

Tree Canopy Conservation Ordinance

City of Winterville, Georgia

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ARTICLE I: GENERAL

1. Title

- 1.1. There is hereby established a *Tree Canopy Conservation Ordinance* for the City of Winterville, Georgia, which shall also be known as the “tree ordinance”.

2. Purpose and Intent

- 2.1. The purposes of the tree ordinance are:

- 2.1.1. To manage trees for the benefit of the entire community, individual citizens, businesses, and the natural environment;
- 2.1.2. To maintain and enhance the historic character of the city’s community forest through the conservation and protection of its trees; and,
- 2.1.3. To manage the conservation and establishment of tree canopy during the land development process.

- 2.2. It is the city’s intent to utilize trees and tree canopy:

- 2.2.1. To maintain an average of 55 percent tree canopy cover across the city, representing no net loss of tree canopy cover into the future;
- 2.2.2. To maintain a minimum amount of tree canopy cover across each zoning district, on each development, and on each lot regulated by this ordinance;
- 2.2.3. For the functions they provide including improving air, soil and water quality, sequestering carbon and reducing stormwater runoff;
- 2.2.4. To maximize the environmental, economic and social benefits of trees; and,
- 2.2.5. To maintain and enhance the aesthetic appearance of our community.

3. Applicability and Exemptions

- 3.1. The tree ordinance shall generally apply to all real property within the city limits of Winterville, both city-owned and privately-owned.
- 3.2. The tree ordinance shall apply to all protected trees.
- 3.3. The tree ordinance shall apply to any property or activity that requires a land disturbance activity permit.
- 3.4. Residential lots of record as of the date of adoption of this ordinance, both developed and undeveloped, are exempt, except when a land disturbance activity permit is required.
- 3.5. Additional exemptions are as set forth further in this ordinance.

4. Definitions

- 4.1. The meanings of specific terms used in this ordinance are defined below; terms not defined here shall have their common meaning or shall have the meaning as defined in professionally accepted arboricultural standards and best management practices.
- 4.1.1. *Administrator.* The person responsible for administration of this tree ordinance; the Mayor of the City of Winterville or his/her designee.
- 4.1.2. *ANSI.* Acronym for American National Standards Institute.
- 4.1.3. *Arboriculture.* The practice and study of the care of trees and other woody plants in the landscape.
- 4.1.4. *Boundary tree.* A tree located such that its trunk or one or more of its major structural roots are growing on top of a boundary line between adjacent properties.
- 4.1.5. *Caliper.* A standard of trunk measurement for nursery stock and newly planted trees. Caliper is the diameter of the tree trunk measured in inches at 6 inches above the ground for trees up to and including 4-inch caliper and at 12 inches above the ground for trees larger than 4-inch caliper. This measurement does not apply to established trees for which DBH is used instead.
- 4.1.6. *Canopy.* The collective branches and foliage of a tree or group of trees that projects shade onto the ground.
- 4.1.7. *Certified arborist.* Professional who possesses the technical competence gained through experience and related training to provide for or supervise the management of trees and other woody plants in residential, commercial, and public landscapes whose level of training is certified by the International Society of Arboriculture.
- 4.1.8. *City.* The City of Winterville, Georgia.
- 4.1.9. *City of Winterville Tree Species List.* A list of trees approved and adopted by the City of Winterville Mayor and City Council and as amended from time to time that includes tree species approved for planting in the City of Winterville.
- 4.1.10. *Conservable tree.* A healthy tree measuring at least 4 inches DBH that can and will be protected in accordance with the technical standards set forth herein.

- 4.1.11. *Conserved tree canopy cover.* That portion of the tree canopy cover on a site represented by existing individual trees and forested areas that are conserved and remain on a site after development is completed.
- 4.1.12. *Critical root zone.* A more-or-less circular area above and extending 24 inches below the ground around the trunk of a tree with a radius equivalent to the distance to the dripline, or 1.25 feet for every 1 inch in DBH, whichever is larger, or an area otherwise established by a certified arborist. The critical root zone increases in size as a tree grows larger.
- 4.1.13. *Crown.* The upper part of a tree, measured from the lowest branch, including all the branches and foliage.
- 4.1.14. *DBH.* An acronym for diameter at breast height; a standard measurement of tree size; the diameter of a tree trunk measured at 4.5 feet above ground.
- 4.1.15. *Deciduous tree.* A tree that sheds all of its leaves according to a genetically scheduled cycle as impacted by climate factors (usually during the cold season in temperate zones).
- 4.1.16. *Dripline.* An imaginary boundary on the soil surface defined as the vertical projection at the greatest extent of the branches of a single tree or group of trees.
- 4.1.17. *Evergreen tree.* A tree that does not shed all of its foliage annually.
- 4.1.18. *Forested area.* An area which contains a density of more than 100 trees 6 inches DBH or larger per acre, and which is 70 percent or more covered in tree canopy at full leaf-out.
- 4.1.19. *GFC.* Georgia Forestry Commission; the state agency responsible for providing leadership, service and education in the protection and conservation of Georgia's forest resources.
- 4.1.20. *Hazardous tree.* A tree that is at risk for failure because it is dead or structurally defective, in a location where that failure could result in personal injury or property damage.
- 4.1.21. *Healthy tree.* A tree that is vigorous as indicated by leaf color and annual shoot extension, with a relatively symmetrical form typical of the species, with one-third or more of its height in live crown (live crown ratio of 33 percent or more), with roots, trunk and crown absent of extensive and significant signs of insect or disease infection, wounds or other mechanical

damage, decay and structural defects. For pine trees the live crown ratio may be less than 33 percent and the tree still otherwise considered healthy.

- 4.1.22. *Invasive species.* A non-native plant or animal that is likely to spread, disrupting the natural balance of an ecosystem.
- 4.1.23. *ISA.* International Society of Arboriculture. A worldwide professional organization dedicated to fostering a greater appreciation for trees and to promoting research, technology and the professional practice of arboriculture. This organization administers certification programs of arborists, tree workers, utility arborists, and municipal arborists.
- 4.1.24. *Landmark tree.* Any tree 18 inches DBH or larger on undeveloped properties; any healthy tree officially designated by the tree commission at the request of the tree owner as a community landmark due to its species, size, configuration, historical significance or other notable characteristic.
- 4.1.25. *Leaf litter.* Dead plant material, such as leaves, bark, needles, and twigs, that has fallen to the ground.
- 4.1.26. *Live crown ratio.* The vertical extent of a tree's live crown as compared to its total height and expressed as a fraction or percent.
- 4.1.27. *Open soil surface area.* The minimum area around a planted tree that shall remain in a permeable condition as specified in the *City of Winterville Tree Species List*.
- 4.1.28. *Overstory tree.* A tree that typically forms the upper canopy of a natural forest. For the purposes of this tree ordinance, a large or medium canopy tree as defined in the *City of Winterville Tree Species List*.
- 4.1.29. *Planting season.* The months of December, January, and February when trees are typically dormant in north Georgia.
- 4.1.30. *Protected tree.* Any tree conserved or planted to meet minimum tree canopy cover requirements as shown on a tree canopy plan on any property developed after tree ordinance adoption, except that all trees located on residential lots are exempt after a certificate of occupancy has been issued; any tree growing on city property; any tree 4 inches DBH and larger growing on developed, non-residential property; any tree growing on an undeveloped property, except for trees growing on residential lots of record that are not part of a developing subdivision; and, all landmark trees.

- 4.1.31. *Riparian buffer.* A vegetated area near a stream, usually forested, which helps shade and partially protect a stream from the impact of adjacent land uses.
- 4.1.32. *Scaffold limb.* Permanent or structural branches that form the scaffold architecture or structure of a tree.
- 4.1.33. *Street tree.* Trees growing along street frontages, either within the city street right-of-way or within 10 feet of the lot line in the front yards of adjacent lots.
- 4.1.34. *Supplemental support system.* A mechanical system of cables and bracing rods used to limit movement or provide supplemental support to tree trunks, scaffold limbs, large branches or entire trees.
- 4.1.35. *Timber harvesting.* The cutting and removal of trees for delivery as sawtimber, pulpwood, logs, poles, posts or wood chips to any woodyard or processing plant.
- 4.1.36. *Topping.* The severe cutting back of limbs to stubs larger than 3 inches in diameter within the tree's crown resulting in removal of the normal canopy and disfiguration of the tree.
- 4.1.37. *Tree.* A woody perennial plant usually having one (1) dominant trunk, but sometimes multiple trunks, that typically attains a mature height of at least 15 feet and a DBH of at least 3 inches.
- 4.1.38. *Tree canopy cover area.* The area in square feet contained within the dripline of a tree.
- 4.1.39. *Tree canopy cover credit.* For newly planted trees, the square feet of tree canopy cover area assigned to the tree at time of planting based on its species and expected mature size as defined in the *City of Winterville Tree Species List*. For the purposes of this tree ordinance, very small trees are credited with 150 square feet, small trees are credited with 400 square feet, medium trees are credited with 900 square feet, and large trees are credited with 1,600 square feet of tree canopy cover area.
- 4.1.40. *Tree canopy cover percent.* The total amount of tree canopy cover area on a site, within a development, or across the community divided by the total area of the site, development, or community, expressed as percent.
- 4.1.41. *Tree canopy plan.* A required plan submitted prior to the approval of a development permit that depicts the location and characteristics of existing

trees on a site and the trees that will be conserved, protected, and planted in accordance with the requirements of the tree ordinance.

- 4.1.42. *Tree City USA*. A program of the Arbor Day Foundation that recognizes communities that have in place a community forest management framework that includes a tree ordinance, a tree board, an annual Arbor Day celebration, and an annual expenditure of \$2 per capita on trees.
- 4.1.43. *Tree protection plan*. A required plan submitted with a tree canopy plan or for encroachment of a city tree that depicts and describes how a tree will be protected in accordance with the requirements of the tree ordinance.
- 4.1.44. *Tree protection zone*. The area around a tree that includes the critical root zone and the soil it contains, and the entirety of the trunk, scaffold limbs, branches and leaves of the tree, where specific activities harmful to trees are prohibited.
- 4.1.45. *Understory tree*. A tree that typically forms the lower canopy of a natural forest. For the purposes of this tree ordinance, a very small or small canopy tree as defined in the *City of Winterville Tree Species List*.
- 4.1.46. *Unhealthy tree*. As determined by a certified arborist, a tree demonstrating one or more signs of loss of vigor and decline, as indicated by atypical leaf color, recurring short annual shoot extension, or less than one-third live crown ratio, or severe insect or disease infestation, or with damage or structural defects that may include, but are not limited to: severed or damaged roots larger than 2 inches in diameter within the critical root zone; signs of previous topping or other improper pruning practices resulting in decay or a structural defect; longitudinal cracks in the trunk; wounds that encompass greater than one-third of the circumference of the trunk; trunk cavities equal to or greater than two-thirds of the trunk diameter at the point of the cavity; cracks, wounds, or cavities of one or more of the scaffold limbs resulting in a structural defect that cannot be corrected to ensure a safe or healthy condition; and, any other defect that cannot be corrected through standard arboricultural practices.

5. Administration

- 5.1. The Mayor of the City of Winterville or his/her designee shall be the administrator of this ordinance.

6. City Arborist

- 6.1. There is hereby established the role of city arborist who shall be a certified arborist or registered forester.
 - 6.2. The city arborist shall serve under the direction of the Mayor.
 - 6.3. The city arborist may be city staff or a consultant hired to work on a contract basis.
 - 6.4. The duties and responsibilities of the city arborist shall include, but are not limited to:
 - 6.4.1. Assist the director of public works in the preparation of annual tree maintenance work plans for city trees based on the most recent tree inventory, a community forestry budget, and specifications for tree care operations;
 - 6.4.2. Assist the director of public works by providing technical expertise and coordination of the city tree care operations and the installation and maintenance of plant materials on city properties;
 - 6.4.3. Review and make recommendations to City of Winterville Planning and Zoning Commission on approval, denial, or approval with conditions of all development permit applications, tree canopy plans, tree protection plans, and requests for variances to the tree ordinance;
 - 6.4.4. Review tree removal permits and conduct site visits to consult with property owners on tree removal and tree canopy replacement requirements; approve or deny tree removal permit applications;
 - 6.4.5. Notify the code enforcement officer of potential violations of the tree ordinance;
 - 6.4.6. Serve as an ex-officio member of the Winterville Tree Commission;
 - 6.4.7. Provide a written report on current tree activities prior to each of the tree commission's regular meetings and at least annually to the city council; and,
 - 6.4.8. Provide tree care information and education to city officials, the tree commission and the public.
 - 6.5. It shall be unlawful for any person to prevent, delay or interfere with the city arborist while engaging in his/her duties and responsibilities, as described herein or as directed by the administrator.
7. Establishment of a Winterville Tree Commission
- 7.1. There is hereby established a Winterville Tree Commission, also known as the "tree commission" which shall consist of at least three (3) but no more than seven (7) voting members.

- 7.2. Voting members shall be residents of the city.
- 7.3. Voting members shall be appointed by the Mayor with the approval of the City Council.
- 7.4. The terms of voting members shall be 3 years.
- 7.5. Members may be reappointed for an unlimited number of successive terms.
- 7.6. Ex-officio (non-voting) members may be appointed by the tree commission and may include the director of public works or his designee, the city arborist, the Georgia Forestry Commission Sustainable Community Forestry Program Forester, and the Athens-Clarke County Community Forestry Coordinator.
- 7.7. The tree commission shall meet at least quarterly.
- 7.8. The tree commission shall choose its own officers, make its bylaws and keep a written record of its proceedings.
- 7.9. A majority of voting members shall be a quorum for the transaction of business.
- 7.10. The tree commission's duties and responsibilities shall include, but are not limited to, the following:
 - 7.10.1. Make recommendations to City Council on city tree management issues and maintenance activities;
 - 7.10.2. Develop a program for the designation of landmark trees within the city including program guidelines and an application for landmark tree status; accept and approve or deny applications for landmark tree status; maintain a current list of designated landmark trees;
 - 7.10.3. Periodically review the tree ordinance and make recommendations for revision to the City Council;
 - 7.10.4. Develop a community tree management program plan; update at least every 5 years;
 - 7.10.5. Prepare and conduct an annual tree care education program;
 - 7.10.6. Notify the code enforcement officer of potential violations of the tree ordinance;
 - 7.10.7. Prepare an annual report detailing the tree commission's activities and all community tree management activities completed in the previous year; and,
 - 7.10.8. Prepare and submit to the Georgia Forestry Commission the city's annual application for certification as a Tree City USA.

7.11. It shall be unlawful for any person to prevent, delay or interfere with the tree commission, or any of its agents, while engaging in their duties and responsibilities, as described herein or as directed by the administrator.

8. Protected Trees

8.1. There is hereby established a category of trees within the city that shall be known as “protected trees”.

8.2. Protected trees shall include all:

8.2.1. Trees on city property;

8.2.2. Trees on undeveloped property;

8.2.3. Trees 4 inches DBH or larger on developed, non-residential property;

8.2.4. Trees conserved or planted to meet tree canopy cover requirements as shown on an approved tree canopy plan; and,

8.2.5. Landmark trees.

8.3. Trees conserved or planted to meet tree canopy cover requirements on residential lots within a subdivision after the certificate of occupancy has been issued are exempt.

8.4. Trees growing on developed or undeveloped residential lots of record as of the date of adoption of this ordinance that are not part of a developing subdivision are exempt.

9. Administrative Guidelines to the Tree Canopy Conservation Ordinance

9.1. There are hereby established and made a part of this ordinance *Administrative Guidelines to the Tree Canopy Conservation Ordinance*, also known as “administrative guidelines”.

9.2. Compliance with the administrative guidelines is required for any protected tree or activity regulated by this tree ordinance.

9.3. The administrative guidelines may be modified by the administrator to maintain tree ordinance effectiveness and alignment with its intent. The administrator may ask the city arborist and the tree commission for recommendations for changes to the administrative guidelines.

9.4. The administrative guidelines shall include: plans review and permit application fee schedule; technical standards for tree care operations; and, an official tree species list.

- 9.4.1. *Definitions.* The terms used within this tree ordinance shall have the meanings as defined in the administrative guidelines.
- 9.4.2. *Technical Standards.* All tree care operations required by the tree ordinance shall be executed in compliance with the technical standards set forth in the administrative guidelines, and the most current American National Standards Institute (ANSI) *A300 Standards for Tree Care Operations, Z133.1 Safety Standards*, and *Z60.1 American Standard for Nursery Stock*, as well as ISA best management practices, all of which shall be available for review at the City of Winterville city hall.
- 9.4.2.1. Any person or firm subject to the requirements of this tree ordinance is encouraged to seek professional assistance from the city arborist, a registered forester or certified arborist. A list of consulting foresters and arborists is available from the Georgia Forestry Commission, and certified arborists can be located online on the ISA website.
- 9.4.2.2. Any person or firm subject to the requirements of this tree ordinance is encouraged to hire only qualified, established businesses to perform arboricultural services, to require references for similar work performed before hiring, and to require separate insurance for property damage, personal liability, vehicles, and worker's compensation. The hiring of arboricultural businesses and tree services that employ certified arborists who can supervise the requested work is highly recommended.
- 9.4.2.3. The administrator may waive any technical standard to best meet the purpose and intent of this tree ordinance. When granted, waivers shall be recorded in writing on the permit application, the tree canopy plan, or other permanent record.
- 9.5. *Approved Tree Species List.* There is hereby established a *City of Winterville Tree Species List*, also known as the "tree species list", which is located within the administrative guidelines. No species other than those included on the tree species list may be planted as street trees, for tree canopy cover credit, or to satisfy any requirement of this ordinance, unless otherwise approved by the tree commission.

10. City Tree Care

- 10.1. The city shall have the right to plant, prune, maintain and remove trees on city property including within the city street right-of-way, for the purposes of maintaining a healthy and sufficient tree canopy, ensuring public safety, and preserving and enhancing the beauty of city property.
- 10.2. The planting of street trees on the city street rights-of-way by adjacent property owners is not prohibited if such tree planting is in accordance with the technical standards and is approved by the city arborist.
- 10.3. It shall be unlawful as a normal practice for any person, business or city department to top any street, park, or other city tree. Trees severely damaged by storms or other causes, or certain trees under utility wires or other obstructions shall be crown reduction pruned in accordance with the technical standards and shall not be topped, except when such trees pose an imminent threat to public safety.
- 10.4. All stumps of street, park and other city trees shall be removed below the surface of the ground so that the top of the stump shall not project above the surface of the ground.

11. Protection of City Trees

- 11.1. It shall be unlawful to damage or destroy any city tree for any reason, unless removal and canopy replacement is approved by the city arborist or the Director of Public Works. Should city trees be damaged or destroyed, the person or agent responsible for the damage or destruction shall be required to reimburse the city for the appraised value of the tree immediately prior to the damage and may, in addition, be subject to a fine for the violation of this ordinance. The tree value shall be calculated by a certified arborist and based on the latest edition of the *Guide for Plant Appraisal*, developed by the Council of Tree and Landscape Appraisers and published by the International Society of Arboriculture.
- 11.2. Any activity on city or private property that will encroach on the critical root zone of a city tree requires the submittal of a tree protection plan; such activity shall not commence until the tree protection plan is approved.

12. Pruning and Removal of Private Property Trees for Public Safety Purposes

- 12.1. The owner of any tree overhanging any street or right-of-way within the city shall prune the branches so that such branches shall not obstruct the light from any street lamp or obstruct the view of any street intersection and so that there shall be a clear space of 8 feet above the surface of the street or sidewalk. Said owners shall remove all dead, diseased or dangerous trees, or broken or decayed limbs which constitute a threat to public safety. The city shall have the right to prune any tree or shrub on

private property when it interferes with the proper spread of light along the street from a street light, poses a hazard to street traffic or pedestrians, or interferes with visibility of any traffic control device or sign.

13. Boundary Trees

- 13.1. When any portion of a tree trunk, including the exposed structural roots, is growing on the boundary line between adjoining properties, the tree shall be considered a boundary tree.
- 13.2. Boundary trees shall be the common property of both (all) owners of the properties on which the tree is growing.
- 13.3. Boundary trees shall not be removed, the structural roots or trunk shall not be damaged or destroyed, or the limbs and branches shall not be removed beyond the owner's property line, by one property owner without the consent of the other property owner(s).
- 13.4. Tree ordinance compliance shall be the shared responsibility of all owners of a boundary tree.

ARTICLE II: DEVELOPMENT REQUIREMENTS

14. Minimum Tree Canopy Cover Requirements by Zoning District

- 14.1. All tree conservation and planting activities undertaken to satisfy tree canopy cover requirements shall be done in accordance with the technical standards set forth in the administrative guidelines.
- 14.2. Minimum tree canopy cover requirements shall apply to all properties for which a preliminary plat application, land disturbance activity permit application, or building permit application for commercial property is submitted or for any property that has an approved tree canopy plan.
- 14.3. Residential lots developed as of the date of the adoption of this ordinance, and for which a certificate of occupancy has been issued, are exempt from tree canopy cover requirements.
- 14.4. Residential lots that are developed after the adoption of this ordinance and are part of a subdivision developing under an approved tree canopy plan shall be exempt from tree canopy cover requirements after a certificate of occupancy has been issued.
- 14.5. Undeveloped residential lots that are not part of a subdivision developing under an approved tree canopy plan are exempt from tree canopy cover requirements, except when a land disturbance activity permit is required.

14.6. For all other undeveloped sites and lots, the minimum amount of tree canopy cover required upon development or improvement, both total and conserved portions, shall be as listed in Table 1.

Table 1. Minimum Required Tree Canopy Cover by Zoning District on Sites and Lot

Zoning District	Total Tree Canopy Cover Required		Conserved Portion of Tree Canopy Cover Required	
	Overall Site	Individual Lot	Overall Site	Individual Lot
R12H	60%	50%	30%	20%
R15H	60%	50%	30%	20%
R15H Professional/Limited Commercial Site	60%	50%	30%	20%
R18H	60%	50%	30%	20%
R20H	60%	50%	30%	20%
Rural Residential	60%	30%	30%	15%
C1 Commercial District/General Business	40%	n/a	15%	n/a
PLC Professional/Limited Commercial District	50%	n/a	20%	n/a
G Government District	60%	n/a	30%	n/a

14.7. When existing tree canopy cover on a property is less than the amount of total or conserved tree canopy required, then the remainder of the total tree canopy cover amount shall be satisfied with the planting of new trees.

14.8. Trees in riparian or visual buffers within the property boundaries shall be eligible for tree canopy cover credit.

14.9. The amount of tree canopy cover credit assigned to existing trees shall be the square foot area encompassed by the actual projection of the canopy onto the ground at the dripline of the tree or group of trees within the property boundaries, or for individually growing trees the canopy cover the tree is expected to attain at maturity based on its mature size as set forth in the *City of Winterville Tree Species List*, whichever is greater; or the amount of tree canopy cover as otherwise stated herein.

14.10. The amount of tree canopy cover credit assigned to planted trees shall be the amount the tree is expected to attain at maturity based on its mature size as set forth in the *City of Winterville Tree Species List*.

14.11. Tree canopy cover proposed for conservation above the requirements listed in Table 1 shall be eligible for a bonus amount of tree canopy credit of 10 percent. *For*

- example, 1,000 square feet of actual tree canopy cover above the requirement may be counted as 1,100 square feet.*
- 14.12. On all lots, landmark trees proposed for conservation shall be eligible for a bonus amount of tree canopy cover of 20 percent. *For example, 1,000 square feet of actual tree canopy cover originating from a landmark tree may be counted as 1,200 square feet.*
- 14.13. When a landmark tree that has been conserved in accordance with an approved tree canopy plan is removed from a property with an approved tree removal permit, the amount of tree canopy cover it was assigned—including the bonus amount—shall be replaced on the site during the next planting season after removal.
- 14.14. When a landmark tree that has been conserved in accordance with an approved tree canopy plan is removed from a property without an approved tree removal permit, the tree shall be replaced with two (2) times the amount of tree canopy cover it was assigned, including the bonus amount.
- 14.15. Only one bonus shall apply to a tree or group of trees; trees shall not be eligible for both a bonus credit for conservation above the requirements and a bonus credit as a landmark tree.
- 14.16. A property owner may apply for a variance from the tree canopy cover requirements if he/she feels that the conservation or planting of trees is not possible or practical on a site and describes in detail and in writing the reasons for not being able to meet the requirements.
- 14.17. If a variance is approved, a payment shall be made to the city for the tree canopy cover requirement deficit in the amount listed in the city's current fee schedule, to be used for public tree planting and maintenance.
- 14.18. The amount of total tree canopy cover required shall remain on the site in perpetuity for properties subject to the requirements of this tree ordinance.
- 14.19. The administrator may waive a portion or all the replacement planting requirements for the removal of a landmark tree. If a waiver is granted, the owner shall be required to make a payment to the city in lieu of planting replacement trees in an amount listed on the city's current fee schedule, to be used for public tree planting and maintenance.
15. Tree Canopy Cover in Parking Lots
- 15.1. The amount of tree canopy cover required in parking lots shall be 50 percent.

- 15.2. Tree canopy cover shall be evenly distributed throughout the parking area, and no parking space shall be farther than 50 feet from a tree, either conserved or planted.
- 15.3. At least 75 percent of the tree canopy cover credit in a parking lot shall originate from the conservation of existing trees or the planting of large canopy trees, or a combination of both.

16. Street Trees

- 16.1. Trees shall be required as part of the streetscape on either side of the front lot line in accordance with Section 3.5.1.a.iii and Section 3.6.2.e of the *City of Winterville Subdivision Ordinance*, or may be bonded and installed during the next planting season following the completion of construction of structures on the site.
- 16.2. A minimum of one (1) street tree shall be conserved or planted for each 30 feet of frontage for that portion of the development fronting the street.
- 16.3. Trees planted to satisfy the street tree requirements shall be the largest canopy size that fits the available growing space and meets the tree establishment standards set forth in the technical standards.
- 16.4. Where feasible, existing healthy trees on the site or lot of greater than 4 inches DBH shall be incorporated into the required streetscape.
- 16.5. Trees may be spaced at variable distances to conform to site selection standards and average minimum distances set forth in Table B1 of the technical standards.
- 16.6. Street trees shall be selected from the species recommended for use in road frontage areas in the *City of Winterville Tree Species List*. Other species may be used as street trees with the approval of the administrator.
- 16.7. Street trees shall be planted on private property within 20 feet of the lot line for large canopy trees, 10 feet of the lot line for medium canopy trees, and 5 feet of the lot line for small and very small canopy trees. Street trees may be planted in another location on the lot if approved by the administrator or within the city street right-of-way if approved by the city arborist.
- 16.8. Street trees may not be allowed in traffic vision clearance zones designated by the Athens-Clarke County Director of Transportation and Public Works or the City of Winterville Director of Public Works.

17. Tree Removal Permit

- 17.1. A tree removal permit shall be required prior to the removal of any protected tree, except for the removal by the city of protected trees located on city property and

except for the removal by the property owner of landmark trees located on residential properties.

- 17.2. An approved tree canopy plan shall be considered an approved tree removal permit for development projects.
- 17.3. Upon receipt of a tree removal permit application, the city arborist shall visit the site with the applicant to discuss the removal and the replacement of tree canopy if removal is approved.
- 17.4. The amount of tree canopy approved for removal shall be replaced on the site during the next planting season after the removal. Tree canopy removed without a required tree removal permit shall be replaced on the site in an amount equal to the two (2) times the amount removed. If required planting is not completed by the end of the next planting season after the removal, a fine shall be imposed in accordance with Section 22 and Section 23 of this ordinance.
- 17.5. A tree removal permit shall not be required for dead trees, any tree which has become a danger to human life or property, or trees found to be diseased or insect infested by the city arborist or a certified arborist.
- 17.6. A tree removal permit application fee shall be required at the time of application in an amount set forth in the city's current fee schedule, located in section A of the administrative guidelines.

18. Tree Canopy Plan

- 18.1. A tree canopy plan shall be submitted as part of any minor or major preliminary or final plat application, land disturbance activity permit application, or non-residential building permit application. An approved tree canopy plan shall be required before such applications shall be approved.
- 18.2. The city arborist shall be responsible for reviewing all tree canopy plans within 15 business days of submittal and shall make a recommendation to the Winterville Planning and Zoning Commission on whether the tree canopy plan shall be approved, denied, or approved with changes.
- 18.3. A tree canopy plan review fee shall be required at the time of plan submittal in an amount set forth in the city's current fee schedule, located in section A of the administrative guidelines.
- 18.4. No certificate of occupancy shall be issued on a property until all requirements of this tree ordinance have been satisfactorily met, and the site is in full compliance with the

- tree canopy plan, tree protection plan, and administrative guidelines as determined by the administrator.
- 18.5. The tree canopy plan shall include the following information:
- 18.5.1. A table summarizing how tree canopy requirements will be met with conserved and planted trees;
 - 18.5.2. Trunk location, DBH, and species of all individually growing trees 4 inches DBH and greater proposed for removal; trees with intermingled canopies may be identified as a tree group or forested area;
 - 18.5.3. Trunk location, species, DBH, location of the critical root zone and square feet of tree canopy cover of individual trees proposed for conservation; trees with intermingled canopies may be identified as a tree group with location of the groups critical root zone and square feet of tree canopy cover represented by the group indicated;
 - 18.5.4. Trunk location, species, and caliper of all trees proposed for planting on the site to meet minimum tree canopy cover requirements;
 - 18.5.5. Location of tree protection fencing for conserved trees; notation on other methods of tree protection to be used;
 - 18.5.6. A 3-year maintenance plan and schedule for planted trees to include timing of mulching, irrigation and pruning; contact information for person responsible for implementing the maintenance plan;
 - 18.5.7. Location and type of all existing and proposed utilities; and,
 - 18.5.8. Grade changes, areas of excavation and fill, location of retaining walls, and other changes to the existing grade that may affect the critical root zones of trees proposed for conservation.

19. Tree Protection Plan

- 19.1. All trees conserved to satisfy the requirements of this tree ordinance, and all city trees shall be actively protected within the tree protection zone during construction in accordance with the technical standards.
- 19.2. A tree protection plan shall be submitted with all tree canopy plans, and may be a separate plan or made a part of the tree canopy plan.
- 19.3. The city arborist shall be responsible for reviewing all tree protection plans that are part of a tree canopy plan within 15 business days of submittal and shall make a

recommendation to the Winterville Planning and Zoning Commission on whether the tree protection plan shall be approved, denied, or approved with changes.

- 19.4. Any activity on city or private property that will encroach on the tree protection zone of a city tree requires the submittal of a tree protection plan; such activity shall not commence until the tree protection plan is approved.
- 19.5. A tree protection plan review fee shall be required at the time of application in an amount set forth in the city's current fee schedule, located in section A of the administrative guidelines, for tree protection plans that are not part of a tree canopy plan.
- 19.6. At a minimum, the tree protection plan shall include:
 - 19.6.1. Map of the site where disturbance will occur, and trunk location, species, and DBH of trees proposed for protection;
 - 19.6.2. Location of the limits of the tree protection zone and description of materials to be used for fencing; all tree protection fencing shall conform to the technical standards;
 - 19.6.3. Description and text of signage to be used in identifying the area as a tree protection zone, as set forth in the technical standards; and,
 - 19.6.4. Name and contact information for the person responsible for monitoring and maintaining tree protection measures during construction.

20. Site inspections

- 20.1. Site inspections for compliance with the tree ordinance shall be made by the city arborist as follows:
 - 20.1.1. For new developments, inspections shall be made prior to the approval of a tree canopy plan, after the installation of tree protection measures, and prior to the issuance of a certificate of occupancy; additional inspections may occur at any time before, during, or after construction is completed;
 - 20.1.2. In the case of tree removal permits, a site inspection shall be made prior to approval to determine whether to approve, deny or approve with conditions the tree removal permit application, and after replacement trees have been planted; and,
 - 20.1.3. In the case of tree protection plans required for proposed encroachment into the tree protection zone of city trees, a site inspection shall be made prior to

the approval of the tree protection plan, after installation of tree protection measures, and after encroachment activities have been completed.

21. Notice of Timber Harvesting

- 21.1. Forest management activities, including timber harvesting, shall conform to accepted professional forestry practices and the most recent edition of *Georgia's Best Management Practices for Forestry* published by the Georgia Forestry Commission, and as officially revised and amended from time to time.
- 21.2. All persons or firms harvesting standing timber in the city for delivery as sawtimber, pulpwood, logs, poles, posts or wood chips to any woodyard or processing plant located inside or outside the state or any property owners who individually or through agents or contractors harvest standing timber from their own lands shall provide notice of such harvesting operations to the Winterville City Clerk, who shall forward the notice to the Athens-Clarke County Tax Assessor. "Harvest" or "harvesting" as used in this tree ordinance shall mean the cutting or removal of trees for any purpose that results in the assessment of ad valorem taxation of such trees in accordance with O.C.G.A. Section 48-5-7.5.
- 21.3. The required notice of harvesting such timber shall describe each separate site to be harvested, shall be on such form promulgated by the Georgia Forestry Commission, shall be delivered to the Winterville Planning and Zoning Commission prior to the commencement of harvesting and shall consist of:
 - 21.3.1. A map of the area which identifies the location of the site to be harvested and, as to those trucks which will be traveling to and from such site for purposes of picking up and hauling loads of cut forest products, the main point of ingress to such site from a city road and, if different, the main point of egress from such site to a city road;
 - 21.3.2. A statement as to whether the timber will be removed pursuant to a lump sum sale, per unit sale, or owner harvest for purposes of ad valorem taxation under O.C.G.A. 48-5-7.5;
 - 21.3.3. The name, address, and daytime telephone number of the timber seller if the harvest is pursuant to a lump sum or per unit sale or of the timber owner if the harvest is an owner harvest; and,
 - 21.3.4. The name, business address, business telephone number, and nighttime or emergency telephone number of the person or firm harvesting such timber.

- 21.4. Notice may be submitted in person, by transmission of an electronic record via facsimile, e-mail or such other means as approved by the Winterville City Clerk.
- 21.5. Persons or firms subject to the notice requirement shall deliver a bond or letter of credit as provided by this section. Notice shall not be effective for such harvesting operations unless and until the person or firm providing such notice has delivered to the Athens-Clarke County Public Works Director a valid surety bond, executed by a surety corporation authorized to transact business in Georgia protecting Athens-Clarke County against any damage caused by such person or firm in the amount of \$5,000.00 or, at the option of the person or firm harvesting timber, a valid irrevocable letter of credit issued by a bank or savings and loan association, as defined in O.C.G.A. 7-1-4, in the amount of and in lieu of such bond. For purposes of this section, any such surety bond or letter of credit shall be valid only for the calendar year in which delivered. If the timber harvest is to occur on a parcel of 3 acres or less, the Athens-Clarke County Public Works Director may waive the requirement for a bond or letter of credit.
- 21.6. Notice shall be effective for such harvesting operations on such site within the city upon receipt of the same by the Winterville City Clerk and compliance with the requirements of Section 21 hereof and until such time as the person or firm giving such notice has completed the harvesting operation for such site; provided, however that any subsequent change in the facts required to be provided for purposes of such notice shall be reported to the Winterville Planning and Zoning Commission within three (3) business days after such change.
- 21.7. Violation of the notice requirements of this section shall be subject to the penalties set forth in Section 1-1-5 of the Code of Ordinances of Athens-Clarke County, Georgia; provided, however, the maximum fine for each violation shall be \$500.00.
- 21.8. The notice requirement shall not apply to the following:
- 21.8.1. The harvesting of 5 or fewer trees on a site within a calendar year;
 - 21.8.2. The removal of any tree which has become a danger to human life or property;
 - 21.8.3. The removal of dead or storm damaged trees; and,
 - 21.8.4. The removal of trees found to be diseased or insect infested by the city arborist or a certified arborist.
- 21.9. Unless a tree canopy plan has been submitted and approved by the Winterville Planning and Zoning Commission prior to or contemporaneously with the filing of the

notice of timber harvesting activity, no development activity may occur on a site for which a notice of timber harvesting has or should have been issued for a period of 5 years after the completion date of the timber harvesting or tree cutting or removal.

22. Violations

- 22.1. When any violation of the tree ordinance occurs on a site, the city shall provide a written notice to comply to the property owner or his/her agent, and shall set forth in the notice the conditions required to bring the site into compliance, including a time frame for compliance.
- 22.2. When a violation occurs that has a significant and permanent impact on the health or structure of trees on the site, or an impact on the ability to establish new trees on the site, the city may issue a stop work order in addition to a notice to comply that shall remain in effect until the impacts are corrected to the full satisfaction of the city as described in the stop work order.
- 22.3. When a willful or egregious violation occurs on a site or when violations are not corrected in a time frame set forth in a notice to comply or stop work order, the city may revoke any or all permits issued for the site or may request that the Athens-Clarke County Building Permits and Inspections Department refuse to issue a certificate of occupancy for the building or other improvements constructed or being constructed on the site until such a time that the violations are corrected to the full satisfaction of the city.

23. Penalties

- 23.1. Any person violating any provision of this ordinance may be subject to a fine not to exceed \$1,000.00 per violation and may also be required to make a payment to the city for the appraised value of any city tree damaged or destroyed by such violation, to be used for public tree planting and maintenance.
- 23.2. Each tree affected and each day a violation occurs shall constitute a separate offense.

24. Variances

- 24.1. Where practical difficulties, unnecessary hardships and results inconsistent with the purpose and intent of this tree ordinance may result from the strict application of certain provisions thereof, variances may be granted by the administrator. In granting such variances, the administrator shall take into consideration recommendations by the city arborist on the approval or denial of the variance.
- 24.2. An application for variance shall be submitted to the city and accompanied by:

- 24.2.1. A tree canopy plan prepared in accordance with the guidelines set forth herein;
- 24.2.2. A statement and evidence demonstrating that the following criteria are met:
 - 24.2.2.1. There are extraordinary and exceptional conditions pertaining to the particular piece of property in question because of its size, shape, character or topography;
 - 24.2.2.2. The application of the provisions of this tree ordinance to this particular piece of property would create an unnecessary hardship;
 - 24.2.2.3. The benefits of granting the variance will be greater than any negative impacts on adjacent uses and will further the purpose and intent of this tree ordinance;
 - 24.2.2.4. The special conditions and circumstances on the site do not result from the actions of the applicant; and,
 - 24.2.2.5. The variance, if granted, will represent the minimum variance that will afford relief from the identified hardship and will represent the least deviation possible from the tree ordinance regulations, zoning regulations and from the comprehensive plan.
- 24.2.3. A proposed mitigation plan that offsets the effects of the proposed variance on the city's tree canopy cover that may include additional planting on site or on another property or a payment to the city may be required, to be used for public tree planting and maintenance.

25. Appeals

- 25.1. Any party aggrieved because of an alleged error in any order, requirement, decision or determination made by the city arborist or Winterville Planning and Zoning Commission or any other party in enforcement of the tree ordinance, may appeal such order, requirement, decision, determination or interpretation in writing, to the Winterville City Clerk.
- 25.2. Such notice of appeal must be submitted to the Winterville City Clerk within 30 days of the decision or the right to appeal shall be lost.
- 25.3. The appeal shall be heard by the Mayor and Council within 45 days of a notice of appeal being filed with the clerk. In exercising this power, the Mayor and Council may, in conformity with the provisions of this ordinance, reverse or affirm any order,

requirement, decision or determination made by the Winterville Planning and Zoning Commission or any other party.

- 25.4. Appeals from the decision by the Mayor and Council shall be to the Superior Court of Clarke County, Georgia.

ARTICLE III. ADMINISTRATIVE GUIDELINES

A. PLANS REVIEW AND PERMIT APPLICATION FEES

The fees listed in Table A1 are established for the review of tree canopy and tree protection plan review, tree removal permit application review, required re-inspection after correction of a violation, and for approved tree canopy cover deficit.

Table A1. Plans Review and Permit Application Fees

CITY SERVICE DESCRIPTION	FEE
Tree canopy plan review (may or may not include a tree planting and maintenance plan)	\$150 for first acre plus \$50 for each additional acre or portion thereof
Tree protection plan review	\$150
Tree removal permit application review	\$25 per tree 4 inches DBH and greater
Re-inspection after correction of violation	\$50 per inspection
Approved tree canopy cover deficit	\$20 per 100 square feet of deficit or portion thereof

The city council has the authority to add to or change these fees as deemed necessary to cover the actual costs of plans review and permit application review.

B. TECHNICAL STANDARDS

1. *In general.*

- 1.1. All tree care operations required by the Tree Canopy Conservation Ordinance shall be executed in compliance with the technical standards set forth in these administrative standards, and the most current American National Standards Institute *A300 Standards for Tree Care Operations*, *Z133.1 Safety Standards*, and *Z60.1 American Standard for Nursery Stock*, as well as ISA best management practices available on the ISA website at www.isa-arbor.com.
- 1.2. Any person or firm subject to the requirements of the tree ordinance is encouraged to seek professional assistance from a registered forester or certified arborist. A list of consulting foresters and arborists is available from the Georgia Forestry Commission, and certified arborists can be located online on the ISA website.
- 1.3. Any person or firm subject to the requirements of the tree ordinance is encouraged to hire only qualified, established businesses to perform arboricultural services, to require references for similar work performed before hiring, and to require separate insurance for property damage, personal liability, vehicles, and worker's compensation. The hiring of arboricultural businesses and tree services that employ certified arborists who can supervise the requested work is highly recommended.
- 1.4. The administrator may waive any technical standard to best meet the purpose and intent of this tree ordinance. When granted, waivers shall be recorded in writing on the permit application, the tree canopy plan, or other permanent record.

2. *Tree conservation standards for forested areas.*

- 2.1. The conservation of forested areas shall meet the minimum criteria set forth below:
 - 2.1.1. Each area shall be at least 2,500 square feet in size and include at least 5 trees measuring at least 6 inches DBH; areas less than 2,500 square feet and less than 5 trees can still qualify for tree canopy cover credit as individual trees;
 - 2.1.2. At least 50 percent of the total forested area conserved shall be contiguous;
 - 2.1.3. Each area shall be a minimum of 20 feet wide in any one dimension;
 - 2.1.4. Each area shall include the tree protection zones of all trees wherein trees shall be protected in accordance with the standards set forth in this section;
 - 2.1.5. Areas shall remain in a natural, undisturbed condition;
 - 2.1.6. Turf is not permitted;

- 2.1.7. Mowing is not permitted;
 - 2.1.8. Clearing of underbrush is not permitted, except for the removal of invasive species or clearing of a 5-foot swath for survey lines;
 - 2.1.9. No new tree maintenance shall be required, except for that necessary to maintain a healthy stand of trees;
 - 2.1.10. Areas dominated by non-native, invasive, and/or exotic plant species shall not be eligible for tree canopy cover credit;
 - 2.1.11. Tree removal without prior approval is not permitted, except in the case of hazardous trees; and,
 - 2.1.12. Activities permitted and prohibited within the area shall be as listed in the tree protection standards set forth herein.
3. *Tree conservation standards for individual trees.*
- 3.1. The conservation of individual healthy trees or groups of healthy trees shall meet the minimum criteria set forth below:
 - 3.1.1. Each tree must meet the definition of a conservable tree;
 - 3.1.2. The tree protection zone of each tree shall be conserved and the tree protected in accordance with the tree protection standards set forth herein; and,
 - 3.1.3. Each tree shall be mulched in accordance with the mulching standards set forth herein.
4. *Tree protection standards.*
- 4.1. Trees conserved or planted to meet the tree canopy cover requirements shall be actively protected during development and passively throughout their lives in accordance with the following standards:
 - 4.1.1. *Prohibited activities.* The following activities and conditions, and any other activities and conditions harmful to a tree's roots, trunk or crown, within the tree protection zone shall be prohibited:
 - 4.1.1.1. Vehicle or equipment traffic, parking, or storage;
 - 4.1.1.2. Materials or supplies storage;
 - 4.1.1.3. Placement of temporary or permanent structures;
 - 4.1.1.4. Equipment maintenance or washout;

- 4.1.1.5. Wounding of trunk;
- 4.1.1.6. Wounding or breakage of scaffold limbs or branches larger than 3 inches in diameter;
- 4.1.1.7. Topping or other improper pruning, such as stub cuts or flush cuts; and,
- 4.1.1.8. Fires or excessive heat from equipment exhaust pipes.

4.2. *Limited activities.*

4.2.1. The following activities and conditions within the tree protection zone are limited to one side of the tree in the outer one-half of the critical root zone, but in no case closer than 2.5 feet to the trunk of a planted tree or 10 feet to the trunk of a conserved tree:

- 4.2.1.1. Site or lot clearing or grubbing;
- 4.2.1.2. Soil excavation;
- 4.2.1.3. Soil cuts;
- 4.2.1.4. Soil fill;
- 4.2.1.5. Grading;
- 4.2.1.6. Trenching;
- 4.2.1.7. Tilling;
- 4.2.1.8. Edging;
- 4.2.1.9. Soil compaction;
- 4.2.1.10. Top dressing with soil greater than 2 inches in depth; and,
- 4.2.1.11. Paving.

4.3. *Active tree protection.*

4.3.1. Active tree protection shall meet the following minimum criteria:

- 4.3.1.1. Orange mesh plastic barrier fencing shall be installed prior to any land development or land disturbance activity around each individual conserved tree or conserved forested area at the location of the tree protection zone and shall remain in place until construction activities end or a certificate of occupancy is issued, whichever is later;

- 4.3.1.2. Low hanging limbs that may be damaged by equipment traffic or other construction activities shall be pruned prior to the commencement of any land development or land disturbance activity; all pruning shall be done in accordance with the pruning standards set forth herein; and,
- 4.3.1.3. When equipment movement is such that damage to tree trunks is possible, then tree trunks shall be wrapped vertically with a single layer of 2 inch by 4-inch lumber spaced a maximum of 12 inches apart, and covered with corrugated cardboard secured with strapping; the wrapping shall remain on the tree throughout the period of potential damage.

4.4. *Tree protection signs.*

- 4.4.1. Prior to any land development or land disturbance activity and after tree protection fencing is installed around any conserved trees or tree conservation area, tree protection area signs shall be installed. Signs shall be installed along the perimeter of all tree protection zones at least every 50 feet and shall include, at a minimum, the following text: “Tree Protection Area, Entry Prohibited, No Construction Activity, Materials or Equipment Storage, Equipment Washout, or Vehicle Traffic Allowed”. The sign shall be fabricated out of a sturdy material, shall be at least 18 inches wide by 24 inches high, and shall be placed on a sturdy post with the bottom of the sign at a minimum height of 30 inches above the ground. The signs must remain present at all times during construction.

4.5. *Passive tree protection.*

- 4.5.1. Passive tree protection shall be required throughout the life of a protected tree and shall require, at a minimum, the avoidance of all prohibited activities set forth herein within the tree protection zone.

5. *Tree establishment standards.*

- 5.1. Tree establishment involves a series of steps that includes site selection, species selection, quality tree selection, site preparation, tree planting, and new tree maintenance. Tree establishment standards shall be as set forth below.
- 5.2. *Site selection standards.* Trees shall be placed such that they have adequate space to grow unobstructed to maturity. Minimum distances, at the time of planting as measured from the tree trunk, to structures and infrastructure shall be required as listed in Table B1. In addition, the following standards shall apply:

- 5.2.1. Trees shall not be planted directly over property boundary lines or corners; and,
- 5.2.2. In no case, shall a planting site be less than 5 feet wide in any one direction at the soil surface.

Table B1. Minimum Distances in Feet Required between Trees and Structures or Infrastructure by Tree Canopy Size Category

Structure/Infrastructure Description	Tree Canopy Size Category as Listed in the <i>City of Winterville Tree Species List</i>			
	Large	Medium	Small	Very Small
Street intersections, measured from the right-of-way boundary	35	35	35	35
Traffic signs	20	20	20	20
Utility/light poles	20	20	15	15
Overhead utility lines	30	20	0	0
Underground Utility lines	5	5	5	5
Mailboxes	10	10	10	10
Fire hydrants, electrical transmission boxes, water meters, other similar structures	5	5	5	5
Curb, sidewalk, or pavement edge	4	4	2.5	2.5
Buildings	20	15	5	5
Driveways	15	15	15	15

5.3. *Species selection standards.* Species planted to satisfy the requirements of the tree ordinance shall be selected from the *City of Winterville Tree Species List* and shall conform to the following standards:

- 5.3.1. Species shall be selected that are tolerant of the growing conditions existing on the site, including growing space, sunlight, soil moisture, temperature, and soil volume;
- 5.3.2. No more than 30 percent of any one species shall be planted on a lot; and,
- 5.3.3. For street trees, where no obstructions to growth exist, large canopy trees shall be planted; where obstructions to growth exist for large canopy trees, medium canopy trees shall be planted; where obstructions to growth exist for medium canopy trees, small canopy trees shall be planted.
- 5.3.4. *Tree size and quality standards.* Trees planted to satisfy the requirements of the tree ordinance shall meet minimum quality standards as established in

the latest edition of the *ANSI Z60.1 American Standard for Nursery Stock*; trees shall also conform to the following standards to be eligible for tree canopy cover credit:

- 5.3.5. Trees shall be a minimum of 2-inch caliper for deciduous trees, a minimum of 8 feet in height for evergreen trees, and a minimum of 1 caliper per trunk for multi-trunked trees at the time of planting;
 - 5.3.6. Trees may be container grown or balled and burlapped;
 - 5.3.7. Trees with stem encircling roots shall not be planted;
 - 5.3.8. Trees with forked stems and included bark shall not be counted for tree canopy cover credit; and,
 - 5.3.9. Trees that require staking to stand upright shall not be counted for tree canopy cover credit.
- 5.4. *Site preparation standards.* The soil around a planted tree shall meet the following standards:
- 5.4.1. The soil within the open soil surface area shall be well aerated to a depth of 8 inches, except that in tree planting islands surrounded by pavement it shall be well aerated to a depth of 18 inches;
 - 5.4.2. The soil shall contain at least 5 percent organic matter;
 - 5.4.3. Soil pH shall be within a range of 5.8 to 7.0;
 - 5.4.4. An approved structural soil mix containing 80 percent rock aggregate, 15 percent mineral soil, and a sticking agent may be used within parking lots and other paved areas to increase the rooting volume available to trees; and,
 - 5.4.5. Permeable or porous pavements may be used within a parking lot or other paved area, in which case the open soil surface area required may be reduced by up to 20 percent.
- 5.5. *Tree planting standards for container grown and balled and burlapped trees.* The following standards shall apply to the planting of container grown and balled and burlapped trees:
- 5.5.1. Trees shall be installed during the planting season, unless otherwise approved by the administrator.
 - 5.5.2. In undisturbed soils and prepared soils, the planting hole shall be at least two (2) times as wide and no deeper than the root ball of the tree, with sides sloping inward from the top, and with firm soil on the bottom;

- 5.5.3. In compacted soils, the planting hole shall be at least three (3) times as wide and no deeper than the root ball of the tree, with sides sloping inward from the top, and with firm soil on the bottom;
 - 5.5.4. The tree shall be planted no deeper than it was growing in the container or field and the trunk flare shall be visible above the ground;
 - 5.5.5. All strapping, webbing, twine, strings and other such material shall be removed from the root ball prior to filling in the hole with soil;
 - 5.5.6. The burlap and wire basket, if present, shall be removed to a minimum depth of 12 inches and to a greater depth if possible;
 - 5.5.7. In no case shall any burlap be located above the soil surface; and,
 - 5.5.8. Tree staking is not required, but if installed it shall be removed no later than 1 year after planting.
6. *New tree maintenance standards.*
- 6.1. For newly planted container grown or balled and burlapped trees that are planted to satisfy the requirements of the tree ordinance, the property owner shall comply with the following maintenance standards for the first 3 years after planting:
 - 6.1.1. Trees shall be mulched immediately after planting in accordance with the mulching standards set forth herein;
 - 6.1.2. When natural rainfall is less than 1 inch per week, trees shall be provided with the equivalent of 1 inch of water per week after planting and throughout the growing season and throughout the open soil surface area;
 - 6.1.3. Trees shall be pruned immediately after planting to remove dead, broken, diseased, dying or rubbing branches only;
 - 6.1.4. Tree pruning shall be done as necessary to remove dead branches, train tree structure and maintain clearance over walkways and vehicles in accordance with the tree pruning standards set forth herein; and,
 - 6.1.5. Tree staking materials shall be removed within 1 year after planting.
7. *Tree pruning standards.*
- 7.1. Protected trees shall be pruned in accordance with the ANSI standards and ISA best management practices as set forth previously in this tree ordinance. Tree owners and their agents are encouraged to hire businesses that employ certified arborist who can supervise the pruning work on site and ensure that proper pruning is being done. In addition, the following pruning standards shall apply to protected trees:

- 7.1.1. Pruning activities shall not disturb nesting, rare, or endangered wildlife and shall not resume or commence until the wildlife has vacated the tree for the season, unless the tree poses an immediate threat to public health and safety, in which case the Georgia Department of Natural Resources shall be contacted to relocate the wildlife prior to pruning;
- 7.1.2. Co-dominant stems less than 4 inches in diameter at the fork shall be pruned off and one main stem shall remain;
- 7.1.3. Pruning shall be done such that a tree's natural form is maintained to the greatest extent possible;
- 7.1.4. Tree topping or heading back is not permitted;
- 7.1.5. Reasons for which protected tree pruning is not permitted unless approved by the administrator include, but are not limited to:
 - 7.1.5.1. Sign installation, clearance, or visibility, excluding traffic, direction, warning or informational signs owned by any public or semi-public agency; and,
 - 7.1.5.2. Clearance for temporary or permanent equipment traffic or storage, the erection of temporary structures, or materials storage within the tree protection zone.

8. *Tree maintenance standards.*

- 8.1. In addition to pruning, tree maintenance includes mulching, fertilization, cabling and bracing (supplemental support systems), and lightning protection. When required for protected trees as set forth herein, these activities shall be done in accordance with these technical standards.

9. *Mulching standards.*

- 9.1. Individual planted trees, individual conserved trees, and groups of ten or less conserved trees shall be mulched in accordance with the following standards. For conserved groups of more than 10 trees, for forested areas and for forested buffers the addition of mulch is not required; however, the ground surface and natural leaf litter within these areas shall remain present and undisturbed.
- 9.2. Mulching shall be composed of organic materials only that may include, but are not limited to, pine straw, leaves, wood chips aged at least 3 months, compost, and pine bark.

- 9.3. Grass clippings, plastic sheeting, and rocks or gravel shall not be used as mulch and shall not be applied within the tree protection zone.
- 9.4. For all trees, the critical root zone shall be mulched out from the trunk at least one-third the distance to the outer edge of the critical root zone, except that no mulch ring shall have a radius that is less than 2.5 feet or shall be required to be larger than 10 feet.
- 9.5. Mulch shall be 3 to 4 inches in depth, and shall be spread in an even layer from 6 inches out from the trunk to the outer extent of the mulched area.
- 9.6. Mulch is not allowed closer than 6 inches to the tree trunk.
- 9.7. Mulch shall be inspected for proper depth and re-applied if necessary at least annually, preferably in the late winter or early spring.

10. *Fertilization standards.*

- 10.1. Fertilization is not required for protected trees. However, if protected trees are fertilized, they shall be fertilized in accordance with ANSI standards cited in Section 1.1.

11. *Tree supplemental support system standards.*

- 11.1. Any tree support systems placed in protected trees shall be designed, installed, and maintained in accordance with ANSI standards cited in Section 1.1.

12. *Lightning protection systems standards.*

- 12.1. Any lightning protection systems placed in protected trees shall be designed, installed and maintained in accordance with the ANSI standards cited in Section 1.1.

13. *Tree removal standards.*

- 13.1. The removal of protected trees shall be done in accordance with the standards set forth below.
- 13.2. Tree removal shall not disturb nesting, rare or endangered wildlife including any birds subject to The Migratory Bird Act, and tree removal shall be delayed until the nesting wildlife is safely removed or has voluntarily vacated the tree, unless the tree poses an immediate threat to public health and safety, in which case the Georgia Department of Natural Resources shall be contacted to relocate the wildlife prior to removal. The Georgia Department of Natural Resources shall be contacted in every case involving the removal of any bird species.
- 13.3. Tree removal shall be approved if a tree meets one or more of the following conditions:

- 13.3.1. Dead;
 - 13.3.2. Unhealthy;
 - 13.3.3. Dieback of 50 percent or greater of the crown;
 - 13.3.4. Insect infestation or disease condition for which treatment is impractical, causing tree decline, and with a high probability of spreading to other trees;
 - 13.3.5. Trunk wounds greater than one-third the circumference of the trunk;
 - 13.3.6. Trunk cavity greater than two-thirds the diameter of the trunk at the point of the cavity;
 - 13.3.7. Structural defects in scaffold limbs, where defect correction through pruning will result in removal of 50 percent or greater of the tree's crown;
 - 13.3.8. Litter originating from the tree that creates an unsafe condition or poses a hazard to public health, safety and welfare;
 - 13.3.9. Unresolvable conflict with infrastructure that is creating an unsafe condition or poses a hazard to public health, safety and welfare; or,
 - 13.3.10. Tree is located such that a desired use on a property (construction, installation, or expansion of a building, pool, garden, or other site amenities) is not possible without the removal of the tree, except that every effort shall be made to place such structures or amenities where tree removal will not be required.
- 13.4. Reasons for which protected tree removal is not permitted unless approved by the administrator include, but are not limited to:
- 13.4.1. Sign installation, clearance or visibility, excluding traffic, directional, warning or information signs owned by any public or semi-public agency; or,
 - 13.4.2. Unwanted production of leaves, fruit, or other organic litter that does not create an unsafe condition or that is not a hazard to public health, safety and welfare.

C. CITY OF WINTERVILLE TREE SPECIES LIST

The *City of Winterville Tree Species List*, Table C2, is intended to support the tree ordinance, site planning and design activities for tree conservation and establishment, tree canopy and protection plans development and tree maintenance planning and decision-making.

In the list tree species are arranged alphabetically by the species common name with the “genus” listed first. For example, red maple is listed as “Maple, Red” (maple is the genus name). The Latin name is also listed for more definitive species identification. In some cases, the commonly planted variety or cultivar of the species has also been included apart from the species.

The list includes symbols and descriptions of a multitude of characteristics for each species. A key to these symbols and descriptions is included first in Table C1.

Table C1. Key to Symbols and Tree Species Characteristic Descriptions

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
Species Common Name	Entered with genus common name first, then species, then cultivar if applicable. For some species, an alternate common name is included in parentheses.
Latin Name	Genus, species, and variety or cultivar; always italicized or underlined.
CANOPY AREA FOR DEVELOPMENT CODE	
Square Feet of Canopy	The total area projection of the crown onto the ground in square feet as typically achieved in urban situations with less than optimal growing conditions.
Canopy Size Category	Very Small - 150 square feet with a 15-foot crown diameter <i>The minimum open soil surface area is 25 sq. ft.</i>
	Small – 400 square feet with a 25-foot crown diameter <i>The minimum open soil surface area is 100 sq. ft.</i>
	Medium – 900 square feet with a 35-foot crown diameter <i>The minimum open soil surface area is 225 sq. ft.</i>
	Large – 1,600 square feet with a 45-foot crown diameter <i>The minimum open soil surface area is 400 sq. ft.</i>
RECOMMENDED USES	
Level of Use	The level of use that the tree should receive.
	P = Plant New Trees and Conserve Existing Trees
	C = Conserve Existing Trees
	L = For Limited Planting or Conservation Only

Table C1. Key to Symbols and Tree Species Characteristic Descriptions

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
	N = Do Not Plant
Large Landscape Areas Road Frontages – Street Road Frontages – Yard Parking Lots Plazas and Downtown Settings Riparian Zones and Drainage Areas Utility Corridors	The site situation where the tree should be planted and/or conserved. O = tree to avoid; not suitable Blank = may or may not be suitable x = good choice XX = excellent choice
PHYSICAL CHARACTERISTICS	
Height Class in Urban Conditions	Height class (ground to tip of leader or tallest branch) of a mature tree commonly achieved in urban situations with less than optimal growing conditions. S = Small: 15-25 feet M = Medium: 25-40 feet L = Large: 40 feet and taller
Crown Class in Urban Conditions	The width of the crown (at its widest point) commonly achieved in urban situations with less than optimal growing conditions. VS = Very Small (150 square feet with a 15-foot crown diameter) S = Small (400 square feet with a 25-foot crown diameter) M = Medium (900 square feet with a 35-foot crown diameter) L = Large (1,600 square feet with a 45-foot crown diameter)
Mature Crown Form	General shape of the tree crown (leaves and branches) when fully leafed out. Irregular Multi-Stemmed Oval (Columnar) Pyramidal Rounded Spreading Upright (Vase)
Typical Range of Mature Tree Height	Typical range of height of tree in feet from ground to bud at tip of leader or tallest branch under various conditions.

Table C1. Key to Symbols and Tree Species Characteristic Descriptions

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
Typical Range of Mature Crown Width	Typical range of spread of branches in feet at the widest diameter across the crown under various conditions.
Leaf Type	Persistence and type of leaf on the tree. Deciduous trees lose their leaves in the fall.
	DB = Deciduous Broadleaf
	DC = Deciduous Conifer
	EB = Evergreen Broadleaf
	EC = Evergreen Conifer
Leaf Texture	Relative size and appearance of leaves.
	F = Fine
	M = Medium
	C = Coarse
Fall Leaf Color	The typical color of the tree's fall foliage.
	EV = evergreen
	BR = bronze or brown
	MA = maroon
	MU = multi-colored: maroon, red, orange, yellow
	OR = orange
	RE = red
	YE = yellow
	I = insignificant color change
Flower Color	For trees with showy flowers, indicates the typical flower color.
	B = blue
	L = purple
	M = multiple colors: white, pink, purple, red, or others
	P = pink
	R = red
	W = white
	Y = yellow
	I = insignificant flowers: small with an unremarkable color
Flowering Time	For trees with showy flowers, the general season of blooming for the species.
Wildlife Value	Indicates with an "X" if the tree produces flowers (nectar) or fruits that are consumed by insects, birds, or mammals.

Table C1. Key to Symbols and Tree Species Characteristic Descriptions

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
Excessive Litter	Indicates with an "X" if the tree produces large or hazardous leaves, fruit, or other litter.
ENVIRONMENTAL CHARACTERISTICS AND TOLERANCES	
Native Tree to City of Winterville	Indicates whether the tree is found naturally growing in the Winterville area.
	Y = Yes
	N = No
Growth Rate	Typical rate of growth under urban conditions.
	S = Slow: 1/2 to 1-1/2 feet/year
	M = Moderate: 1-1/2 to 2-1/2 feet/year
	F = Fast: 2-1/2 to 3+ feet/year
Average Life Span	The average life span (useful service life) of the species when growing under average urban conditions. A tree is at the end of its useful service life when its risk of failure becomes unacceptable and cannot be improved or when the tree is no longer an asset due to its appearance or condition.
	S = Short: less than 25 years useful service life.
	M = Moderate: 25 to 40 years useful service life.
	L = Long: 50 years or greater useful service life.
Net Effect on Air Quality	The net monetary effects in cents attributable to the species on air quality; listed as a benefit (positive) or cost (negative). Includes the species net effect on ozone, sulfur dioxide, nitrogen dioxide, particulate matter (PM10), and carbon monoxide.
Soil Moisture	The typical soil moisture conditions for the species in its native habitat.
	H = Hydric: wet and may be occasionally flooded for short periods
	M = Mesic: moist but moderately well- to well-drained
	X = Xeric: dry and very well-drained

Table C1. Key to Symbols and Tree Species Characteristic Descriptions

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
Drought Tolerance	Tolerance of the species to infrequent rain, low soil moisture, full sun, and high temperatures.
	Low = not tolerant to drought conditions
	Moderate = tolerant to mild drought conditions; moderately tolerant to severe drought conditions
	High = very tolerant to mild to severe and prolonged drought conditions
Preferred Soil pH	Relative soil acidity or alkalinity preferred by the species. In many cases, a range of pH preference is given if it was available. In other cases, a general level is given. A pH of 7.0 is neutral, a pH of less than 7.0 is acidic, and a pH of greater than 7.0 is alkaline.
	ac = acidic (5.0 to 6.0)
	sl ac = slightly acidic (6.0 to 7.0)
	nu = neutral (7.0)
	sl al = sl alkaline (7.0 to 8.0)
	al = alkaline (8.0 to 8.5)
	n/a = no information available
Light Requirement	The amount of sunlight the species prefers or will tolerate. Trees that are typically found in the understory or are characteristic of late forest successional stages prefer shade or at least partial shade, while trees that typically form the overstory or are characteristic of early successional stages prefer full sun.
	FS = Full Sun
	PS = Partial Shade
	SH = Shade

Table C1. Key to Symbols and Tree Species Characteristic Descriptions

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
Construction Tolerance/Limitations	The broad tolerance of the species in its home range to construction damage, and the limitations that constrain a species tolerance to damage.
Tolerance	P = Poor
	M = Moderate
	G = Good
Limitations	I = physical injury, wood compartmentalization and decay
	P = pest complications, including chronic and acute attacks
	S = soil conditions, including aeration and water availability
	C = limited climatic tolerances, including native range, hardiness, and micro-climate change
	A = all the limitations described above
Urban Tolerant Tree	Based upon other characteristics and tolerances to urban conditions; an "X" indicates the species is suitable for planting under "tough" urban conditions.

An abbreviated *City of Winterville Tree Species List* follows in Table C2 and is available in a separate PDF file with complete information from the city clerk.

Table C2. City of Winterville Tree Species List

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR DEVELOPMENT CODE		RECOMMENDED USES								
		Square Feet of Canopy	Canopy Size Category	Level of Use	Large Landscape Areas	Road Frontages - Street	Road Frontages - Yard	Parking Lots	Plazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas	Utility Corridors
Alder, Hazel (Tag)	<i>Alnus serrulata</i>	150	Very Small	P	XX					x	XX	x
Arborvitae, Eastern (Northern Whitecedar)	<i>Thuja occidentalis</i>	400	Small	L	x	0	x	0		x		0
Arborvitae, Western (Western Redcedar)	<i>Thuja plicata</i>	400	Small	L	x	0	x	0		XX		0
Ash, Green	<i>Fraxinus pennsylvanica</i>	1,600	Large	P	XX	x	XX		x		x	
Ash, White	<i>Fraxinus americana</i>	1,600	Large	P	XX	x	XX		x		x	
Baldcypress	<i>Taxodium distichum</i>	900	Medium	P	x		XX			XX	XX	
Basswood, American (Linden)	<i>Tilia americana</i>	1,600	Large	C	x						x	
Beech, American	<i>Fagus grandifolia</i>	1,600	Large	P	XX					0	x	
Birch, River	<i>Betula nigra</i>	900	Medium	P	XX	x	XX	x	X X	XX	XX	0
Birch, River 'Heritage'	<i>Betula nigra</i> 'Heritage'	900	Medium	P	XX	x	XX	x	X X	XX	XX	0
Blackgum (Tupelo)	<i>Nyssa sylvatica</i>	900	Medium	P	XX	x	XX				x	
Boxelder	<i>Acer negundo</i>	900	Medium	C	x						x	0
Buckeye, Bottlebrush	<i>Aesculus parviflora</i>	150	Very Small	P								x
Buckeye, Painted	<i>Aesculus sylvatica</i>	150	Very Small	P	x						x	x
Buckeye, Red	<i>Aesculus pavia</i>	150	Very Small	P								x
Buckthorn, Carolina	<i>Rhamnus caroliniana</i>	900	Medium	P	x	x	x				x	
Buckthorn, Common	<i>Rhamnus cathartica</i>	900	Medium	L								x
Buttonbush, Common	<i>Cephalanthus occidentalis</i>	150	Very Small	P	x						x	x
Catalpa, Southern	<i>Catalpa bignonioides</i>	900	Medium	C	x	0		0			x	
Cedar, Deodar	<i>Cedrus deodara</i>	900	Medium	L	x							
Cedar, Japanese	<i>Cryptomeria japonica</i>	900	Medium	L	x		x			x		
Chastetree (Vitex)	<i>Vitex agnus-castus</i>	150	Very Small	P		x	x	x	x			x
Cherry, Black	<i>Prunus serotina</i>	900	Medium	C	x		x				x	
Cherrylaurel, Carolina	<i>Prunus caroliniana</i>	900	Medium	C		0	x	0	0	XX	0	
Cherry, Japanese Flowering	<i>Prunus serrulata</i>	400	Small	L			x		x	XX		XX

Table C2. City of Winterville Tree Species List

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR DEVELOPMENT CODE		RECOMMENDED USES									
		Square Feet of Canopy	Canopy Size Category	Level of Use	Large Landscape Areas	Road Frontages - Street	Road Frontages - Yard	Parking Lots	Plazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas	Utility Corridors	
Cherry, Yoshino	<i>Prunus x yedoensis</i>	400	Small	L			XX		X X	XX		XX	
Chestnut, American	<i>Castanea dentata</i>	1,600	Large	N	susceptible to chestnut blight								
Chestnut, Chinese	<i>Castanea mollissima</i>	1,600	Large	P	x		x						
Chinaberry	<i>Melia azedarach</i>	900	Medium	N	invasive								
Chinquapin, Allegheny	<i>Castanea pumila</i>	400	Small	N	susceptible to chestnut blight								
Cottonwood, Eastern	<i>Populus deltoides</i>	1,600	Large	C	x					0	x		
Crabapple, Japanese Flowering	<i>Malus floribunda</i>	400	Small	L		x	x		x	XX		XX	
Crabapple, Southern	<i>Malus angustifolia</i>	400	Small	C	x	x	x			x		XX	
Crapemyrtle, Common	<i>Lagerstroemia indica</i>	150	Very Small	L			x	0	x	0	0	XX	
Cypress, Leyland	<i>Cupressocyparis leylandii</i>	400	Small	L	x	0	x	x		x		0	
Devil's Walking Stick	<i>Aralia spinosa</i>	150	Very Small	C		0	0	0	0	x	XX		
Devilwood	<i>Osmanthus americanus</i>	400	Small	C	x		x						
Dogwood, Flowering	<i>Cornus florida</i>	400	Small	P	XX	X X	XX	0	0	XX		XX	
Dogwood, Flowering Pink	<i>Cornus florida var. rubra</i>	400	Small	P	XX	X X	XX	0	0	XX		x	
Dogwood, Kousa	<i>Cornus kousa</i>	400	Small	P		x	x			x		x	
Dogwood, Swamp	<i>Cornus stricta</i>	400	Small	C	x						x	x	
Elm, American	<i>Ulmus americana</i>	1,600	Large	C	x		x				x		
Elm, American 'Princeton'	<i>Ulmus americana</i> 'Princeton'	1,600	Large	P	XX	x	XX				x	0	
Elm, Chinese (Lace Bark)*	<i>Ulmus parvifolia</i> *	900	Medium	L	0	X X	XX	X X	X X	0	0		
Elm, Siberian	<i>Ulmus pumila</i>	900	Medium	N	pest susceptible; weed tree								
Elm, Slippery	<i>Ulmus rubra</i>	1,600	Large	C	x	x	x				x		
Elm, Winged	<i>Ulmus alata</i>	1,600	Large	P	XX	X X	XX	X X		0	0		
Flametree, Chinese (Bougainvillea)	<i>Koelreuteria bipinnata</i>	400	Small	P			x						
Fringetree (Grancy Gray Beard)	<i>Chionanthus virginicus</i>	150	Very Small	P	x	x	x			x		x	

Table C2. City of Winterville Tree Species List

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR DEVELOPMENT CODE		RECOMMENDED USES								
		Square Feet of Canopy	Canopy Size Category	Level of Use	Large Landscape Areas	Road Frontages - Street	Road Frontages - Yard	Parking Lots	Plazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas	Utility Corridors
Fringetree, Chinese	<i>Chionanthus retusus</i>	150	Very Small	P		x	x			x		x
Ginkgo (Female)	<i>Ginkgo biloba</i>	1,600	Large	L	x	0	x	0	0	0		
Ginkgo (Male)	<i>Ginkgo biloba</i>	1,600	Large	P	x	X	XX	x	X	0		
Goldenraintree	<i>Koelreuteria paniculata</i>	400	Small	P		x	x	x	x	x		
Hackberry, Common	<i>Celtis occidentalis</i>	1,600	Large	C	x		x				x	
Hackberry, Georgia	<i>Celtis tenuifolia</i>	1,600	Large	C	x		x				x	
Hawthorne, Washington	<i>Crataegus phaenopyrum</i>	400	Small	P		x	x		x			x
Hemlock, Eastern	<i>Tsuga canadensis</i>	1,600	Large	C	x		XX	0	0	x		0
Hickory, Bitternut	<i>Carya cordiformis</i>	1,600	Large	C	x	0	x	0	0			
Hickory, Mockernut	<i>Carya tomentosa</i>	1,600	Large	C	x	0	x	0	0			
Hickory, Pignut	<i>Carya glabra</i>	1,600	Large	C	x	0	x	0	0			
Hickory, Sand	<i>Carya pallida</i>	1,600	Large	C	x	0	x	0	0			
Hickory, Shagbark	<i>Carya ovata</i>	1,600	Large	C	x	0	x	0	0			
Hickory, Southern Shagbark	<i>Carya ovata var. australis</i>	1,600	Large	C	x	0	x	0	0			
Holly, American	<i>Ilex opaca</i>	400	Small	P	x		XX	x		XX		0
Holly, Deciduous (Possumhaw)	<i>Ilex decidua</i>	150	Very Small	C	x		x				x	x
Holly, Fosters	<i>Ilex x attenuata 'Fosteri'</i>	150	Very Small	P			x	x	x	x		
Holly, Ornamental Variety	<i>Ilex species</i>	150	Very Small	L			x	x	x	x		x
Holly, Savannah	<i>Ilex x attenuata `Savannah'</i>	150	Very Small	P	x		x	x	x	x		0
Holly, Yaupon	<i>Ilex vomitoria</i>	150	Very Small	P		x	x	x	x			x
Honeylocust	<i>Gleditsia triacanthos</i>	900	Medium	C	x		x	0	0			
Hophornbeam, American	<i>Ostrya virginiana</i>	900	Medium	P	x		x	x			x	
Hornbeam, Am. (Ironwood, Blue Beech)	<i>Carpinus caroliniana</i>	900	Medium	P	XX	X	XX	x	X	XX	XX	
Hornbeam, European	<i>Carpinus betulus</i>	900	Medium	P		X	XX	X	X	X		
Hornbeam, Japanese	<i>Carpinus japonica</i>	400	Small	L		x	x	x	x	x		
Katsuratree	<i>Cercidiphyllum japonicum</i>	900	Medium	L	x		x					

Table C2. City of Winterville Tree Species List

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR DEVELOPMENT CODE		RECOMMENDED USES									
		Square Feet of Canopy	Canopy Size Category	Level of Use	Large Landscape Areas	Road Frontages - Street	Road Frontages - Yard	Parking Lots	Plazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas	Utility Corridors	
Locust, Black	<i>Robinia pseudoacacia</i>	900	Medium	C	x			0	0			x	
Magnolia, Cucumber	<i>Magnolia acuminata</i>	1,600	Large	C	x		x	0				x	
Magnolia, Japanese (Saucer)	<i>Magnolia x soulangiana</i>	900	Medium	L			x	0					x
Magnolia, Southern	<i>Magnolia grandiflora</i>	1,600	Large	P	XX		XX	0		XX			0
Magnolia, Southern 'Little Gem'	<i>Magnolia grandiflora</i> 'Little Gem'	150	Very Small	P			x	0		x			XX
Magnolia, Star	<i>Magnolia stellata</i>	150	Very Small	L		x	x						x
Magnolia, Sweetbay	<i>Magnolia virginiana</i>	900	Medium	P	XX		x			XX	XX		
Maple, Amur	<i>Acer ginnala</i>	400	Small	P		x	x						x
Maple, Chalk	<i>Acer leucoderme</i>	900	Medium	P	x	x	x	x		x			
Maple, Hedge	<i>Acer campestre</i>	900	Medium	P		x	x	x		x			
Maple, Japanese	<i>Acer palmatum</i>	400	Small	L	0		x	0					x
Maple, Norway	<i>Acer platanoides</i>	900	Medium	N	pest susceptible								
Maple, Red	<i>Acer rubrum</i>	900	Medium	P	XX	X X	XX	X X	X X	XX	XX	XX	0
Maple, Silver	<i>Acer saccharinum</i>	1,600	Large	L	0		x	0	0				
Maple, Southern Sugar (Florida Sugar)	<i>Acer barbatum</i>	900	Medium	P	XX	x	XX	x	X X	XX	x		
Maple, Sugar	<i>Acer saccharum</i>	1,600	Large	P	XX	X X	XX				x		0
Maple, Sugar 'Green Mountain'	<i>Acer saccharum</i> 'Green Mountain'	1,600	Large	P	XX	X X	XX						0
Maple, Sugar 'Legacy'	<i>Acer saccharum</i> 'Legacy'	1,600	Large	P	XX	X X	XX						0
Maple, Trident	<i>Acer buergeranum</i>	900	Medium	P	0	X X	XX	X X	X X	XX			0
Mimosa	<i>Albizia julibrissin</i>	900	Medium	N	pest susceptible; weed tree								
Mulberry, Red	<i>Morus rubra</i>	900	Medium	C	x	0		0	0			x	
Oak, Black	<i>Quercus velutina</i>	1,600	Large	C	x		x					x	
Oak, Cherrybark	<i>Quercus falcata</i> var. <i>pagodifolia</i>	1,600	Large	P	x		x					x	
Oak, Chestnut	<i>Quercus prinus</i>	1,600	Large	P	x	0	XX	0	0			0	

Table C2. City of Winterville Tree Species List

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR DEVELOPMENT CODE		RECOMMENDED USES									
		Square Feet of Canopy	Canopy Size Category	Level of Use	Large Landscape Areas	Road Frontages - Street	Road Frontages - Yard	Parking Lots	Plazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas	Utility Corridors	
Oak, Diamond Leaf (Laurel)	<i>Quercus laurifolia</i>	1,600	Large	P	x	x	x						
Oak, English	<i>Quercus robur</i>	1,600	Large	L		x	x						
Oak, Georgia	<i>Quercus georgiana</i>	1,600	Large	L	x		x						
Oak, Laurel	<i>Quercus hemisphaerica</i>	1,600	Large	P	x	x	x						
Oak, Laurel 'Darlington'	<i>Quercus hemisphaerica</i> 'Darlington'	1,600	Large	P	x	X	XX						
Oak, Live	<i>Quercus virginiana</i>	1,600	Large	C	out of range								
Oak, Northern Red	<i>Quercus rubra</i>	1,600	Large	P	XX	x	XX						
Oak, Nuttall	<i>Quercus nuttalli</i>	1,600	Large	P	x	x	x						
Oak, Oglethorpe	<i>Quercus oglethorpensis</i>	1,600	Large	C	x	x	x						
Oak, Overcup	<i>Quercus lyrata</i>	1,600	Large	P	XX	X	XX					x	
Oak, Pin	<i>Quercus palustris</i>	1,600	Large	L	0	x	x	0	0			0	
Oak, Post	<i>Quercus stellata</i>	1,600	Large	L	x	x	XX						
Oak, Sawtooth	<i>Quercus acutissima</i>	1,600	Large	L	0	0	x	0	0			0	
Oak, Scarlet	<i>Quercus coccinea</i>	1,600	Large	P	XX	X	XX	x	x				
Oak, Shumard	<i>Quercus shumardii</i>	1,600	Large	P	XX	X	XX	X	X				
Oak, Southern Red	<i>Quercus falcata</i>	1,600	Large	P	XX	x	XX					x	
Oak, Swamp Chestnut	<i>Quercus michauxii</i>	1,600	Large	P	x	0	x	0	0			x	
Oak, Swamp White	<i>Quercus bicolor</i>	1,600	Large	P	x	x	x					x	
Oak, Water	<i>Quercus nigra</i>	1,600	Large	P	XX	x	XX					XX	0
Oak, White	<i>Quercus alba</i>	1,600	Large	P	XX	x	XX						
Oak, Willow	<i>Quercus phellos</i>	1,600	Large	P	XX	X	XX	X	X	0	XX	0	
Orange, Osage	<i>Maclura pomifera</i>	900	Medium	L	x	0	x	0	0			0	
Parrotia	<i>Parrotia persica</i>	400	Small	L		x	x						x
Pear, Bradford	<i>Pyrus calleryana</i> 'Bradford'	900	Medium	N	defective branch structure								
Pear, Callery	<i>Pyrus calleryana</i>	900	Medium	N	defective branch structure								

Table C2. City of Winterville Tree Species List

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR DEVELOPMENT CODE		RECOMMENDED USES									
		Square Feet of Canopy	Canopy Size Category	Level of Use	Large Landscape Areas	Road Frontages - Street	Road Frontages - Yard	Parking Lots	Plazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas	Utility Corridors	
Pear, Common	<i>Pyrus communis</i>	900	Medium	C	x	0	x	0	0	0		0	
Pecan	<i>Carya illinoensis</i>	1,600	Large	P	x	0	x	0	0	0			
Persimmon, Common	<i>Diospyros virginiana</i>	900	Medium	P	x	0	x	0	0		x		
Pine, Eastern White	<i>Pinus strobus</i>	1,600	Large	C	not heat tolerant								
Pine, Loblolly	<i>Pinus taeda</i>	1,600	Large	P	XX	x	x	X		XX	x	0	
Pine, Longleaf	<i>Pinus palustris</i>	1,600	Large	C			x	x		x	0		
Pine, Shortleaf	<i>Pinus echinata</i>	1,600	Large	P	XX	x	x	x		x	x	0	
Pine, Slash	<i>Pinus elliotii</i>	1,600	Large	C			x	x		x	0		
Pine, Virginia	<i>Pinus virginiana</i>	900	Medium	P	x		x	x		XX	x		
Pistache, Chinese	<i>Pistacia chinensis</i>	900	Medium	P		x	XX	x	x	x	0		
Planetree, London	<i>Platanus x acerifolia</i>	1,600	Large	P	x	X	XX	X	x				
Plum, Chickasaw	<i>Prunus angustifolia</i>	150	Very Small	C	x	0	x			x		x	
Plum, Purpleleaf	<i>Prunus cerasifera</i>	400	Small	L		x	x			XX		x	
Poplar, Lombardy	<i>Populus nigra var. italica</i>	900	Medium	N	not heat tolerant								
Poplar, White	<i>Populus alba</i>	900	Medium	C			x						
Poplar, Yellow (Tuliptree)	<i>Liriodendron tulipifera</i>	1,600	Large	P	XX		x				XX	0	
Redbud, Eastern	<i>Cercis canadensis</i>	400	Small	P	XX	X	XX		X	XX	x	XX	
Redbud, Eastern White	<i>Cercis canadensis var. alba</i>	400	Small	P	x	X	XX		X	x	x	XX	
Redbud, 'Forest Pansy'	<i>Cercis canadensis</i> 'Forest Pansy'	400	Small	P	x	X	XX		X	x	x	XX	
Redbud, 'Oklahoma'	<i>Cercis reniformis</i> 'Oklahoma'	400	Small	P		X	XX	x	X			XX	
Redbud, 'Texas White'	<i>Cercis reniformis</i> 'Texas White'	400	Small	P		X	XX	x	X			XX	
Redcedar, Eastern	<i>Juniperus virginiana</i>	900	Medium	P	x		XX	x		XX	x	0	
Redwood, Dawn	<i>Metasequoia glyptostroboides</i>	900	Medium	P	x		XX	x		XX			
Royal Paulownia (Princess-Tree)	<i>Paulownia tomentosa</i>	900	Medium	C		0	x	0	0		0		

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		Square Feet of Canopy	Canopy Size Category	Level of Use	Large Landscape Areas	Road Frontages - Street	Road Frontages - Yard	Parking Lots	Plazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas	Utility Corridors	
Sassafras	<i>Sassafras albidum</i>	900	Medium	C	x		x			x	x		
Serviceberry, Downy	<i>Amelanchier arborea</i>	400	Small	P	XX	X	X		X	XX	x	x	
Silverbell, Carolina	<i>Halesia tetraptera</i>	900	Medium	P	XX	x	x				x		
Silverbell, Two-Winged	<i>Halesia diptera</i>	400	Small	L	XX	x	x				x	XX	
Smoketree, American	<i>Cotinus obovatus</i>	150	Very Small	L			x					x	
Smoketree, Common	<i>Cotinus coggygia</i>	150	Very Small	L			x					x	
Sourwood	<i>Oxydendrum arboreum</i>	900	Medium	C	XX		x						
Sparkleberry, Tree	<i>Vaccinium arboreum</i>	150	Very Small	C			x				x	x	
Spruce Varieties	<i>Picea</i> species	900	Medium	N	not heat tolerant								
Sugarberry	<i>Celtis laevigata</i>	1,600	Large	C	x		x			0	x		
Sweetgum	<i>Liquidambar styraciflua</i>	1,600	Large	C	x	0	x	0	0		x		
Sycamore	<i>Platanus occidentalis</i>	1,600	Large	P	x		x				x	0	
Tallowtree, Chinese	<i>Sapium sebiferum</i>	900	Medium	N	invasive								
Tree-of-Heaven (Ailanthus)	<i>Ailanthus altissima</i>	900	Medium	N	brittle wood; invasive								
Walnut, Black	<i>Juglans nigra</i>	1,600	Large	C	x	0	x	0	0		x		
Waxmyrtle, Southern	<i>Myrica cerifera</i>	150	Very Small	P			x	x		x	0	x	
Willow, Black	<i>Salix nigra</i>	900	Medium	C	x	0		0	0		x	0	
Willow, Weeping	<i>Salix babylonica</i>	1,600	Large	L	x	0	x	0	0			0	
Winterberry, Common	<i>Ilex verticillata</i>	150	Very Small	P	x	x	x			x	x	x	
Witchhazel, Common	<i>Hamamelis virginiana</i>	400	Small	P	x		x		x		x	x	
Yellowwood, American	<i>Cladrastis kentukea</i>	900	Medium	L	x		x						
Zelkova, Japanese	<i>Zelkova serrata</i>	1,600	Large	L			x		x		0	0	

* Showing signs of possible invasiveness. Limit planting until further investigation.