

ARTICLE 19
BUFFERS, TREE PROTECTION AND LANDSCAPING

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Sec. 19.1. Purpose and Intent.

Trees improve air and water quality, reduce soil erosion, reduce noise and glare, provide habitat for desirable wildlife, moderate the climate, and enhance community image and property values. Therefore, it is the intent of these regulations to encourage the protection and provision of trees through sound, responsible land development practices. Landscaping enhances a community's environmental and visual character and improves the overall quality of life. Vegetation can also improve air and water quality, reduce soil erosion, reduce noise and glare, provide habitat for wildlife, moderate the climate, and enhance property values, thus protecting the health, safety, and welfare of the community.

It is the purpose of this Article to provide environmentally sound landscape amenities and buffers which promote a positive community image by promoting quality development, enhancing property values, providing for landscape improvements in the city, and promoting orderly growth and aesthetic quality in the city. It is also the intent to promote a healthy, natural environment whenever possible by protecting and enhancing existing vegetation.

This Article also establishes standards for buffers and landscape strips. Buffers between two incompatible uses minimize harmful impacts such as transmission of noise, dust, and glare. Buffers can also lessen visual pollution, establish a greater sense of privacy from visual or physical intrusion, and thus protect the public health, safety, and welfare of the community.

Sec. 19.2. Buffer Required.

Buffers, as defined and illustrated in Article 2, shall be required as specified in this Zoning Ordinance (see Table 9.2). Buffers shall also be required for particular uses when specified in any other article of this Zoning Ordinance.

Sec. 19.3. Buffers to Be Shown on Plans and Plats.

All buffers required by this Zoning Ordinance or provided by a development shall be delineated on plans as buffers and tree save areas, unless the applicant clearly demonstrates the need for disturbance.

Sec. 19.4. Screening Required and Screening Specifications.

All buffers shall provide screening as defined. Where another provision of this Zoning Ordinance requires screening, such screening shall require compliance with this Section.

Minimum required screening shall consist of a natural buffer utilizing existing vegetation or a structural buffer, whichever provides an opaque visual screen to a height of six (6) feet, or any combination of existing and replanted vegetation which can reasonably be expected by the Zoning Administrator to create an opaque visual screen six (6) feet high within two (2) growing seasons. Where another provision of this Zoning Ordinance has different specifications for screening, the more restrictive requirements shall apply.

To achieve maximum opacity within buffers, the following alternatives, or combination thereof, shall be considered by the applicant and applied, subject to the approval of the Zoning Administrator:

- (a) Six-foot-high evergreen screening shrubs planted four (4) feet on center.
- (b) Tall evergreen trees stagger planted with branches touching ground.
- (c) Combination of small shrubs planted thirty inches (30") on center, small trees planted thirty (30) feet on center, and large trees planted forty (40) feet on center.
- (d) Six-foot (6') high masonry wall (i.e., structural buffer).

Sec. 19.5. Buffer Materials.

It is the intent of this Zoning Ordinance that, when a buffer is required, the buffer shall consist of natural, undisturbed vegetation. However, replanting of a buffer shall be required where sparsely vegetated or where screening as required by this Article cannot be provided with existing natural vegetation. This is the intent whether or not the term "natural" buffer or "natural, undisturbed" buffer is used.

Where disturbance of a required buffer is permitted by this Article, it must be replanted to a standard acceptable to provide screening as defined, and as determined appropriate by the Zoning Administrator. Natural buffers may contain deciduous or perennial vegetation, but they shall contain evergreen shrubs and trees suitable to local growing conditions that will provide a six (6) foot high opaque visual screen during all seasons of the year.

Sec. 19.6. Buffer Encroachments.

- (a) Uses Limited. Buffers shall contain no driveways, parking areas, patios, stormwater detention facilities, or any other structures or accessory uses except in the case of structural buffers, within which a fence, wall or earthen berm is constructed to provide the visual screening required to meet the standards of this Article.
- (b) Utilities. Underground utilities may be permitted to cross a buffer if the screening standards of this Article will be subsequently achieved to the satisfaction of the Zoning Administrator.
- (c) Access. Required vehicular and pedestrian access will be allowed through a buffer.

Sec. 19.7. Waiver of Required Buffer.

The Governing Body may, at the time of application for rezoning or conditional use, waive a buffer requirement of this Zoning Ordinance if the Comprehensive Plan anticipates future development on the adjoining property in a land use category (shown on the future land use plan map) such that a buffer would not be required by this Zoning Ordinance.

Sec. 19.8. Reduction of Natural Buffer by Installing Structural Buffer.

If a structural buffer is provided that creates an opaque screen to a height of no less than six (6) feet, the minimum required buffer width may be reduced by up to fifty (50) percent.

Sec. 19.9. Specifications for Structural Buffers.

Structural buffers, when installed as an alternative to a natural buffer, shall meet the following criteria, which shall be shown and compliance demonstrated on plans submitted for a land development permit as required by the Subdivision and Land Development Ordinance.

- (a) Planting. Structural buffers shall be vegetated throughout the minimum area required for the buffer on both sides of any fences or walls and upon any earthen berms, which may include grass, ground covers, shrubs, and trees.
- (b) Slope and Location of Berms. All earthen berms shall have a maximum side slope of 2 horizontal to 1 vertical. Earthen berms shall not be constructed within the drip line of any existing trees that will remain on the property.
- (c) Tree Planting Specifications. Trees shall be located or planted within any structural buffer at a density of no less than one tree for each twenty (20) feet of buffer length or portion thereof. New trees shall have a caliper of no less than two (2) inches upon planting and may be clustered for decorative effect following professional landscaping standards for spacing, location, and design.
- (d) Fence Material. Fences and freestanding walls shall present a finished and decorative appearance to the abutting property and shall be located no closer to the property line than three (3) feet. Shrubs, ground covers, or other vegetation shall be provided between the fence or wall and the property line so as to provide a decorative effect, as proposed by a registered landscaped architect or as approved

by the Zoning Administrator. Fences used in buffers must be made of rot-resistant material or protected from deterioration with water-proofing material.

Sec. 19.10. Maintenance of Buffers and Structural Buffers.

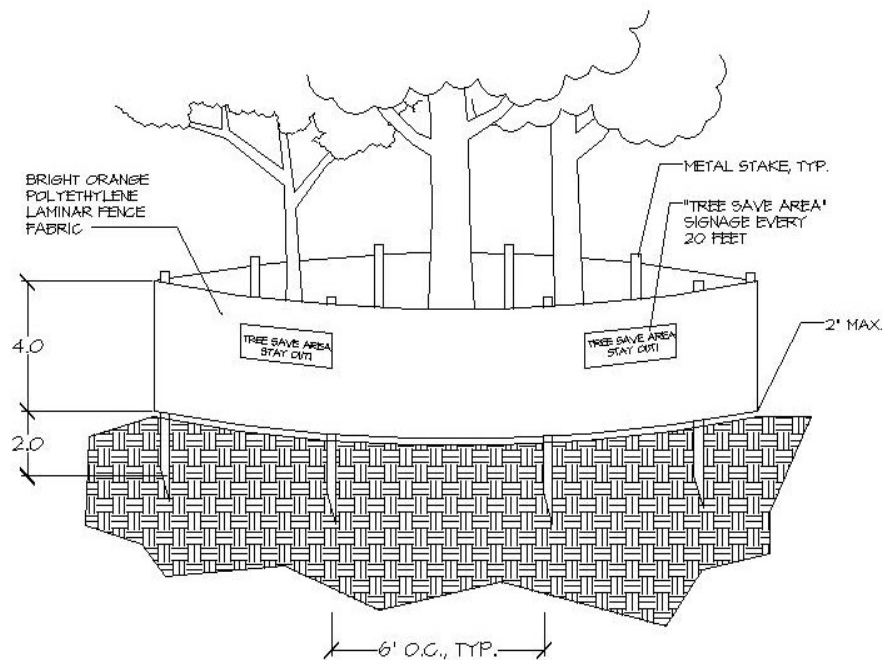
Every buffer and structural buffer required by this Zoning Ordinance shall be maintained by the owner of the property where the buffer is located, so as to provide an opaque visual screen to a height of six (6) feet on a continuous, year-round basis.

Sec. 19.11. Stream Protection Buffers.

In addition to the buffers specified in Table 9.2 or elsewhere in this Zoning Ordinance, properties shall comply as applicable with the stream protection buffer requirements specified in the city's Soil Erosion and Sedimentation Control Ordinance and any other city regulations that specify stream buffers.

Sec. 19.12. Protection of Trees During Development.

- (a) **Tree Protection Required.** Developers shall make all reasonable efforts to protect retained trees during the construction process, including but not limited to placing protective barriers around trees and marking such areas with "tree save area" signs; and not grading, excavating, or locating utilities near the critical root zones of trees.
- (b) **Protection Devices.** Tree protection devices shall be installed prior to the issuance of a land disturbance or development permit for any clearing and/or grading. Tree protection shall consist of chain link fencing, orange laminated plastic fencing supported by posts, rail fencing, or other equivalent restraining material.



FENCE LOCATION (LIMITS OF CRITICAL ROOT ZONE)

TREE PROTECTION

- (c) Maintenance. Tree protection devices shall remain in functioning condition throughout all phases of development and shall be subject to inspection by the Zoning Administrator.
- (d) Encroachment and Compaction Prohibited. All building materials, paving, vehicles, construction equipment, dirt, debris, ditches, trenches, or other objects likely to cause soil compaction or above-ground damage shall be kept outside the critical root zone of trees within tree save areas or other trees to be protected. Where a limited amount of encroachment is unavoidable and is approved by the Zoning Administrator, the critical root zone shall first be mulched with a 4" layer of processed pine bark or wood chips or a 6-inch layer of pine straw.

Sec. 19.13. Tree Retention Guidelines.

The retention of trees is the highest priority and shall take precedence over the removal of trees and replacement with smaller trees. Landscaping plans shall be reviewed for compliance with the following provisions, and noncompliance with this Section may be grounds for disapproval of landscaping plans required by this Article:

- (a) Existing trees in required landscape strips shall be retained to the maximum extent possible.
- (b) Existing trees between the building line and the street shall be retained to the maximum extent possible.
- (c) Where existing trees exist where parking lots are proposed, such trees shall be integrated into the design of the parking lot so that they may be retained in tree planting islands, to the maximum extent possible.
- (d) Any other existing trees in parking areas to the rear of the building line or elsewhere on the site shall be retained to the maximum extent possible.

Sec. 19.14. Landscape Strips Required.

Landscape strips, as defined, shall be required along right-of-ways for non-single-family uses and along side lot lines according to the zoning district in which it is located as specified in Tables 6.2, 7.2, and 9.2 of this Zoning Ordinance. Landscape strips shall also be provided if required for particular uses specified in Article 11 of this Zoning Ordinance.

Sec. 19.15. Minimum Landscaped Open Space Required.

Landscaped open space shall be provided as required by the zoning district in which the lot is located, as specified in Tables 6.2, 7.2, and 9.2 of this Zoning Ordinance.

Sec. 19.16. Landscaping Encroachments.

Landscape strips and areas devoted to meeting minimum landscaped open space requirements shall contain no structures, parking areas, patios, stormwater detention facilities, or any other accessory uses except for retaining walls or earthen berms constructed as part of an overall

landscape design, pedestrian-oriented facilities, underground utilities, driveways required to access the property, and signs otherwise permitted by this Zoning Ordinance.

Sec. 19.17. Landscape Strip Planting Specifications.

- (a) One tree shall be provided within the landscape strip for every 40 feet of length of street or property line frontage, or portion thereof. Such trees may be deciduous or evergreen, but they must be of a type that is suitable to local growing conditions and that will normally reach at least twelve (12) inches at diameter breast height upon maturity.
- (b) All portions of required landscape strips shall be planted in trees, shrubs, grass or ground cover, except for those ground areas that are mulched.
- (c) Upon planting, new trees shall have a caliper of no less than two (2) inches, and they may be planted at regular intervals or clustered for decorative effect following professional landscaping standards for spacing, location, and design and shown on a landscaping plan approved by the Zoning Administrator.

Sec. 19.18. Parking Lot Landscaping.

See Section 10.13.

Sec. 19.19. General Landscaping Provisions.

- (a) Visibility. Landscaping shall not restrict visibility of motorists or pedestrians (e.g., tall shrubs or low-lying branches of trees).
- (b) Clearance. Trees must have a clear trunk at least six (6) feet above finished grade to allow a safe clearance beneath the tree.
- (c) Curb stops. A curb or wheelstop shall be provided along interior parking lot landscape islands, perimeter landscape strips, and landscapes adjacent to street rights-of-ways, to prevent cars from encroaching on trees, shrubs, and landscapes, as approved by the Zoning Administrator.

Sec. 19.20. Landscape Plan Required.

A landscaping plan approved by the Zoning Administrator shall be required prior to the issuance of a land disturbance, development, or building permit to demonstrate compliance with the provisions of this Article.

Sec. 19.21. Contents of Required Landscaping Plan.

The landscape plan shall be based on an accurate boundary survey of the site or reasonable property description and shall include the following:

- (a) Location and general type of existing vegetation;
- (b) Existing vegetation to be saved, including tree save areas;

- (c) Methods and details for protecting existing vegetation during construction;
- (d) Locations and labels for all proposed plants and a plant list or schedule showing the proposed and minimum required quantities; and
- (e) Location and description of other landscape improvements, such as earth berms, walls, fences, screens, sculptures, fountains, street furniture, lights, and courts or paved areas.

Sec. 19.22. Guidelines for Preparing Landscaping Plans.

The following general guidance is provided.

- (a) The use of native plants as landscaping materials is encouraged wherever possible. Invasive or potentially invasive plants are not permitted. However, well-mannered non-native plants are acceptable if they are not considered invasive.
- (b) Existing tree cover and natural vegetation shall be preserved, whenever possible, or replaced with suitable vegetation.
- (c) Ground cover(s) should be used to supplement landscaping in appropriate areas to reduce the need for extensive grass lawns, which would require regular watering in drought conditions.
- (d) Grass areas shall be sodded. However, if grass seed must be used, it shall be a variety suitable to the area that produces complete coverage.
- (e) No artificial plants, trees, or other vegetation shall be installed.

Sec. 19.23. Landscape Maintenance Bond.

The owner, occupant, tenant, and respective agent of each, if any, shall be jointly and severally responsible for the maintenance and protection of all landscaping required to be installed pursuant to this Article. Prior to issuance of a certificate of occupancy, the developer or owner may be required to post a maintenance bond or cash escrow guaranteeing all landscaping materials and work for a period of two (2) years after approval or acceptance thereof by the city in a sum established by the Zoning Administrator. The bond if required will be in the amount of 100 percent of the estimated cost of replacing all of the landscaping required by these specifications, unless otherwise specified by the Zoning Administrator. At the end of two years, the Zoning Administrator shall make an inspection and notify the owner or developer and the bond company of any corrections to be made. If no maintenance is required, or if maintenance is provided by said responsible party, the Zoning Administrator shall release the bond.

Sec. 19.24. List of Approved Trees.

Table 19.1 provides a list of trees generally appropriate for planting within the City. Selection is subject to the approval of the Zoning Administrator.

Table 19.1
List of Generally Appropriate Trees

Large Trees

Scientific Name	Common Name	Comments
<i>Acer saccharum</i>	Southern Sugar Maple*^	Deciduous, urban street tree/shade tolerant
<i>Carpinus betulus fastigiata</i>	Upright European Hornbeam	Deciduous, narrow young/spreads with age
<i>Carya illinoensis</i>	Hickories, Pecans (native, fruitless)	Deciduous, shade/branches subject to breakage
<i>Celtis laevigata</i>	Sugar Hackberry*^	Deciduous, street & shade tree
<i>Fagus grandifolia</i>	American Beech*^	Deciduous, avoid post-planting disturbance
<i>Fraxinus Americana/ caroliniana</i>	White^ or Carolina Ash	Deciduous, Carolina Ash: wet habitats
<i>Magnolia grandiflora</i>	Southern Magnolia*	Evergreen, specimen tree
<i>Metasequoia glytostroboides</i>	Dawn Redwood (not a canopy tree)	Deciduous (conifer), tolerant of wet sites
<i>Nyssa sylvatica</i>	Black Gum, Black Tupelo*^	Deciduous, very hardy
<i>Pinus strobes</i>	White Pine*	Evergreen (conifer), specimen tree
<i>Pinus taeda</i>	Loblolly Pine*	Evergreen (conifer)
<i>Quercus lyrata</i>	Overcup Oak*	Deciduous, transplants well/adapts to poor sites
<i>Quercus nuttallii</i>	Nuttall Oak^	Deciduous, transplants well
<i>Quercus palustris</i>	Pin Oak^	Deciduous, specimen tree
<i>Quercus shumardii</i>	Shumard Oak*^	Deciduous, good street tree
<i>Quercus stellata</i>	Post Oak	
<i>Robinia pseudoacacia</i>	Black Locust	Deciduous, hardy tree
<i>Zelkova serrata</i>	Green Vase Japanese Zelkova^	Deciduous, good street tree/fast growth

Small Trees

Scientific Name	Common Name	Comments
<i>Acer palmatum</i>	Japanese Maple#	Deciduous, specimen tree
<i>Carpinus caroliniana</i>	American Hornbeam*	Deciduous, tough urban-tolerant & wet-tolerant
<i>Cercis canadensis</i>	Eastern Redbud*	Deciduous, spring flowering
<i>Cercis chinensis</i>	Chinese Redbud#	Deciduous
<i>Cladratis kentukea</i>	American Yellowwood*	Deciduous, specimen tree
<i>Cornus florida</i>	Flowering Dogwood**	Deciduous, specimen tree
<i>Ilex x attenuate 'Fosteri'</i>	Fosters Holly#	Broad-leaf, specimen tree/light shade-tolerant
<i>Ilex x 'Emily Bruner'</i>	Emily Bruner Holly#	Broad-leaf
<i>Ilex opaca</i>	American Holly*	Evergreen (broad-leaf), specimen tree
<i>Magnolia virginiana</i>	Sweetbay Magnolia*	Semi-evergreen
<i>Malus 'Callaway'/ x 'Dolgo</i>	Callaway Crabapple# / Dolgo Crabapple#	Deciduous, flowering & fruit/ disease resistant
<i>Oxydendrum arboretum</i>	Sourwood	Deciduous
<i>Pinus virginiana</i>	Virginia Pine	Evergreen (conifer)
<i>Pistacia chinensis</i>	Chinese Pistache	Deciduous, hardy & heat-tolerant
<i>Prunus mume</i>	Japanese Apricot#	Deciduous
<i>Prunus subhirtella var. autumnalis</i>	Fall Blooming Cherry#	Deciduous, specimen
<i>Quercus myrsinifolia</i>	Chinese Evergreen Oak*	Evergreen (broad-leaf), specimen tree

(*) Indicates native species

(^) Indicates species appropriate as either frontage/street tree or parking lot tree

(#) Indicates flowering tree species

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Parking Lot Trees

Scientific Name	Common Name	Comments
<i>Acer rubrum</i>	Red Maple [^]	Deciduous, outgrow site/shallow roots invasive
<i>Betula nigra</i> 'BNMTF'	River Birch	Deciduous, heat-tolerant/multi-branch
<i>Ginkgo biloba</i>	Ginkgo or Maiden Hair Tree [^]	Deciduous, select MALE only
<i>Liquidambar styraciflua</i>	Sweetgum (fruitless) ^{*^}	Deciduous, specimen tree
<i>Platanus occidentalis</i>	Sycamore or Planetree [*]	Deciduous, roots may be invasive over time
<i>Platanus x acerifolia</i>	London Planetree [^]	Deciduous, urban-tolerant
<i>Quercus acutissima</i>	Sawtooth Oak [^]	Deciduous, specimen tree
<i>Quercus alba</i>	White Oak ^{*^}	Deciduous, difficult to transplant
<i>Quercus coccinea</i>	Scarlet Red Oak [*]	Deciduous
<i>Quercus falcate</i>	Southern Red Oak ^{*^}	Deciduous
<i>Quercus nigra</i>	Water Oak [*]	Deciduous
<i>Quercus rubra</i>	Northern Red Oak	Deciduous
<i>Taxodium distichum</i>	Bald Cypress	Deciduous, specimen tree
<i>Ulmus parvifolia</i>	Chinese Elm (Elmer I or II) [^]	Deciduous, urban areas/drought-tolerant/pest free

Screening/Buffer Trees

Scientific Name	Common Name	Comments
<i>Cedrus atlantica</i>	Atlas Cedar	Conifer, specimen tree
<i>Cedrus deodora</i>	Deodar Cedar	Conifer, specimen tree
<i>Cotinus Coggygria</i>	American Smoketree	
<i>Cryptomeria japonica</i>	Japanese Cryptomeria	Conifer, light shade-tolerant
<i>x Cupressocyparis leylandii</i>	Leyland Cypress	Conifer
<i>Ilex attenuata</i>	Fosters Holly	Broad-leaf, specimen tree/light shade-tolerant
<i>Ilex x 'Nellie R.</i>	Nellie R. Stevens Holly	Broad-leaf, specimen tree
<i>Ilex cassine</i>	Cassine Holly [*]	Broad-leaf
<i>Ilex opaca</i>	American Holly [*]	Broad-leaf, specimen
<i>Ilex opaca 'Greenleaf'</i>	Greenleaf Holly	Broad-leaf, compact habit of growth
<i>Ilex vomitoria</i>	Yaupon Holly [*]	Broad-leaf
<i>Juniperus virginiana</i>	Red Cedar [*]	Conifer, not shade-tolerant
<i>Magnolia grandiflora</i>	Southern Magnolia [*]	Broad-leaf, specimen tree
<i>Pinus strobes</i>	White Pine [*]	Conifer, specimen tree
<i>Pinus taeda</i>	Loblolly Pine [*]	Conifer
<i>Pinus virginiana</i>	Virginia Pine [*]	Conifer
<i>Prunus caroliniana</i>	Carolina Cherrylaurel	Broad-leaf, susceptible to ice damage
<i>Quercus myrsinifolia</i>	Chinese Evergreen Oak [*]	Broad-leaf, specimen tree
<i>Thuja 'Green Giant'</i>	Green Giant Arborvitae	Conifer, hardy/adapts well to saturated clay soils
<i>Thuja occidentalis</i>	Northern White-Cedar; Eastern Arborvitae	
<i>Tsuga Canadensis</i>	Canadian Hemlock [*]	Conifer, best in filtered shade in piedmont

(*) Indicates native species

(^) Indicates species Used as either frontage/street tree or parking lot tree

(#) Indicates flowering tree species

Source: "Treescape: A Citizen's Guide for Urban Tree Planting." (A resource published by the Cooperative Extension Service, University of Georgia College of Agriculture).