fence greater than 7 feet in height requires a Building Permit.
- D. A fence that surrounds a retention or detention pond shall be at least 48 inches in height.

6.6.3 SUBDIVISION ENTRANCE WALLS

If a developer elects to have a subdivision entrance wall that intersects with existing roadways, these walls shall comply with any applicable requirements established in Chapter 19: Signs of the Greenville

²¹ This Section relates to privacy fences and walls that are not part of a required buffer. An example would be just a residential privacy fence on the perimeter of a lot. The Assessment identified this as an area where the County could use more guidance.

County Code, and the right-of-way buffer requirement. Subdivision entrance walls shall be placed outside of the right-of-way.