ORDINANCE
CITY OF WOODSTOCK, GEORGIA

AN ORDINANCE AMENDING CHAPTER IX OF THE LAND DEVELOPMENT ORDINANCE OF THE CITY OF WOODSTOCK, GEORGIA

Whereas, the City of Woodstock, Georgia (hereinafter sometimes referred to as the "City") is a municipality duly formed and existing pursuant to Georgia Law; and

Whereas, the 1983 Constitution of the State of Georgia provides for the self-government of municipalities without the necessity of action by the General Assembly[1]; and

Whereas, the City of Woodstock, Georgia, has the legislative power to adopt clearly reasonable ordinances, resolutions or regulations relating to its property, affairs and local government for which no provision has been made by general laws, and which are not inconsistent with the Constitution or any charter provision applicable thereto[2]; and

Whereas, the City Council of the City of Woodstock, Georgia desires to replace the existing **Chapter IX** **TREE PRESERVATION STANDARDS** of the Land Development Ordinance, City of Woodstock, Georgia with a new Chapter IX TREE PRESERVATION AND REPLACEMENT STANDARDS as set forth herein; and

Whereas, the purpose of this revision is to revise Chapter IX to comply with current policies and procedures of the City, to change the way that tree density is calculated, and to clarify standards and procedures required by the ordinance.

NOW, THEREFORE, BE IT RESOLVED THAT THE MAYOR AND COUNCIL OF THE CITY OF WOODSTOCK HEREBY ORDAINS, by the lawful authority vested in them as follows:

Section 1.

Chapter IX Tree Preservation Standards of the Land Development Ordinance of the City of Woodstock, Georgia is hereby repealed in its entirety and a new **Chapter IX Tree Preservation and Replacement Standards** as more particularly set forth on Exhibit "A" attached hereto and made a part hereof by reference is hereby inserted in lieu thereof.

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1 Ga Const 1983, Article IX, Section II, Paragraph II provides in pertinent part as follows

"The General Assembly may provide by law for the self-government of municipalities and to that end is expressly given the authority to delegate its power so that matters pertaining to the municipalities may be dealt with without the necessity of action by the General Assembly " 2 O C G A §36-35-3(a) provides as follows

"(a) The governing authority of each municipal corporation shall have legislative power to adopt clearly reasonable ordinances, resolutions or regulations relating to its property, affairs, and local government for which no provision has been made by general law and which are not inconsistent with the Constitution or any charter provision applicable hereto Any such charter provision shall remain in force and effect until amended or repealed as provided in subsection (b) of this Code Section This Code Section, however, shall not restrict the authority of the General Assembly, by general law, to define this home rule power further or to broaden, limit, or otherwise regulate the exercise thereof The General Assembly shall not pass any local law to repeal, modify or supersede any action taken by a municipal governing authority under this Code section, except as authorized under Code Section 36-35-6 "

Section 2.

The City Clerk is hereby authorized and directed to incorporate the provisions of the **new Chapter IX** as set forth on Exhibit "A" attached hereto into the Land Ordinance for the City of Woodstock, Georgia replacing the existing **Chapter IX.**

Section 3.

Repeal of conflicting Ordinances. Any and all ordinances, resolutions, or regulations, or parts thereof, in conflict with this Ordinance are hereby repealed to the extent of such conflict.

Severability. If any sentence, clause, part, paragraph, section, or provision of this Ordinance is declared by a court of competent jurisdiction to be invalid, the validity of the Ordinance as a whole or any other part hereof shall not be affected.

Effective Date. This Ordinance shall take effect immediately upon its adoption.

PASSED AND ADOPTED BY THE MAYOR AND COUNCIL OF THE CITY OF WOODSTOCK, GEORGIA, THIS 12 DAY OF December, 2016.

First Reading Date: November 28, 2016
Public Hearing Date: November 28, 2016
Public Hearing Advertised: October 14, 2016
Final Adoption Date: December 12, 2016

DONNIE HENRIQUES,
MAYOR CITY OF WOODSTOCK,
GEORGIA

RHONDA L. PEZZELLO, CLERK
CITY OF WOODSTOCK

EXHIBIT A

Chapter IX - TREE PRESERVATION AND REPLACEMENT STANDARDS

ARTICLE I. - GENERAL INFORMATION

9.100. - Findings.

The Mayor and City Council of the City of Woodstock hereby finds that the protection and preservation of Trees, the planting of new Trees and other landscape material as part of the land development process is a public purpose and provides for the public health and general welfare. This Ordinance is intended to further the City's policy that all development sites where Trees are most commonly removed will achieve upon project completion, a uniform standard related to preserved Tree coverage, planted Tree coverage and Buffers.

A healthy urban forest will increase the fiscal and psychological value of property, reduce the urban heat island effect and contribute to the community's aesthetic quality. These benefits are crucial to the long-term health and welfare of Woodstock's citizens, workers, and visitors.

9.101. - Purpose

The purpose of this Ordinance is to firmly establish the value of Trees to the community and to promote the health, safety, and general welfare of the public by recognizing the standards within this Article. Tree canopy preservation and Tree replacement will be promoted as an integral part of the land development and construction process in the City of Woodstock. Specific benefits to our citizens attributed to Trees include:

- Trees facilitate a harmonious community and help to conserve natural resources as well as provide wildlife habitats
- Trees provide a more attractive place to live and enhance the aesthetic character of the community
- Trees mitigate harmful vehicle emissions by reducing carbon dioxide levels
- Trees are recognized for their importance in the production of oxygen, shading and cooling, noise and wind reduction, prevention of soil erosion, dust filtration and fostering improved air quality
- Trees contribute to the economic value of real property
- Trees help reduce the glare of motor vehicle lights, and enhance the appearance of open automobile parking areas and lands used for commercial, public/institutional, office, industrial, and residential purposes.
- Trees can enhance the natural functions of streams and related buffers

9.102. - Applicability

The regulations included in this Ordinance shall apply to all properties located within the City of Woodstock unless otherwise noted in this Chapter. Please note: *Based on proposed development patterns submitted by applicants within Form Based Code (FBC) designated areas of the City, staff shall have sole discretion over whether Section 18.410 or Chapter IX will apply.*

Single Family Residential outside of LDP

- The removal of five (5) or fewer Trees, other than specimen Trees or Trees needed to meet the minimum 100" (inches) per acre, is allowed with a permit (no fee associated with this permit) on any Residential Lot within a single calendar year.
- Trees under 3" Caliper that were not planted to meet the minimum 100 inches per acre can be removed without a permit.
- Exemptions will be allowed to the 5 Tree per year limit by City staff if the property owner must remove Trees in order to build a newly permitted structure, or to build an addition to or to make improvements to an existing structure, or to improve the health of other Trees in the landscape.
- With regard to private property owners and/or Residential Lots not incidental to development, a Tree removal permit is required for Specimen Tree removal. A permit will be granted if the Specimen Tree is clearly dead, dying, diseased with no chance for recovery or presenting imminent danger to life, limb or property. If City staff cannot adequately asses the condition of the Tree, then the property owner shall be required to provide a letter stating such from a Certified Arborist. (See Section 9.302 [1 & 2])
- Dead standing Trees that are a danger to human life or property must be removed by the property owner after receiving notice from the City Code enforcement division. Dead Tree determinations to be made by a Certified Arborist or designated City staff who have been successfully trained in basic Tree evaluation.

Non Single Family Residential Outside of LDP:

- Any new construction, renovation, or alteration of a building that results in an expansion or alteration of the total square footage of the building footprint shall invoke the requirements contained in Section 9.200. The Tree Ordinance shall be enforced by the City, designated agent, and/or the Municipal Court of the City of Woodstock.
- If Specimen Tree removal is requested, refer to the standards set forth in Section 9.302
- Trees under 3" Caliper that were not required by Ordinance or conditions of zoning can be removed without a permit.
- Trees 3" Caliper and greater that do not meet the Specimen Tree criteria require a tree removal permit. City staff shall determine whether portions of the Tree Ordinance apply on a case by case basis.
- Dead standing Trees that are a danger to human life or property must be removed by the property owner after receiving notice from the City Code enforcement division. Dead Tree determinations to be made by a Certified Arborist or designated City staff who have been successfully trained in basic Tree evaluation

9.103. - Definitions.

All words in these standards have their customary dictionary definition except as specifically defined herein. The words "shall" and "must" are mandatory, and the words "may" and "should" are permissive.

Arborist: The City's designee responsible for administering the provisions of the Chapter IX

Basal Area: A forestry industry standard used to describe the cross-sectional area of a Tree expressed in square inches, of a Tree measured at four and one-half (4.5) feet above the ground or diameter at breast height (DBH).

Berm: A mound of soil, either natural or man-made, used to screen one (1) site or property from the view of another.

Boundary Tree:

"Boundary tree means a tree 15 inches DBH or larger located on any part of a property adjacent to a permitting property with any portion of the root plate extending into the permitting property. (See Root plate.) Boundary trees must be in good health as determined from the vantage point of the property to be developed (pre-construction digital photographs required). This provision shall not authorize the trespass on private property abutting the site."

"The applicant shall notify the adjoining property owner of a Boundary Tree in writing that the Root Plate of a Boundary Tree is to be disturbed and if the tree should thereafter be damaged or die due to construction impacts, it will be handled as a civil matter between the Applicant and the Boundary Tree owner. The Applicant must provide a copy of any letter and the certificates of mailing prior to permit issuance."

Buffer: A naturally existing area, a landscaped area or a combination of both designated for screening or around the perimeter of a parcel provided to soften the view of two (2) adjacent lots or parcels from one another. (See Chapter XI for more detailed definitions related to specific uses and See Appendix B for typical Buffer details)

Buildable Area: Portion of a parcel excluding the required yards, easements, planting areas, environmental s (streams, wetlands) and areas within the future right-of-way.

Caliper (or Cal.): American Association of Nurseryman standard for trunk measurement of nursery stock. Caliper of the trunk shall be taken six (6) inches above the ground for up to and including four-inch Caliper size, and twelve (12) inches above the ground for larger sizes.

Critical Root Zone (CRZ): The minimum area beneath a Tree which must be left undisturbed in order to preserve a sufficient root mass to give a Tree a reasonable chance for survival. For the purpose of this Ordinance, the CRZ of any given Tree on the applicant's property shall be represented by a concentric circle with a radius equal to twelve (12) times the diameter of the Tree trunk. No inches will be given if these minimum criteria are not met. (See Section 9.300)

Deciduous Tree: A Tree which sheds leaves annually.

Density Factor· A unit of measure used to prescribe the calculated Tree coverage on a site. The site density factor for areas within the corporate limits of the City of Woodstock is one hundred (100) inches per acre. Please note: one-hundred-year floodplain, wetlands and 50' and 25' stream buffers shall be

excluded from the acreage calculation but will remain protected and undisturbed on site during construction. (See Section 9 300)

Diameter at Breast Height (DBH): Means the standard measure of a Tree size for those Trees existing on a site that have a Caliper of at least two (2) inches at a height of four and one half (4.5) feet above the ground. If a Tree has 2 or more trunks below four and one half (4.5) feet above the ground, refer to Section 9.300.

Genus Cap: A term used to describe a limit determined by this Ordinance in which the quantity of a particular genus cannot exceed thirty (30) percent of the total number of Replacement Trees on a site. This limit is put in place to prevent the creation of a Monoculture.

House Location Plan (HLP): Site plan required by builder's representative for records/documentation at the time an individual home permit is applied for/purchased.

Land Disturbance Permit (LDP): A permit necessary to begin land-disturbing activity.

Landscape Plan: A scaled plan that clearly delineates buildings, vehicular use areas, and displays and describes all proposed planting as required per zoning conditions and/or the Tree Ordinance.

Lot: A measured parcel of land having fixed boundaries and designated on a plot or survey.

Monoculture: A plant culture (i.e. vegetation) that results from growing only one (1) type of plant which creates the opposite condition of biodiversity and can sometimes be responsible for the spread of plant diseases.

Opaque Buffer: A landscaped area planted in such a manner as to be impenetrable to view, or so obscuring to view that features, buildings, structures and uses become visually indistinguishable.

Open Space: Unoccupied portion of a lot or building site that is open to the sky and may contain, outdoor structures, or recreational facilities as it relates to Chapter IX

Overstory Tree: Means those Trees that compose the top layer or canopy of vegetation and will generally reach a mature height of greater than forty (40) feet.

Parking Lot Trees: Trees required pursuant to Section 9.2 herein.

Pervious Area: Area of a parcel or lot left over after Impervious Areas (see Chapter II definitions) are subtracted.

Replacement Planting: The planting of Trees on a site that before development had more Trees, and after development shall have fewer Trees per acre. (Please note: All properties applying for an LDP must meet the minimum 100 inches per acre whether or not a site had Trees prior to development).

Replacement Tree: A new Tree planted on a site outside of a Tree Protection Area that is used to meet the required 100 inches per acre.

Residential Lot: A LOT shown on a subdivision plat as recorded in the records of Cherokee County.

Root Barrier: For the purpose of this Ordinance, a mechanical guide (typically hard plastic) that redirects root down and away from sidewalk driveway or other built structures.

Root Plate: The area of the root zone comprised of pedestal roots, the zone of rapid taper and roots under compression, the directional radius of which based upon the Tree trunk diameter at 4.5 feet above the ground. The root plate will typically be represented by a concentric circle centering on the Trees trunk with a radius equal in feet to one-half times the number of inches of the trunk diameter. (Failure of the

Tree could result if roots in this area are damage or destroyed. Example: The root plate radius of a 20-inch diameter Tree is 10 feet)

Screening: Solid fencing, walls, berms, or dense vegetation used to conceal a Lot or part thereof from view.

Sidewalk Landscape Zone: The portion of a sidewalk area, adjacent to the street curb and reserved for the placement of Trees, groundcover, and street furniture including utility poles, waste receptacles, fire hydrants, traffic signs, traffic control boxes, Tree grates, newspaper boxes, bus shelters, bicycle racks and similar elements in a manner that does not obstruct pedestrian access or motorist visibility. Note: The following may cross in a perpendicular manner but shall not be located within the Sidewalk Landscape Zone: storm drain lines, sanitary sewer lines, water lines, electrical lines and any other utilities not specifically mentioned (See Appendix B).

- If existing underground utilities are present, the director may allow alternative proposals on a case by case basis.
- In the event that existing overhead power lines prohibit the planting of required Overstory Trees, an appropriate Understory Tree species may be selected and approved for required inches according to accepted horticultural standards and as approved by the impacted utility (See Appendix A).

Specimen Tree: Any Tree as defined by Section 9.302.

Tree: Any living, self-supporting woody or fibrous plant which normally obtains a diameter breast height (DBH) of at least three (3) inches and typically has one (1) main stem or trunk and many branches and shall be on the approved City of Woodstock Street Tree List (See Appendix A)

Tree Preservation Trust Fund: Fund established to purchase, install, and maintain Trees throughout the City's public areas, including parks, green spaces, right-of-way, and government building sites. (See Section 9.401)

Tree Save Area: Means a protected area designated for the purpose of meeting the 100 inches per acre requirements, saving natural Trees and/or preserving natural s.

Tree Protection Fencing: A barrier installed at and around the perimeter of a Tree Protection Area to prevent intrusion of construction-related activities in which fencing is a minimum of four (4) feet in height and is at the CRZ.

Understory Tree: A Tree that, under normal forest conditions, may grow to maturity beneath overstory Trees and will generally reach a mature height of at least ten (10) feet but less than forty (40) feet. (See Appendix A)

ARTICLE II. - REQUIREMENTS

9.200. - General Plan Requirements.

1. An appropriately scaled Tree Protection Plan and/or Tree Replacement Plan shall be submitted and approved as part of the pre-development site plans as required by the provisions of this Ordinance. **No plans shall be accepted by City staff unless Tree Protection and/or Tree Replacement Plans are included in the initial submittal**. All commercial parcels and Residential Lots under development shall comply with Street Tree and Parking Lot Tree requirements. Street Tree requirements are subject to the Zoning categories identified within the City of Woodstock Zoning Ordinance (See Chapter 7).

   (a) The Sidewalk Landscape Zone in the Downtown District and any areas with Trees between the sidewalk and back of curb shall be designed so that required Street Trees are planted in a suitable soil volume. Planting environment shall provide an average soil depth greater than or equal to three (3) feet. Each Street Tree shall have a minimum area suitable for root growth of two hundred square feet provided.

   - In addition to or in conjunction with the Tree Protection Areas, each single family residential lot 7,500 sf or greater shall contain a minimum of (2) two 2" Caliper overstory Trees, at least one of which must be located in the front yard (for the purpose of this ordinance, the 7' landscape zone may be considered part of the front yard where applicable). Root Barrier (See Section 9 103) along with lateral pipe locations shall be shown on HLP.
   - In addition to or in conjunction with the Tree Protection Areas, each single family residential lot less than 7,500 sf shall contain a minimum of (2) two 2" Caliper Trees (1 overstory and 1 understory), at least one of which must be located in the front yard. (for the purpose of this ordinance, the 7' landscape zone may be considered part of the front yard where applicable and in the Downtown District). Root Barrier (See Section 9.103) along with lateral pipe locations shall be shown on HLP.
   - Requests for a reduction of Landscape Zone from 7' shall only be considered under the following circumstance:
     - Developer shall submit a design and implementation protocol incorporating a series of subsurface structural cells for approval by City Staff. (See Appendix D)

   (b) Parking Lot Trees shall be provided in landscape islands in parking areas proposing 10 or more spaces Parking areas with fewer than 10 spaces and multi-level parking decks are exempt.

   (c) A sufficient number of 3" Caliper (minimum) Trees must be planted in interior portions of parking lots so that no parking space is more than fifty (50) feet from a parking lot Tree. Show a fifty-foot radius dashed circle for each Parking Lot Tree on Tree Replacement Plan to verify graphically. Up to 20% of Parking Lot Trees may be planted along the perimeter of the parking lot Landscaped islands shall terminate each row of parking and all landscaped islands planted with Trees shall provide a minimum of 200 sf per Tree. Light poles are not permitted in parking lot islands, peninsulas and medians unless they are a minimum of 20' from any planted Tree (See Appendix C)

   (d) The Tree Replacement Plan shall be designed so that all Parking Lot Trees are planted in a suitable soil volume. Planting environment shall provide an average soil depth greater than or

equal to three (3) feet. Each Parking Lot Tree shall have a minimum area suitable for root growth of two hundred (200) square feet provided, however if this minimum square footage is not provided, subsurface soil cells shall be incorporated into the Tree Replacement Plan All applicable details to show an industry standard subsurface soil cell design shall be attached as part of the Tree Replacement Plan. (See Appendix D)

ARTICLE III. - TREE REPLACEMENT AND PROTECTION

9.300. - Tree Density Requirements.

The applicant shall provide a development plan demonstrating both responsible canopy preservation (excluding any 50' & 25' stream buffers) and Tree replacement inches on sites submitted for development. Any Trees saved (with undisturbed CRZ's) or replaced in the 75' impervious zone will receive appropriate inches. Please note: All properties applying for an LDP must meet the minimum 100 inches per acre whether or not a site had Trees prior to development.

All Trees designated for replacement shall be on an inch for inch basis. The density of 100 inches per acre may be achieved as follows:

- counting existing Trees (inches measured at DBH) to be preserved with no impact to CRZ
- planting new Trees (minimum 2" Caliper) for lots that do not have the required 100 inches per acre

Formula:

Acreage x 100 Inches = Required Inches per Acre

Example: 3.2 Acres x 100 Inches = 320 Inches Required

The minimum required inches per acre shall be calculated and established pursuant to the formula as shown above and calculations shall be in a prominent location on the Tree Preservation and Replacement Plan All applicable sites brought in for land development must maintain a minimum of 100 inches per acre. Street Trees and/or parking lot Trees planted after the minimum required inches per acre for the site has been satisfied can be counted toward Specimen Tree recompense.

- For planted evergreen trees, the following conversions shall apply:

Evergreen Tree Inches:	Evergreen Tree Sold by Height:
2"	6' Minimum
3"	8' Minimum
4"	12' Minimum
5"	16' Minimum
6"	18' Minimum

- For multi trunk trees (See formula in Appendix B):
- Tree form shrubs shall not be given credit.

9 301. - Preservation of Existing Trees

An emphasis of this Ordinance is the preservation of as many existing Trees as possible. Thus, inch for inch credit will be given for preserving existing Trees. No credit will be allowed for shrubs or for Trees with impact to their CRZ. Please note: Administrative variances for encroachment into CRZ shall not be considered.

1 All Trees to be counted toward meeting the required 100 inches per acre must be inventoried. Existing Tree inventory information (caliper at DBH and Genus) must be shown on the Tree Protection Plan and must be provided by an ISA certified arborist, forester, surveyor or landscape architect along with a statement that the provider conducted the inventory in the field. If the plan is unclear or does not match current GIS information, a Tree survey shall be required. Please note: Specimen Trees must have a surveyed location.

2. Tree Protection Fencing is required to be placed at the CRZ for all Trees to be saved and locations shall be clearly delineated on the Tree Protection Plan. All Tree Protection Fencing shall be installed prior to and maintained throughout the land disturbing and construction process, and should not be removed until final landscaping is installed, inspected and final approval granted by the City.

3 Plot-sample surveys may be used to determine Tree densities for large forested areas with a minimum size of five (5) acres or greater that is to be preserved. For the purpose of this Ordinance, a plot sample is defined as an area measuring fifty (50) feet by fifty (50) feet, for a minimum size of two thousand five hundred (2,500) square feet. Sampling areas must be located within the limits of a Tree Protection Area. The sample must be taken in a portion of the site that is representative of its cover-type. The Tree Protection Plan must delineate all Ground Cover-types and provide a general description of the types of Trees present within the Tree Protection Area (i.e. hardwoods, pine/hardwood mix, etc.). Other sampling and/or inventory methods must be approved by the City's designated representative.

4. No credit inches will be given for Trees preserved in mandatory stream buffers as required by Chapter XVII, Stream Buffer Protection. The area (measured in acres) of the undisturbed stream buffers shall be excluded from the total site acreage when calculating required inches per acre. Any Trees saved (with undisturbed CRZ's) or replaced in the 75' impervious setback zone will receive appropriate inches.

5. To aid preservation efforts, land owners shall have the option of moving existing Trees to prevent their damage or destruction by development activities. To receive credit for transplanted Trees, the following standards must be adhered to:

   (a) Trees must be less than ten (10) inches Caliper measured six (6) inches above grade;

   (b) Trees must remain within the planting areas of the parcel;

   (c) Trees shall not be moved to or from stream buffers or wetlands

6. Tree Protection Areas for subdivisions should be located in common areas, or in buffers required to be undisturbed by zoning or other regulations, or within building setbacks. If Tree Protection Areas must be located on individual lots, the lots must be of sufficient size to reasonably expect the Trees to be preserved at the completion of the building process. *Please Note: Staff shall have sole discretion over whether the lot is of sufficient size.*

7. With regard to subdivision developments, the City shall require that improvements be located so as to result in minimal disturbance to the natural topography of the lots and the protection of a maximum number of mature Trees on the lot. Damage to mature Trees located within setback and required yard areas be minimized as much as possible under the particular circumstances, as determined by City staff.

8. Every lot in a subdivision shall have Trees, either preserved or planted for which an LDP is obtained after the adoption of this Ordinance. These Trees can be counted as part of the required 100 inches per acre for the development. All planted Trees must be a minimum of two-inch Caliper and must be shown on the required House Location Plan (HLP). This requirement shall apply to the developer or homebuilder, whoever is the responsible party at the issuance of the Certificate of Occupancy for the individual Lot.

9.302. - Preservation, Replacement and Removal of Specimen Trees

A Specimen Tree is any Tree which qualifies for special consideration for preservation due to its size, type and condition. The following criteria are used by the City to identify Specimen Trees. Both the size and condition criteria must be met for a Tree to qualify.

1. Minimum Size Criteria:

a. 24-inch Caliper at DBH - Oak, Beech, Ash, Blackgum, Sycamore, Hickory, Maple (does not include Silver Maple), Pecan, Walnut, Magnolia (does not include Bigleaf Magnolia), Persimmon, Sourwood, Cedar, Cypress or Redwood

b. 30-inch Caliper at DBH - Tulip Poplar, Sweet Gum, River Birch, Silver Maple or Pine

c. 10-inch Caliper at DBH- American Holly, Dogwood, Redbud or other genus as determined by the City Arborist such as Bigleaf magnolia

2. Condition Criteria:

a Life expectancy greater than 15 years;

b. Relatively sound and solid trunk with no extensive decay or significant structural deficiencies;

c. No more than two major and several minor dead limbs (excluding pine for minor limbs);

d. A radial trunk dieback of no more than 20% or a canopy dieback of no more than 30%

3. Small Trees can be classified as specimen if of a rare or unusual species, of exceptional quality, or socio-historical significance. Small Trees may also qualify as specimen if used in a landscape as a focal point of the design In order to claim this credit, the applicant must submit a letter from a certified Arborist stating that the Tree(s) meet these qualifications.

4 An Arborist report for each Specimen Tree that is shown to be impacted by a proposed development requiring an LDP must be submitted to the City to determine whether that Tree meets the condition criteria for specimen status. The report must be prepared and signed by a Certified Arborist or a registered forester. The report must contain the following information.

- Site plan showing an accurate surveyed location of the Tree,
- Identification/verification of the Tree's size, genus and species,
- Description of the surrounding site conditions,
- Detailed description of the Tree's condition,
- Digital photographs to illustrate any defects which would disqualify the Tree from specimen status.

The final determination of Specimen Tree status will be made by City staff after reviewing the report.

(a) If a Specimen Tree is to be removed, a plan or written documentation indicating the reason for removal must be submitted to the City.

(b) The removal of any Specimen Tree impacted by a proposed development must be mitigated by replacing the removed Specimen Tree with minimum four-inch Caliper Trees of comparable species on an inch for inch replacement basis

Example: 24" Oak would require replanting six (6) 4" Caliper Trees [24 / 4 = 6]. These recompense Trees are in addition to the minimum 100 inches per acre for a particular site.

(c) Any person who removes a Specimen Tree in violation of this Ordinance shall be assessed a fine in accordance with section 9.401. In regards to Specimen Trees removed after being designated for preservation on an approved plan, the removed Tree must also be replaced on an inch-for-inch basis with Tree species with potential for comparable size and quality, regardless of the 100 inches per acre requirement. If a Tree is removed without approval and there is no evidence of its condition, size alone will be the determining factor for replacement. In regards to Specimen Trees removed on a Residential Lot that is not currently being developed, the fine shall be paid as referenced, however there shall be no requirement for replacement of the Specimen Tree.

3. In order to encourage the preservation of Specimen Trees and the incorporation of these Trees into the design of new development projects, the following incentive is offered

   (a) Preserved Specimen Trees will receive 1.5 x inches DBH. (30" oak x 1.5 = 45" Inches)

   Under no circumstance will this incentive allow the requirements of the Tree Preservation Ordinance to be reduced administratively.

9.303. - Tree Protection Standards.

Allowing enough space for a Tree's root system is a critical factor in Tree protection throughout the development process. Disturbance within this critical root zone (CRZ) can directly affect a Tree's chances for survival. In order to protect Trees, the following standards shall apply:

1. The CRZ for each Tree or group of Trees shall be represented on the plan by a circle the size of the CRZ (see definition Critical Root Zone).
2. Site layout should be designed to accommodate Tree Protection Areas;
3. Construction activities shall be arranged to prevent encroachment into Tree Protection Areas;
4. No disturbance whatsoever shall occur within Tree Protection Areas without prior written approval by the City. Disturbance permitted with approval from the City shall be limited to general maintenance (i.e.: removal of dead Trees and/or cleaning of underbrush by hand). Use of machinery shall not be allowed within the Tree Protection Area.
5. Active protective Tree fencing shall be installed along the outer edge of and completely surrounding the CRZs of all Specimen Trees or stands of Trees designated for preservation prior to land disturbance;
6. Tree Protection Fencing shall be minimum four (4) feet high and made of orange laminated plastic netting with wooden posts and rail fencing or other equivalent material as approved by the City.
8. All protection zones should include signage in English and Spanish that identifies the areas as Tree protection and preservation zones and include the name and phone number of the developer or designated agent;
9. All Tree save fencing must be installed prior to any clearing, grubbing, or grading and must be maintained in functioning condition throughout all phases of development and construction;
10. Once Tree Protection Areas are established and approved, any changes are subject to review and approval by the City;
11. Developer shall notify any adjacent property owner a minimum of 14 days prior to construction dates (copy of notification to be provided to City for permit file) if visual assessment identifies boundary tree root plates are potentially within the proposed limits of disturbance (See 9.103 definitions) Any and all subsequent tree matters shall be a civil matter between the property owner and the developer.

9 304. - Tree Replacement Standards.

1 The replacement of Trees shall occur within the required yards, Buffers, Open Space, parking lots, and landscape areas, as specified in the Zoning Ordinance and Tree Preservation and Replacement Ordinance. The following standards for replacement will be used to evaluate proposed Tree planting plans:

- Existing Tree coverage, size, and type;
- Number of Trees to be removed from the lot or parcel;
- Area to be covered with structures, parking, and driveways;
- Grading plan and drainage requirements;
- Character of the site and its environs.

2 Replacement Trees shall be ecologically compatible with the intended growing site, contribute to the diversity of the urban forest, and add to the overall aesthetic quality of the City.

3 The spacing of Replacement Trees must be compatible with spatial site limitations with responsible consideration towards species sizes when mature. Typical spacing for Overstory / Street Trees is thirty (30) feet on center, with no overstory Tree being planted less than twenty-five (25) feet on center from any other Tree. Spacing of Understory Trees and/or Trees in parking lots shall be subject to approval of the City and within accepted horticultural standards

4. In the event that existing overhead power lines prohibit the planting of required Overstory Trees, an appropriate Understory Tree species may be selected and approved for required inches according to accepted horticultural standards and as approved by the impacted utility (See Appendix A).

5. Trees selected for planting may be a species from the recommended Tree species lists shown in the appendices. Use of a species not shown on these lists is subject to approval of the City, according to accepted horticultural standards (See Appendix A).

6 Replacement Trees shall be a minimum two-inch Caliper measured six (6) inches above grade, and be protected by a twelve-month guaranteed maintenance surety. (110% of installed amount) beginning at the date of planting.

7. Planting of Replacement Trees within utility, storm drainage, or sanitary sewer easements is not acceptable and no credit will be allowed toward the required inches per acre. City Staff shall determine whether or not the applicant will be required to install Root Barriers to prevent future conflicts for trees planted directly adjacent to proposed easements or utility locations.

8. Trees and plants selected for planting must meet the minimum requirements as provided in the "American Standard for Nursery Stock" (ANSI Standards latest edition).

9. Tree planting may be delayed up to six (6) months in the case of unfavorable climate conditions (drought, flood, extreme heat or cold). Property owners must provide the City with a performance bond or cash escrow that identifies a target date for when the required numbers, sizes, and species of Trees will be planted to meet the requirements of this Ordinance.

10. Each development site (parcel) should contain Trees of sufficient number, size, and type to achieve the minimum required 100 inches per acre, which is determined according to the size of the parcel and is intended to be consistent across uses and underlying zoning categories. Total replacement units should be gathered by using as diverse a palette of species of Trees as possible. However, a

minimum of sixty (60) percent of the total replacement units required for any parcel must be achieved in the form of Overstory Trees. When fewer than ten (10) Trees are shown to be planted on a project, one (1) species may be specified. When ten (10) to fifty (50) Trees are shown, a minimum of three (3) species of Trees are required. When more than fifty (50) Trees are shown, a minimum of five (5) species of Trees are required.

11. When ten (10) or more Trees are to be planted, no single genus shall represent more than thirty (30) percent of the required inches per acre

12. Buffer Planting Standards are as follows:

An Opaque Buffer is a designated area along a property line that is required to be planted for the purpose of Screening Buffers may be required as a condition of zoning or in areas where incompatible land uses exist (i.e. commercial adjacent to residential).

The Opaque Buffer shall consist of evergreen plant materials that must form an eighty (80) percent visual barrier within two (2) years and a one hundred (100) percent visual barrier within five (5) years. Trees must be minimum six (6) feet height at installation, and shrubs must be minimum twenty-four-inch height at installation.

- Existing Buffer to remain undisturbed: Sparsely vegetated or previously disturbed portions of this undisturbed, existing buffer must be replanted to comply with the definition above;
- Buffer width twenty (20) feet or less: This buffer shall consist of a minimum of one (1) row of Evergreen Trees and one (1) row of evergreen shrubs (See Appendix B);
- Buffer width twenty-one (21) to thirty-five (35) feet: This buffer shall consist of a minimum of two (2) rows of Evergreen Trees and one (1) row of evergreen shrubs (See Appendix B);
- Buffer width +35': This buffer design shall be subject to approval by the City of Woodstock

Evergreen Trees planted within buffer areas may be counted for inch credit toward the minimum

9.305. - Acts of Nature.

In the case of an act of nature, be it drought, flood, tornado, lightening, hurricane, wind, insects, snow, ice, rain, or hail, that destroys a Tree after the twelve (12) month performance bond or cash escrow has expired, the owner(s) of an affected parcel are excused from replacing those Trees as required by the procedure established by this Ordinance.

9.306. - Tree Removal.

Tree removal should be considered a secondary option for meeting the requirements of this Ordinance, and should be pursued only if all avenues to preservation have been exhausted.

1. The Tree is located in the buildable area or street right-of-way of a parcel or lot on which improvement is to be made and the Tree unreasonably restricts the permitted use of the property;
2. The Tree is diseased, injured beyond restoration, in danger of falling, or interferes with utility services.

9 307. - Tree Species.

A diversity of Tree species facilitates the long-term health of the urban forest. Lists of Tree species deemed acceptable by the City of Woodstock for use in meeting the requirements of this Ordinance are found in Appendix A.

ARTICLE IV. - IMPLEMENTATION, ENFORCEMENT AND PENALTIES

9.400. - Public Trees.

No person shall remove, destroy, break, cut, or deface any Tree or shrub growing in any public right-of-way, easement or city park under any circumstances. No person shall directly or indirectly place stone or cement or similar substances about any Tree growing in the public right-of-way which impedes the entrance of water and air to the roots of the Tree. No person shall attach or place any rope, wire, sign poster, handbill or any other thing on any Tree or shrub growing in any public right-of-way or city park. In the case of erection, demolition, or repair of any structure, the developer/ owner shall implement best management practices per accepted industry standards around all nearby Trees in a public right-of-way to prevent harm or injury.

9.401. - Tree Preservation Trust Fund.

This Ordinance hereby establishes the Woodstock Tree Preservation Trust Fund. The Fund will be used exclusively to purchase, install, and maintain Trees throughout the City's public areas, including parks, green spaces, right-of-way, and government building sites and, upon resolution of the City Council, to improve the City's parks and/or green spaces as specified by the council in such resolution.

1. Occasionally a project site does not have the capacity or will not bear the required 100" per acre of Trees If a property owner or developer cannot meet the minimum site density requirement for Tree replacement and/or Specimen Tree recompense, a mitigation fee for each Tree required by this Ordinance but not planted will be paid to the Tree Preservation Fund or, upon resolution of the Council, the owner or developer may be allowed to make improvements to the City's parks and/or green spaces as specified by the council in such resolution. A schedule of mitigation fees is presented below:

Replacement:	**Mitigation Fee**
Non-Recompense	$150.00 per inch
Recompense	$175.00 per inch

2 A fine for each protected Tree or specimen Tree removed without a permit issued by the City will be paid to the Tree preservation fund. Fine amounts will be based on the Fee Schedule shown above.

Article III – Section 10.200:

Any person or entity violating any provision of this Ordinance shall be guilty of a misdemeanor, and upon conviction shall be punished for each offense by a fine not exceeding one thousand dollars ($1,000.00), or by imprisonment not to exceed six (6) months. Each day such violation continues shall be deemed to be a separate offense. At the discretion of the appropriate court, a violator of this code may be given a reasonable length of time to rectify or correct the violation.

- DBH measurement shall be rounded to the nearest whole number
- Money collected from mitigation fees and fines under this Ordinance shall be deposited into the Tree preservation trust fund.

9.402. - Easements.

The City is hereby authorized to enter into agreements with the owners of private property located within the City for the purpose of acquiring easements to plant Trees. Private property owners shall acquire ownership of Trees after planting provided agreement to maintain the Trees is reached and the City is absolved of any liability attributable to the planting or presence of the Trees. No agreement may be longer than two (2) years and all shall limit the City's interest to an area sufficient to allow planting of Trees.

9.403. - Inspection.

1 Every development within the City shall be required to undergo landscape inspection by the City's designated agent prior to the issuance of a certificate of occupancy. The inspection will determine whether the Tree preservation or replacement plan has been implemented as required by this Ordinance. At the time of inspection, the City shall collect an inspection fee. This fee will be determined by the Mayor and City Council and used to cover the cost of labor and materials for performing Tree and/or landscape inspections.

2. Once completed, a written report will be prepared outlining the findings of the inspection and transmitted to the property owner or developer. If the inspection shows that Tree planting has been implemented according to plan, and all other departments have signed off on final inspections, a certificate of occupancy will be issued. If the inspection reveals deficiencies between the approved Tree protection and replacement plan and the condition of the development site, the property owner or developer will be notified of the nature and extent of the problems uncovered during inspection. Upon issuance of the report, all deficiencies must be corrected before a certificate of occupancy can be issued.

9.404. - Violation and Penalty.

It shall be unlawful for any person, firm, organization, or society to violate the provisions of this Ordinance. The removal or destruction of each Tree shall constitute a separate offense. Violation of this Ordinance shall constitute grounds for revoking or suspending any permit granted for the construction, demolition, or renovation of a structure on the lot or parcel. Upon revocation or suspension of Permit, no new Permit for construction, demolition, or renovation of any structure on the site shall be issued for not less than one (1) month; and a civil penalty of five hundred dollars ($500.00) shall be levied for violating the requirements of this Ordinance.

9.405. - Appeals

In the event an applicant disputes the decision of the City regarding Tree removal and/or replanting, applicant may file a written appeal with the Mayor and City Council. The written appeal should detail the reasons why the decision of the City staff should be vacated. Upon receiving the written appeal, the Mayor and City Council shall hear arguments and decide whether to uphold the administrative decision, modify the administrative decision, or negate the administrative decision. The decision of the Mayor and City Council shall be final. A written copy of the findings and decision of the Mayor and City Council shall be transmitted to the applicant and City.

9 406. - Validity.

Should any section of this provision of this Ordinance be declared by a court of competent jurisdiction to be invalid, such decision shall not affect the validity of the Ordinance in whole or any part thereof other than the part so declared invalid.

9.407. - Repeal of Conflicting Provision.

The provisions of any part of Resolutions in conflict herewith are repealed.

9.408. - Effective Date.

This Ordinance shall become effective upon approval by the Mayor and Council of the City of Woodstock on date of adoption of this Ordinance.

APPENDIX A – Add link to Tree List located on City of Woodstock website

APPENDIX B. - TYPICAL PLANTING DETAILS

Multi-trunk Tree Formula for Inches

Example - Triple Trunk Maple:

Add each Trunk at DBH (5" + 6.5" + 10") = 21.5"

Convert ____ to ____

5 x 5 x .785	= 19.63
6.5 x 6.5 x .785	= 33.17
10 x 10 x .785	= 78.5
	= 131.3 square inches

Convert square inches back to Diameter

131.3 / 3.14 = 41.82

Find the square root of the Diameter

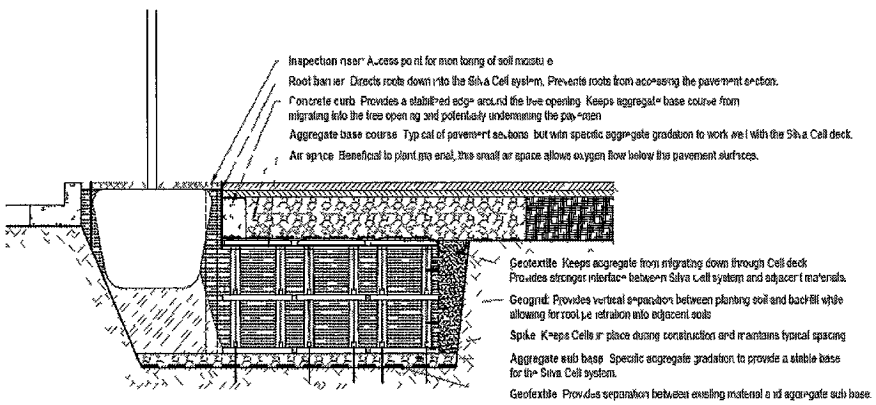
41.82 square root = 6.46 Radius

6.46 x 2 = 12.9" Diameter

12.9" = resulting inches to be used in calculation for credit for the triple trunk maple

APPENDIX C - LIGHT POLE/PARKING LOT DETAILS

APPENDIX D – Subsurface Structural Cells - SILVA CELL OR OTHER



NOTES
1. Installation to be completed in accordance with manufacturer's specifications.
2. Do not scale drawings.

Disclaimer Conditions that vary from drawings must be evaluated by a qualified Engineer and appropriate adjustments made

APPENDIX A

The City of Woodstock County Tree Species List

The City of Woodstock Tree Species List is intended to support site planning and design activities for tree preservation and replacement, tree maintenance planning and decision making in general The list is arranged alphabetically by the tree's common name with the "genus" listed first The latin name is also listed for more definitive species indentification
(*As adapted from the Athens-Clarke County Tree Species List*)

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.**
Parking Lot Canopy Tree	**Trees approved for planting in parking lots.**
	1 = trees that will project significant shade, intercept enough water, substantially filter out pollutants, and survive the conditions within a parking area to the extent they could be considered a "canopy" tree
	2 = the same as 1, except these trees are ONLY appropriate for large, expanded tree islands or landscape strips, swales, or moist soil conditions with plenty of rooting space
Canopy Size Category	Very Small - 150 square feet with a 15 foot crown diameter *The minimum open soil surface area is 25 sq ft*
	Small – 400 square feet with a 25 foot crown diameter *The minimum open soil surface area is 100 sq ft*
	Medium – 900 square feet with a 35 foot crown diameter *The minimum open soil surface area is 225 sq ft*
	Large – 1,600 square feet with a 45 foot crown diameter *The minimum open soil surface area is 400 sq ft*
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
	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**	**Recommendations on the site situation where the tree may be planted and/or conserved; locations where the tree would adapt well.** O = tree to avoid, not suitable Blank = may or may not be suitable x = good choice XX = excellent choice

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
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.**
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

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
PHYSICAL CHARACTERISTICS (continued)	
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.**
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 metro Atlanta Area	**Indicates whether or not the tree is found naturally growing in the metro Atlanta 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 = Large 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

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
ENVIRONMENTAL CHARACTERISTICS AND TOLERANCES (continued)	
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
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 of 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.**

City of Woodstock Tree Species List, *as adapted from Athens Clarke County*

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR CONSIDERATION: Square Feet of Canopy	Parking Lot Canopy Tree	Canopy Size Category	RECOMMENDED USES: 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)	*Alnus serrulata*	150		Very Small	P	XX				x		XX	x
Ash Green	*Fraxinus pennsylvanica*	1 600	2	Large	P	XX	x	XX	x	x		x	
Ash White	*Fraxinus americana*	1 600	2	Large	P	XX	x	XX	x	x		x	
Baldcypress	*Taxodium distichum*	900	2	Med um	P	x		XX	x		XX	XX	
Basswood American (Linden)	*T lia americana*	1 600		Large	C	x						x	
Beech American	*Fagus grandifolia*	1 600		Large	P	XX					0	x	
Birch River	*Betula nigra*	900	2	Medium	P	XX	x	XX	x	XX	XX	XX	0
Birch River Heritage	*Betula n gra* Heritage	900	2	Med um	P	XX	x	XX	x	XX	XX	XX	0
Blackgum (Tupelo)	*Nyssa sylvatica*	900	2	Medium	P	XX	x	XX	x			x	
Boxelder	*Acer negundo*	900		Med um	C	x						x	0
Buckeye Bottlebrush	*Aesculus parviflora*	150		Very Small	P								x
Buckeye Painted	*Aesculus sylvatica*	150		Very Small	P	x						x	x
Buckeye, Red	*Aesculus pavia*	150		Very Small	P								x
Buckthorn Carolina	*Rhamnus caroliniana*	900	1	Medium	P	x	x	x	x			x	
Buckthorn Common	*Rhamnus cathartica*	900	1	Med um	L				x				x
Buttonbush Common	*Cephalanthus occidentalis*	150		Very Small	P	x						x	x
Catalpa Southern	*Catalpa b gnonioides*	900		Med um	C	x	0		0			x	
Cedar Deodar	*Cedrus deodara*	900		Med um	L	x							
Cedar Japanese	*Cryptomeria japon ca*	900		Med um	L	x		x			x		
Chastetree (Vitex)	*Vitex agnus-castus*	150		Very Small	P		x	x	x	x			x
Cherry Black	*Prunus serotina*	900		Med um	C	x		x				x	
Cherrylaurel Carolina	*Prunus caroliniana*	900		Medium	C		0	x	0	0	XX		0
Cherry Japanese Flowering	*Prunus serrulata*	400		Small	L			x		x	XX		XX
Cherry Yoshino	*Prunes x yedoensis*	400		Small	L			XX		XX	XX		XX
Chestnut, American	*Castanea dentata*	1 600		Large	N	suscept ble to chestnut blight							
Chestnut, Chinese	*Castanea mollissima*	1 600		Large	P	x		x					
Chinaberry	*Melia azedarach*	900		Medium	N	weed tree brittle wood							
Chinquapin Allegheny	*Castanea pum la*	400		Small	C	x							x
Cottonwood Eastern	*Populus deltoides*	1 600	2	Large	C	x			x		0	x	
Crabapple Japanese Flowering	*Malus floribunda*	400		Small	L		x	x		x	XX		XX
Crabapple Southern	*Malus angustifolia*	400		Small	C	x	x	x			x		XX
Crapemyrtle Common	*Lagerstroemia indica*	150		Very Small	P		XX	XX	XX	XX	XX		0 XX
Cypress Leyland	*Cupressocypans leylandii*	400		Small	L	x	0	x	x		x		0
Devil s Walking Stick	*Aralia spinosa*	150		Very Small	N	large thorns							
Devilwood	*Osmanthus americanus*	400		Small	C	x		x					
Dogwood Flowering	*Cornus florida*	400		Small	P	XX	XX	XX	0	0	XX		XX
Dogwood Flowering Pink	*Cornus florida var rubra*	400		Small	P	XX	XX	XX	0	0	XX		x
Dogwood Kousa	*Cornus kousa*	400		Small	P		x	x			x		x
Dogwood Swamp	*Cornus stricta*	400		Small	C	x						x	x
Elm American	*Ulmus amer cana*	1 600		Large	C	x	x	x				x	
Elm Chinese (Lace Bark)	*Ulmus parvifolia*	900	1	Med um	L	0	XX	XX	XX	XX	0	0	
Elm Siberian	*Ulmus pumila*	900		Med um	N	pest susceptible weed tree							
Elm Slippery	*Ulmus rubra*	1 600		Large	C	x	x	x				x	
Elm Winged	*Ulmus alata*	1 600	1	Large	P	XX	XX	XX	XX		0	0	
Flametree Chinese (Bougainvillea)	*Koelreuteria bipinnata*	400	1	Small	P			x					

SPECIES COMMON NAME	PHYSICAL CHARACTERISTICS: Height Class in Urban Conditions	Crown Class in Urban Conditions	Mature Crown Form	Typical Range of Mature Tree Height	Typical Range of Mature Crown Width	Leaf Type	Leaf Texture	Fall Leaf Color	Flower Color	Flowering Time	Wildlife Value	Excessive Litter
Alder Hazel (Tag)	S	VS	Mult Stemmed	10 20	10 20	DB	M	YE	I			
Ash Green	L	L	Rounded	60 100	40 50	DB	M	MU	I		X	
Ash White	L	L	Rounded	50 80	30 60	DB	M	MA	I		X	
Baldcypress	L	M	Pyramidal	50 100	20 50	DC	F	BR	I		X	
Basswood American (Linden)	M	L	Irregular	60 100	35 50	DB	C	YE	Y	Summer	X	
Beech American	L	L	Oval	80 100	50 70	DB	M	YE	I		X	
Birch River	M	M	Pyramidal	50 90	40-60	DB	F/M	YE	I			
Birch River Heritage	M	M	Pyramidal	50 90	40-60	DB	F/M	YE	I			
Blackgum (Tupelo)	M	M	Oval	50 100	20-35	DB	M	RE	I		X	
Boxelder	L	M	Rounded	50 75	40-50	DB	M	YE	I		X	
Buckeye Bottlebrush	S	VS	Mult Stemmed	15 20	10 15	DB	M	YE	W	Summer	X	
Buckeye Painted	S	VS	Rounded	15 25	5 15	DB	M	YE	P/Y	Spring	X	
Buckeye, Red	S	VS	Rounded	10 15	10 15	DB	M	YE	R	Spring	X	
Buckthorn Carolina	M	M	Oval	30-40	10-30	DB	M	OR	I		X	
Buckthorn Common	S	M	Rounded	20 25	20 25	DB	M	YE	I		X	
Buttonbush Common	S	VS	Multi Stemmed	10 15	10 15	DB	M	YE	W	Late Summer	X	
Catalpa Southern	M	M	Rounded	30-40	30-40	DB	C	YE	W	Spring	X	X
Cedar Deodar	L	M	Pyramidal	40 100	40 100	EC	F	EV	I	I		
Cedar Japanese	L	M	Pyramidal	40-60	15 20	EC	F	EV	I			
Chastetree (Vitex)	S	VS	Multi-Stemmed	15 20	10 20	DB	M	I	B/L/W	Summer	X	
Cherry Black	L	M	Oval	50 90	15-50	DB	M	YE	W	Early Spring	X	
Cherrylaurel Carolina	M	M	Oval	20-40	15 25	EB	M	EV	W	Spr ng	X	
Cherry Japanese Flowering	S	S	Rounded	20-30	20 30	DB	M	OR	P	Spring		
Cherry Yoshino	S	S	Rounded	20-45	20-40	DB	M	YE	P/W	Spr ng	X	
Chestnut, American	L	L										
Chestnut, Chinese	L	L	Rounded	40 60	40 60	DB	M	BR	W	Summer	X	
Chinaberry	M	M										
Chinquapin Allegheny	S	S	Rounded	10 25	10 25	DB	M	BR	I		X	
Cottonwood Eastern	L	L	Pyram dal	50 100	20 75	DB	C	YE	I		X	X
Crabapple Japanese Flowering	S	S	Rounded	15-25	15 25	DB	M	YE	P	Spring	X	
Crabapple Southern	S	S	Spread ng	20 25	10 20	DB	M	YE	P	Spring	X	X
Crapemyrtle Common	S	VS	Multi Stemmed	15-30	10 25	DB	F	RE	M	Summer		
Cypress Leyland	M	S	Pyram dal	50-60	20-30	EC	F	EV	I			
Devil s Walking Stick	S	VS										
Devilwood	S	S	Rounded	15-25	10 15	DB	M	YE	W	Spring	X	
Dogwood Flowering	S	S	Spread ng	15 30	15-30	DB	M	RE	W	Spr ng	X	
Dogwood Flowering Pink	S	S	Spread ng	15-30	15-30	DB	M	RE	P	Spring	X	
Dogwood Kousa	S	S	Rounded	10 20	10 20	DB	M	RE	W	Spr ng	X	
Dogwood Swamp	S	S	Rounded	10 25	10 25	DB	M	RE	W	Spring	X	
Elm American	L	L	Upright	50 100	30 70	DB	M	YE	I		X	
Elm Chinese (Lace Bark)	M	M	Upright	40-60	30-50	DB	F/M	YE	I			
Elm Siberian	L	M										
Elm Slippery	L	L	Upright	70-80	30 50	DB	M	YE	I		X	
Elm Winged	L	L	Upright	70-80	30 50	DB	F	YE	I			
Flametree Chinese (Bougainvillea)	M	S	Rounded	20-40	20-40	DB	M	YE	Y	Summer		

SPECIES COMMON NAME	ENVIRONMENTAL CHARACTERISTICS AND TOLERANCES: Native Tree to Athens-Clarke Co	Growth Rate	Average Life Span	Net Effect on Air Quality	Soil Moisture	Drought Tolerance	Preferred Soil pH	Light Requirement	Construction Tolerance/Limitations	Urban Tolerant Tree
Alder Hazel (Tag)	Y	F	S	n/a	W	M	ac dic	FS	G/	X
Ash Green	Y	F	M	0 090	W	H	sl ac sl alk	FS	G/	
Ash White	Y	M	M	0 100	M	L	sl ac-sl alk	FS	M/IS	
Baldcypress	N	M	L	0 032	M	H	ac-sl alk	FS	G/	X
Basswood American (Linden)	Y	F	M	0 144	M	L	ac alk	PS	P/A	
Beech American	Y	S	L	0 160	M	L	ac d c	FS	P/A	
Birch River	Y	F	M	0 117	M	L	ac d c	FS	G/	
Birch River Heritage	Y	F	M	n/a	M	L	acid c	PS	n/a	
Blackgum (Tupelo)	Y	S	M	0 053	M	M	sl ac sl alk	FS	G/	X
Boxelder	Y	F	S	0 036	W	M	adapt	FS	G/	
Buckeye Bottlebrush	N	M	S	n/a	M	L	ac adapt	SH	n/a	
Buckeye Painted	Y	M	S	n/a	M	L	ac-adapt	SH	n/a	
Buckeye, Red	N	M	S	n/a	M	L	ac	PS	M/I	
Buckthorn Carolina	Y	M	S	n/a	M	M	ac-alk	FS	M/IS	
Buckthorn Common	N	M	S	n/a	M	H	adapt	FS	n/a	X
Buttonbush Common	Y	M	S	n/a	W	L	n/a	FS	G/I	
Catalpa Southern	Y	F	S	0 014	M	M	sl ac sl alk	FS	G/	
Cedar Deodar	N	M	L	0 031	D	H	ac-sl alk	FS	g	
Cedar Japanese	N	S	M	0 084	M	H	ac	FS	n/a	X
Chastetree (Vitex)	N	M	S	n/a	D	H	ac alk	FS	n/a	X
Cherry Black	Y	F	M	0 083	M	M	sl ac	FS	M/I	
Cherrylaurel Carolina	N	M	M	n/a	M	H	ac-sl alk	FS	G/	X
Cherry Japanese Flowering	N	F	S	0 013	M	L	ac-alk	FS	n/a	
Cherry Yoshino	N	F	S	n/a	M	L	ac	FS	n/a	
Chestnut, American	Y									
Chestnut, Chinese	N	S	L	n/a	D	M	ac sl alk	FS	n/a	X
Chinaberry	N									
Chinquapin Allegheny	Y	S	S	n/a	D	H	n/a	FS	P/P	
Cottonwood Eastern	Y	F	M	-0 708	M	M	sl ac-sl alk	FS	G/	X
Crabapple Japanese Flowering	N	M	S	n/a	M	L	sl ac-sl alk	FS	n/a	
Crabapple Southern	Y	M	S	n/a	M	L	sl ac-sl alk	FS	M/ICP	
Crapemyrtle Common	N	F	M	0 004	M	H	ac-sl alk	FS	n/a	X
Cypress Leyland	N	F	M	0 053	M	M	ac alk	FS	g	
Devil s Walking Stick	Y									
Devilwood	Y	M	M	n/a	M	M		PS	M/I	
Dogwood Flowering	Y	M	M	0 021	M	L	ac-nu	PS	M/IP	
Dogwood Flowering Pink	Y	M	M	n/a	M	L	n/a	PS	n/a	
Dogwood Kousa	N	S	S	n/a	M	L	ac	PS	n/a	
Dogwood Swamp	Y	S	S	n/a	W	L	n/a	PS	G/I	
Elm American	Y	M	M	0 143	M	H	sl ac sl alk	FS	M/P	
Elm Chinese (Lace Bark)	N	F	M	0 058	M	H	sl ac-sl alk	FS	n/a	X
Elm Siberian	N									
Elm Slippery	Y	F	M	0 086	M	M	sl ac sl alk	FS	M/P	
Elm Winged	Y	M	M	0 034	M	H	sl ac-sl alk	FS	G/	X
Flametree Chinese (Bougainvillea)	N	M	M	n/a	M	H	sl ac sl alk	FS	n/a	X

City of Woodstock Tree Species List, as adapted from Athens Clarke County

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR CONSIDERATION: Square Feet of Canopy	Park on Lot Canopy Tree	Canopy Size Category	RECOMMENDED USES: 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 (Grancy Gray Beard)	*Chionanthus virginicus*	150		Very Small	P	x	x	x			x		x
Fringetree Chinese	*Chionanthus retusus*	150		Very Small	P		x	x			x		x
Ginkgo (Female)	*Ginkgo biloba*	1 600		Large	L	x	0	x	0	0	0		
Ginkgo (Male)	*Ginkgo biloba*	1 600	1	Large	P	x	XX	XX	x	XX	0		
Goldenraintree	*Koelreuteria pan culata*	400	1	Small	P		x	x	x	x	x		
Hackberry Common	*Celt s occidentalis*	1 600		Large	C	x		x				x	
Hackberry Georgia	*Celtis tenuifolia*	1 600		Large	C	x		x				x	
Hawthorne Washington	*Crataegus phaenopyrum*	400		Small	P		x	x		x			x
Hemlock Eastern	*Tsuga canadensis*	1 600		Large	N	not heat tolerant, out of range							
Hickory Bitternut	*Carya cordiformis*	1 600		Large	C	x	0	x	0	0			
Hickory Mockernut	*Carya tomentosa*	1 600		Large	C	x	0	x	0	0			
Hickory Pignut	*Carya glabra*	1 600		Large	C	x	0	x	0	0			
Hickory Sand	*Carya pallida*	1 600		Large	C	x	0	x	0	0			
Hickory Shagbark	*Carya ovata*	1 600		Large	C	x	0	x	0	0			
Hickory Southern Shagbark	*Carya ovata var australis*	1 600		Large	C	x	0	x	0	0			
Holly American	*Ilex opaca*	150		Very Small	P	x		XX	x		XX		0
Holly Deciduous (Possumhaw)	*Ilex decidua*	150		Very Small	C	x		x				x	x
Holly Fosters	*Ilex x attenuata* Fosteri	150		Very Small	P			x	x	x	x		
Holly Ornamental Variety	*Ilex* spec es	150		Very Small	L			x	x	x	x		x
Holly Savannah	*Ilex x attenuata* Savannah	150		Very Small	P	x		x	x	x	x		0
Holly Yaupon	*Ilex vomitona*	150		Very Small	P		x	x	x	x			x
Honeylocust	*Gleditsia tnacanthos*	900		Medium	C	x		x	0	0			
Hophornbeam American	*Ostrya virginiana*	900	1	Med um	P	x		x	x			x	
Hornbeam Am (Ironwood Blue Beech)	*Carpinus caroliniana*	900	1	Med um	P	XX	XX	XX	x	XX	XX	XX	
Hornbeam European	*Carpinus betulus*	900	1	Med um	P		XX	XX	XX	XX	x		
Hornbeam Japanese	*Carpinus japonica*	400		Small	L		x	x	x	x	x		
Katsuratree	*Cercid phyllym japonicum*	900	1	Med um	L	x		x	x				
Locust, Black	*Rob nia pseudoacacia*	900		Med um	C	x			0	0		x	
Magnolia Cucumber	*Magnolia acuminata*	1 600		Large	C	x		x	0			x	
Magnolia Japanese (Saucer)	*Magnol a x soulang ana*	900		Med um	L			x	0				x
Magnolia Southern	*Magnolia grand flora*	1 600		Large	P	XX		XX	0		XX		0
Magnolia Southern Little Gem	*Magnol a grandiflora* L ttle Gem	150		Very Small	P			x	0	x			XX
Magnolia Star	*Magnolia stellata*	150		Very Small	L		x	x					x
Magnolia Sweetbay	*Magnolia virginiana*	900	2	Med um	P	XX		x	x		XX	XX	
Maple Amur	*Acer g nnala*	400		Small	P		x	x					x
Maple Chalk	*Acer leucoderme*	900	1	Medium	P	x	x	x	x		x		
Maple Hedge	*Acer campestre*	900	1	Medium	P		x	x	x		x		
Maple Japanese	*Acer palmatum*	400		Small	L	0		x	0				x
Maple Norway	*Acer platanoides*	900		Medium	N	pest susceptible							
Maple Red	*Acer rubrum*	900	2	Medium	P	XX	XX	XX	x	XX	XX	XX	0
Maple Silver	*Acer sacchannum*	1 600		Large	L	0		x	0	0			
Maple Southern Sugar (Florida Sugar)	*Acer barbatum*	900	1	Medium	P	XX	x	XX	x	XX	XX	x	
Maple Sugar	*Acer saccharum*	1 600	2	Large	P	XX	XX	XX	x			x	0
Maple Sugar Green Mountain	*Acer saccharum* Green Mounta n	1 600	2	Large	P	XX	XX	XX	x				0
Maple Sugar 'Legacy	*Acer saccharum* Legacy'	1 600	2	Large	P	XX	XX	XX	x				0

SPECIES COMMON NAME	PHYSICAL CHARACTERISTICS: Height Class in Urban Cond tions	Crown Class in Urban Cond tions	Mature Crown Form	Typical Range of Mature Tree Height	Typical Range of Mature Crown Width	Leaf Type	Leaf Texture	Fall Leaf Color	Flower Color	Flowering Time	Wildlife Value	Excessive Litter
Fringetree (Grancy Gray Beard)	S	VS	Oval	10 30	5 15	DB	M/C	YE	W	Spnng	X	
Fringetree Chinese	S	VS	Rounded	15 25	10-15	DB	M/C	YE	W	Spnng	X	
Ginkgo (Female)	M	L	Pyram dal	50 75	30-60	DB	C	YE	I			X
Ginkgo (Male)	M	L	Pyramidal	50 75	30 60	DB	C	YE	I			
Goldenraintree	M	S	Rounded	20-40	20-40	DB	M	YE	Y	Summer		
Hackberry Common	L	L	Spread ng	60 90	25-60	DB	F/M	YE	I		X	
Hackberry Georgia	M	L	Spreading	25 35	25 35	DB	F/M	YE	I		X	
Hawthorne Washington	S	S	Rounded	10 30	5 25	DB	F	MU	W	Late Spnng	X	
Hemlock Eastern	L	L										
Hickory Bitternut	L	L	Oval	50 100	50-75	DB	M	YE	I		X	
Hickory Mockernut	L	L	Oval	50 100	50-75	DB	M/C	YE	I		X	X
Hickory Pignut	L	L	Oval	50 100	50-75	DB	M	YE	I		X	
Hickory Sand	L	L	Oval	40 90	20-40	DB	M	YE	I		X	
Hickory Shagbark	L	L	Oval	70 100	50-75	DB	M	YE	I		X	
Hickory Southern Shagbark	L	L	Oval	60 80	40 60	DB	M	YE	I		X	
Holly American	M	VS	Pyramidal	20 70	15-25	EB	M	EV	I		X	
Holly Deciduous (Possumhaw)	S	VS	Rounded	10 20	10 20	DB	F	I	I		X	
Holly Fosters	S	VS	Pyramidal	15-25	10 15	EB	F/M	EV	I		X	
Holly Ornamental Variety	S	VS	Rounded	10 20	10 15	EB	M	EV	I			
Holly Savannah	M	VS	Pyramidal	30-45	10 15	EB	M	EV	I		X	
Holly Yaupon	S	VS	Irregular	10 25	5-10	EB	F	EV	I		X	
Honeylocust	L	M	Irregular	60-80	30 50	DB	F	YE	I			
Hophornbeam American	M	M	Oval	15-40	10 30	DB	F/M	YE	W	Summer	X	
Hornbeam Am (Ironwood Blue Beech)	M	M	Oval	20 35	15-30	DB	F/M	YE	I		X	
Hornbeam European	M	M	Oval	40-60	35-40	DB	F/M	YE	I		X	
Hornbeam Japanese	M	S	Oval	20-30	20-30	DB	M	RE	I			
Katsuratree	M	M	Spread ng	40-60	35-60	DB	M	YE	I			
Locust, Black	L	M	Spread ng	40 90	20-40	DB	F	YE	W	Spnng	X	
Magnolia Cucumber	L	L	Upright	60-80	20-60	DB	C	YE	W	Spnng	X	
Magnolia Japanese (Saucer)	M	M	Upright	20-30	10-30	DB	C	YE	P	Late Winter		
Magnolia Southern	L	L	Pyramidal	80 100	30 50	EB	C	EV	W	Late Spnng	X	X
Magnolia Southern Little Gem	M	VS	Pyramidal	40-60	20 30	EB	C	EV	W	Late Spnng	X	X
Magnolia Star	S	VS	Multi Stemmed	15 20	15-20	DB	M	YE	W	Late Winter	X	
Magnolia Sweetbay	M	M	Oval	30-60	20-40	EB	C	EV	W	Summer	X	
Maple Amur	S	S	Rounded	15 25	15 25	DB	M	RE	W	Spnng		
Maple Chalk	M	M	Spread ng	20-40	10-30	DB	M	I	I			
Maple Hedge	M	M	Rounded	25 35	25-35	DB	M	YE	I			
Maple Japanese	S	S	Oval	15 25	10 25	DB	M	RE	I			
Maple Norway	M	M										
Maple Red	M	M	Rounded	40 90	20 35	DB	M	RE	R	Late Winter	X	
Maple Silver	L	L	Rounded	50-80	40-60	DB	M	YE	I			
Maple Southern Sugar (Florida Sugar)	M	M	Rounded	40 70	25-60	DB	M	OR	I			
Maple Sugar	L	L	Oval	60-80	30 50	DB	M	OR	I		X	
Maple Sugar Green Mountain	L	L	Oval	60-80	30-50	DB	M	OR	I		X	
Maple Sugar 'Legacy	L	L	Oval	60-80	30-50	DB	M	OR	I		X	

SPECIES COMMON NAME	ENVIRONMENTAL CHARACTERISTICS AND TOLERANCES: Native Tree to metro Atl	Growth Rate	Average Life Span	Net Effect on Air Quality	Soil Moisture	Drought Tolerance	Preferred Soil pH	Light Requirement	Construction Tolerance/Limitations	Urban Tolerant Tree
Fringetree (Grancy Gray Beard)	Y	M	S	n/a	M	L	ac d c	PS	M/IS	
Fringetree Chinese	N	S	S	n/a	M	M	ac d c	PS	n/a	
Ginkgo (Female)	N	S	L	0 108	M	H	sl ac	FS	g	X
Ginkgo (Male)	N	S	L	0 108	M	H	sl ac	FS	g	X
Goldenraintree	N	M	M	-0 087	M	H	sl ac sl alk	FS	n/a	
Hackberry Common	Y	M	M	0 060	M	H	sl ac-sl alk	FS	n/a	X
Hackberry Georgia	Y	S	M	n/a	D	H	sl ac-sl alk	FS	M/IS	
Hawthorne Washington	N	S	S	0 017	M	M	sl ac sl alk	FS	g	
Hemlock Eastern	N									
Hickory Bitternut	Y	F	L	0 069	M	L	acid c	FS	P/S	
Hickory Mockernut	Y	S	L	0 059	D	H	sl ac	FS	MP/S	
Hickory Pignut	Y	S	L	0 058	M	H	sl ac	FS	M/S	
Hickory Sand	Y	S	M	n/a	D	H	sl ac	FS	M/	
Hickory Shagbark	Y	S	L	0 064	M	M	sl ac	FS	P/S	
Hickory Southern Shagbark	Y	S	L	n/a	M	M	sl ac	FS	n/a	
Holly American	Y	S	L	0 013	M	H	ac d c	PS	G/	X
Holly Deciduous (Possumhaw)	Y	M	S	n/a	W	H	ac-alk	PS	G/	
Holly Fosters	N	S	S	n/a	M	H	sl ac	FS	n/a	X
Holly Ornamental Variety	N	S	S	n/a	M	H	ac	FS	n/a	
Holly Savannah	N	M	S	n/a	M	H	ac-sl alk	FS	n/a	
Holly Yaupon	Y	S	S	n/a	D	H	ac alk	FS	G/	X
Honeylocust	Y	F	S	0 009	M	H	sl ac sl alk	FS	G/	X
Hophornbeam American	Y	S	M	0 032	M	H	ac-alk	SH	M/S	X
Hornbeam Am (Ironwood Blue Beech)	Y	S	M	0 009	M	M	sl ac sl alk	PS	M/SC	
Hornbeam European	N	S	M	0 037	M	H	ac alk	PS	n/a	X
Hornbeam Japanese	N	S	M	n/a	M	M	adapt	PS	n/a	
Katsuratree	N	F	L	n/a	M	L	ac sl alk	FS	pm	
Locust, Black	Y	F	M	0 123	M	H	sl ac sl alk	FS	G/P	X
Magnolia Cucumber	Y	F	M	n/a	M	L	ac d c	PS	M/I	
Magnolia Japanese (Saucer)	N	M	S	0 009	M	L	ac d c	FS	n/a	
Magnolia Southern	Y	M	L	0 002	M	M	ac d c	FS	M/I	
Magnolia Southern Little Gem	Y	S	M	n/a	M	L	ac dic	FS	n/a	
Magnolia Star	N	S	S	n/a	M	M	ac d c	PS	n/a	
Magnolia Sweetbay	Y	F	M	n/a	W	L	ac d c	PS	G/	
Maple Amur	N	M	M	0 008	M	M	adapt	FS	n/a	
Maple Chalk	Y	M	M	n/a	M	H	ac sl alk	FS	P/A	X
Maple Hedge	N	S	S	0 017	M	H	ac alk	FS	n/a	X
Maple Japanese	N	S	S	0 008	M	L	sl ac-sl alk	PS	n/a	
Maple Norway	N									
Maple Red	Y	F	L	0 084	M	L	sl ac	FS	G/	
Maple Silver	N	F	S	0 084	M	H	ac	FS	P/A	
Maple Southern Sugar (Florida Sugar)	Y	M	M	n/a	M	H	ac	FS	M/IS	X
Maple Sugar	Y	M	L	0 100	M	M	sl ac-sl alk	PS	pm	
Maple Sugar Green Mountain	Y	F	L	0 100	M	M	sl ac-sl alk	PS	n/a	
Maple Sugar 'Legacy	Y	F	L	0 100	M	M	sl ac sl alk	PS	n/a	

City of Woodstock Tree Species List, as adapted from Athens Clarke County

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR CONSIDERATION: Square Feet of Canopy	Parking Lot Canopy Tree	Canopy Size Category	RECOMMENDED USES: 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
Maple Trident	*Acer buergeranum*	400	1	Small	P	0	XX	XX	XX	XX			XX
Mimosa	*Albizia julibrissin*	900		Medium	N	pest susceptible weed tree							
Mulberry Red	*Morus rubra*	900		Medium	C	x	0		0	0		x	
Oak Black	*Quercus velutina*	1 600	2	Large	C	x		x	x			x	
Oak Cherrybark	*Quercus falcata var pagodifolia*	1 600	2	Large	P	x		x	x			x	
Oak Chestnut	*Quercus prinus*	1 600		Large	P	x	0	XX	0	0			0
Oak Diamond Leaf (Laurel)	*Quercus laurifolia*	1 600		Large	P	x	x	x					
Oak English	*Quercus robur*	1 600		Large	L		x	x					
Oak Georgia	*Quercus georgiana*	1 600		Large	C	x		x					
Oak Laurel	*Quercus hemisphaerica*	1 600	1	Large	P	x	x	x	x				
Oak Laurel Darlington	*Quercus hemisphaerica* Darlington	1 600	1	Large	P	x	XX	XX	x				
Oak Live	*Quercus virginiana*	1 600		Large	N	out of range							
Oak Northern Red	*Quercus rubra*	1 600	2	Large	P	XX	x	XX	x				
Oak Nuttall	*Quercus nuttallii*	1 600	1	Large	P	x	x	x	x				
Oak Oglethorpe	*Quercus oglethorpensis*	1 600		Large	C	x	x	x					
Oak Overcup	*Quercus lyrata*	1 600	2	Large	P	XX	XX	XX	x			x	
Oak Pin	*Quercus palustris*	1 600		Large	L	0	x	x	0	0			0
Oak Post	*Quercus stellata*	1 600		Large	C	x	x	XX					
Oak Sawtooth	*Quercus acutissima*	1 600		Large	L	0	0	x	0	0			0
Oak, Scarlet	*Quercus coccinea*	1 600	2	Large	P	XX	XX	XX	x				
Oak Shumard	*Quercus shumardii*	1 600	1	Large	P	XX	XX	XX	XX				
Oak Southern Red	*Quercus falcata*	1 600	2	Large	P	XX	x	XX	x			x	
Oak Swamp Chestnut	*Quercus michauxii*	1 600		Large	P	x	0	x	0	0		x	
Oak Swamp White	*Quercus bicolor*	1 600		Large	P	x	x	x				x	
Oak Water	*Quercus nigra*	1 600		Large	P	XX	x	XX				XX	0
Oak White	*Quercus alba*	1 600		Large	P	XX	x	XX					
Oak Willow	*Quercus phellos*	1 600	1	Large	P	XX	XX	XX	XX	0		XX	0
Orange Osage	*Maclura pomifera*	900		Medium	L	x	0	x	0	0			0
Parrotia	*Parrotia persica*	400		Small	L		x	x					x
Pear Bradford	*Pyrus calleryana* Bradford	900		Medium	N	defective branch structure							
Pear Callery Variety	*Pyrus calleryana*	900		Medium	N	defective branch structure							
Pecan	*Carya illinoensis*	1 600		Large	P	x	0	x	0	0	0		
Persimmon Common	*Diospyros virginiana*	900		Medium	P	x	0	x	0	0		x	
Pine Eastern White	*Pinus strobus*	1 600		Large	N	pest susceptible not heat tolerant							
Pine Loblolly	*Pinus taeda*	1 600		Large	P	XX	x	x	XX		XX	x	0
Pine Longleaf	*Pinus palustris*	1 600		Large	C			x	x		x	0	
Pine Shortleaf	*Pinus echinata*	1 600		Large	P	XX	x	x	x		x	x	0
Pine Slash	*Pinus elliottii*	1 600		Large	C			x	x		x	0	
Pine Virginia	*Pinus virginiana*	900		Medium	P	x		x	x		XX	x	
Pistache Chinese	*Pistacia chinensis*	900	1	Medium	P		x	XX	XX	x	x		0
Planetree London	*Platanus x acerifolia*	1 600	2	Large	P	x	XX	XX	XX				
Plum Chickasaw	*Prunus angustifolia*	150		Very Small	C	x	0	x			x		x
Plum Purpleleaf	*Prunus cerasifera*	400		Small	L		x	x			XX		x
Poplar Lombardy	*Populus nigra var italica*	900		Medium	N	not heat tolerant							
Poplar White	*Populus alba*	900		Medium	C			x					

SPECIES COMMON NAME	PHYSICAL CHARACTERISTICS: Height Class in Urban Conditions	Crown Class in Urban Conditions	Mature Crown Form	Typical Range of Mature Tree Height	Typical Range of Mature Crown Width	Leaf Type	Leaf Texture	Fall Leaf Color	Flower Color	Flowering Time	Wildlife Value	Excessive Litter
Maple Trident	S	S	Rounded	20-45	20 30	DB	M	MU	I			
Mimosa	M	M										
Mulberry Red	L	M	Rounded	40 70	20-50	DB	C	YE	I		X	X
Oak Black	L	L	Rounded	70 90	50 60	DB	M	RE	I		X	
Oak Cherrybark	L	L	Rounded	60 100	30 50	DB	M	RE	I		X	
Oak Chestnut	L	L	Rounded	50 80	30 60	DB	M	RE	I		X	X
Oak Diamond Leaf (Laurel)	L	L	Rounded	60 80	50 60	DB	M	YE	I		X	
Oak English	L	L	Rounded	40 60	40 60	DB	M	BR	I		X	
Oak Georgia	L	L	Rounded	20-40	10 30	DB	M	BR	I		X	
Oak Laurel	L	L	Rounded	60 90	50 60	DB	M	BR	I		X	
Oak Laurel Darlington	L	L	Rounded	60 90	50-60	DB	F	BR	I		X	
Oak Live	L	L										
Oak Northern Red	L	L	Rounded	60 100	30-60	DB	M	RE	I		X	
Oak Nuttall	L	L	Rounded	60-80	35-50	DB	M	RE	I		X	
Oak Oglethorpe	M	L	Rounded	40 70	30 50	DB	M	RE	I		X	
Oak Overcup	L	L	Rounded	30-45	30-45	DB	M	BR	I		X	
Oak Pin	L	L	Pyramidal	40 100	20 50	DB	M	RE	I		X	
Oak Post	L	L	Rounded	40-50	35-40	DB	M/C	BR	I		X	
Oak Sawtooth	M	L	Oval	50-60	30-60	DB	M	YE	I		X	X
Oak, Scarlet	L	L	Rounded	50-80	30 50	DB	M	RE	I		X	
Oak Shumard	L	L	Rounded	60 100	30 70	DB	M	RE	I		X	
Oak Southern Red	L	L	Rounded	60 100	30 70	DB	M	OR	I	I	X	
Oak Swamp Chestnut	L	L	Oval	70 90	30-60	DB	M	YE	I		X	
Oak Swamp White	L	L	Oval	70 90	30-60	DB	M	YE	I		X	
Oak Water	L	L	Rounded	50 100	30 70	DB	M	YE	I		X	
Oak White	L	L	Rounded	60 100	30-80	DB	M	RE	I		X	
Oak Willow	L	L	Rounded	40 100	30-60	DB	F/M	YE	I		X	
Orange Osage	M	M	Spreading	30-40	30-40	DB	M/C	YE	I		X	X
Parrotia	S	S	Rounded	20-40	20 35	DB	M	OR	R	Spring		
Pear Bradford	M	M										
Pear Callery Variety	M	M										
Pecan	L	L	Upright	60 100	30 75	DB	M/C	YE	I		X	X
Persimmon Common	L	M	Oval	70-80	40-60	DB	M	RE	I		X	X
Pine Eastern White	L	L										
Pine Loblolly	L	L	Pyramidal	80 100	20-40	EC	F	EV	I		X	
Pine Longleaf	L	L	Pyramidal	60 100	20-40	EC	F	EV	I		X	
Pine Shortleaf	L	L	Pyramidal	60 100	20-40	EC	F	EV	I		X	
Pine Slash	L	L	Pyramidal	60 100	20-50	EC	F	EV	I		X	
Pine Virginia	M	M	Pyramidal	15 70	10 35	EC	F	EV	I		X	
Pistache Chinese	M	M	Rounded	60-80	40-50	DB	M	RE	G	Spring	X	
Planetree London	L	L	Irregular	60 100	20-80	DB	C	YE	I			
Plum Chickasaw	S	VS	Rounded	10 20	10 20	DB	F	I	W	Late Winter	X	
Plum Purpleleaf	S	S	Rounded	10 25	10 25	DB	F	RE	P/W	Spring	X	
Poplar Lombardy	L	M										
Poplar White	L	M	Oval	40 100	20-60	DB	C	YE	I			

SPECIES COMMON NAME	ENVIRONMENTAL CHARACTERISTICS AND TOLERANCES: Native Tree to metro Atl	Growth Rate	Average Life Span	Net Effect on Air Quality	Soil Moisture	Drought Tolerance	Preferred Soil pH	Light Requirement	Construct on Tolerance/Limitations	Urban Tolerant Tree
Maple Trident	N	F	M	n/a	M	M	ac alk	FS	n/a	X
Mimosa	N									
Mulberry Red	Y	F	S	0 099	M	H	sl ac sl alk	FS	G/	
Oak Black	Y	M	L	0 253	D	H	sl ac	FS	G/	
Oak Cherrybark	Y	M	L	n/a	M	M	ac	FS	G/	
Oak Chestnut	Y	S	L	-0 342	D	H	ac d c	FS	GM/S	
Oak Diamond Leaf (Laurel)	N	M	L	n/a	M	M	ac sl alk	FS	G/	
Oak English	N	S	M	-0 275	M	M	sl ac-sl alk	FS	n/a	
Oak Georgia	Y	M	M	n/a	D	H	ac-alk	FS	n/a	
Oak Laurel	N	F	M	-0 314	D	H	adapt	FS	n/a	
Oak Laurel Darlington	N	F	M	n/a	D	H	adapt	FS	n/a	
Oak Live	N									
Oak Northern Red	Y	F	L	-0 503	M	M	ac sl ac	FS	GM/SC	
Oak Nuttall	Y	M	L	n/a	M	M	ac	FS	n/a	
Oak Oglethorpe	Y	S	M	n/a	W	M	n/a	FS	n/a	
Oak Overcup	Y	M	L	-0 159	W	M	ac sl alk	FS	G/	
Oak Pin	N	M	M	-0 483	M	M	acid c	FS	mg	
Oak Post	Y	M	L	-0 327	D	H	ac sl alk	FS	G/	
Oak Sawtooth	N	F	M	-0 159	M	M	ac-sl alk	FS	n/a	
Oak, Scarlet	Y	M	L	0 592	D	H	sl ac	FS	G/	
Oak Shumard	Y	F	L	-0 265	M	H	ac alk	FS	G/	
Oak Southern Red	Y	M	L	0 576	M	H	ac	FS	G/	
Oak Swamp Chestnut	Y	M	L	-0 544	M	M	n/a	FS	G/	
Oak Swamp White	Y	M	L	-0 457	M	M	n/a	FS	G/	
Oak Water	Y	F	M	-0 451	M	M	ac sl alk	FS	G/	
Oak White	Y	S	L	-0 348	M	M	acidic	FS	GM/S	
Oak Willow	Y	F	L	-0 314	M	H	ac dic	FS	GM/S	X
Orange Osage	N	F	L	0 000	D	H	sl ac-sl alk	FS	n/a	X
Parrotia	N	F	S	n/a	M	M	ac sl alk		n/a	
Pear Bradford	N									
Pear Callery Variety	N									
Pecan	N	S	M	0 088	M	L	sl ac-sl alk	FS	mg	
Persimmon Common	Y	M	S	0 058	M	H	ac-alk	FS	G/P	X
Pine Eastern White	N									
Pine Loblolly	Y	F	M	0 016	M	M	ac d c	FS	G/	
Pine Longleaf	N	M	L	0 010	M	H	ac sl alk	FS	GM/C	
Pine Shortleaf	Y	M	L	0 008	M	H	ac	PS	GM/P	
Pine Slash	N	F	M	0 010	M	M	ac-sl alk	FS	G/	
Pine Virginia	Y	F	S	0 003	M	H	ac	FS	G/	X
Pistache Chinese	N	M	M	n/a	M	H	ac-alk	FS	n/a	X
Planetree London	N	F	M	0 415	M	H	sl ac-sl alk	FS	pg	X
Plum Chickasaw	Y	M	S	n/a	M	H	sl ac sl alk	FS	M/IS	
Plum Purpleleaf	N	M	S	0 014	M	M	sl ac-sl alk	FS	mg	
Poplar Lombardy	N									
Poplar White	N	F	M	-0 417	M	H	ac alk	FS	n/a	

City of Woodstock Tree Species List, as adapted from Athens Clarke County

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR DEVELOPMENT CODE: Square Feet of Canopy	Parking Lot Canopy Tree	Canopy Size Category	RECOMMENDED USES: Level of Use	Large Landscape Areas	Street	Road Frontages	Yard	Parking Lots	Plazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas	Utility Corridors
Poplar Yellow (Tuliptree)	*Liriodendron tulipifera*	1 600	2	Large	P	XX		x	x				XX	0
Redbud Eastern	*Cercis canadensis*	400		Small	P	XX	XX	XX			XX	XX	x	XX
Redbud Eastern White	*Cercis canadensis var alba*	400		Small	P	x	XX	XX			XX	x	x	XX
Redbud Forest Pansy	*Cercis canadensis* Forest Pansy'	400		Small	P	x	XX	XX			XX	x	x	XX
Redbud Oklahoma	*Cercis reniformis* Oklahoma	400		Small	P		XX	XX	x	x	XX			XX
Redbud 'Texas White	*Cercis reniformis* Texas White	400		Small	P		XX	XX	x	x	XX			XX
Redcedar Eastern	*Juniperus virginiana*	900		Medium	P	x		XX	x			XX	x	0
Redwood Dawn	*Metasequoia glyptostroboides*	900		Medium	P	x		XX	x			XX		
Royal Paulownia (Princess-Tree)	*Paulownia tomentosa*	900		Medium	L		0	x		0	0			0
Sassafras	*Sassafras albidum*	900		Medium	C	x		x				x	x	
Serviceberry Downy	*Amelanchier arborea*	400		Small	P	XX	XX	XX			XX	XX	x	x
Silverbell Carolina	*Halesia carolina*	900	2	Medium	P	XX	x	x	x				x	
Smoketree American	*Cotinus obovatus*	150		Very Small	L			x						x
Smoketree Common	*Cotinus coggygria*	150		Very Small	L			x						x
Sourwood	*Oxydendrum arboreum*	900	2	Medium	C	XX		x	x					
Sparkleberry Tree	*Vaccinium arboreum*	150		Very Small	C			x					x	x
Spruce Varieties	*Picea* species	900		Medium	N	not heat tolerant								
Sugarberry	*Celtis laevigata*	1 600		Large	C	x		x				0	x	
Sweetgum	*Liquidambar styraciflua*	1 600		Large	C	x	0	x		0	0		x	
Sweetgum Fruitless	*Liquidambar styraciflua* Rotundiloba	1 600	2	Large	P	x		x	x	x				
Sycamore	*Platanus occidentalis*	1 600	2	Large	P	x		x	x				x	0
Tallowtree Chinese	*Sapium sebiferum*	900		Medium	N	invasive								
Tree-of-Heaven (Ailanthus)	*Ailanthus altissima*	900		Medium	N	brittle wood weed tree								
Walnut, Black	*Juglans nigra*	1 600		Large	C	x	0	x		0	0		x	
Waxmyrtle Southern	*Myrica cerifera*	150		Very Small	P			x	x			x	0	x
Willow Black	*Salix nigra*	900		Medium	C	x	0			0	0		x	0
Willow Weeping	*Salix babylonica*	1 600		Large	L	x	0	x		0	0			0
Winterberry Common	*Ilex verticillata*	150		Very Small	P	x	x	x				x	x	x
Witchhazel Common	*Hamamelis virginiana*	400		Small	P	x		x			x		x	x
Yellowwood American	*Cladrastis kentukea*	900	2	Medium	L	x			x	x				
Zelkova Japanese	*Zelkova serrata*	1 600	1	Large	L			x	x	x			0	0

SPECIES COMMON NAME	PHYSICAL CHARACTERISTICS: Height Class in Urban Conditions	Crown Class in Urban Conditions	Mature Crown Form	Typical Range of Mature Tree Height	Typical Range of Mature Crown Width	Leaf Type	Leaf Texture	Fall Leaf Color	Flower Color	Flowering Time	Wildlife Value	Excessive Litter
Poplar Yellow (Tuliptree)	L	L	Oval	60 150	30 60	DB	C	YE	Y	Spring	X	
Redbud Eastern	S	S	Spreading	25-50	15 25	DB	M	YE	P	Spring	X	
Redbud Eastern White	S	S	Spreading	20 30	15 25	DB	M	YE	W	Spring	X	
Redbud Forest Pansy	S	S	Spreading	20 30	15 25	DB	M	YE	P	Spring	X	
Redbud Oklahoma	S	S	Rounded	20 25	15 20	DB	M	YE	P	Spring	X	
Redbud 'Texas White	S	S	Rounded	20 25	15 20	DB	M	YE	W	Spring	X	
Redcedar Eastern	M	M	Pyramidal	40-60	10 20	EC	F	EV	I		X	
Redwood Dawn	L	M	Pyramidal	75 100	25-30	DC	F	BR	I			
Royal Paulownia (Princess-Tree)	M	M	Irregular	30 50	20 50	DB	C	YE	P	Spring		X
Sassafras	M	M	Oval	30-60	20-40	DB	M	OR	Y	Spring	X	
Serviceberry Downy	S	S	Irregular	15-40	10 20	DB	M	OR	W	Spring	X	
Silverbell Carolina	M	M	Irregular	30-60	20 35	DB	M	YE	W	Spring		
Smoketree American	S	VS	Oval	15 30	10-25	DB	M	MU	P	Spring		
Smoketree Common	S	VS	Oval	10 15	10 15	DB	M	MU	P	Late Spring		
Sourwood	M	M	Spreading	30-60	20 30	DB	M	RE	W	Summer		
Sparkleberry Tree	S	VS	Irregular	10 20	5 10	DB	F	RE	W	Late Spring	X	
Spruce Varieties	L	M										
Sugarberry	L	L	Spreading	60 80	25 60	DB	F/M	YE	I		X	
Sweetgum	L	L	Oval	60 80	40 60	DB	M	MU	I		X	X
Sweetgum Fruitless	L	L	Oval	50 70	35-45	DB	C	MU	I			
Sycamore	L	L	Oval	70 100	30 70	DB	C	BR	I			X
Tallowtree Chinese	M	M										
Tree-of-Heaven (Ailanthus)	M	M										
Walnut, Black	L	L	Rounded	60 70	50 70	DB	M	YE	I		X	X
Waxmyrtle Southern	S	VS	Multi Stemmed	10 30	10 30	EB	F	EV	I		X	
Willow Black	M	M	Irregular	30-40	30-40	DB	F/M	YE	I			
Willow Weeping	L	L	Rounded	30 70	20-70	DB	F/M	YE	I			
Winterberry Common	S	VS	Multi Stemmed	5 15	5-10	DB	M	I	I		X	
Witchhazel Common	S	S	Spreading	20-35	20 35	DB	M/C	YE	Y	Fall		
Yellowwood American	M	M	Upright	30-50	40-50	DB	M/C	YE	W	Spring		
Zelkova Japanese	L	L	Upright	40-80	30 75	DB	M	RE	I			

SPECIES COMMON NAME	ENVIRONMENTAL CHARACTERISTICS AND TOLERANCES: Native Tree to metro Atl	Growth Rate	Average Life Span	Net Effect on Air Quality	Soil Moisture	Drought Tolerance	Preferred Soil pH	Light Requirement	Construction Tolerance/Limitations	Urban Tolerant Tree
Poplar Yellow (Tuliptree)	Y	M	L	0 171	M	L	sl ac	FS	P/IS	
Redbud Eastern	Y	F	S	0 012	M	M	ac sl ac	PS	M/S	
Redbud Eastern White	Y	F	S	n/a	M	M	ac sl ac	PS	n/a	
Redbud Forest Pansy	Y	F	S	n/a	M	L	ac sl ac	PS	n/a	
Redbud Oklahoma	N	M	S	n/a	D	H	ac-sl ac	FS	n/a	X
Redbud 'Texas White	N	M	S	n/a	D	H	ac-sl ac	FS	n/a	
Redcedar Eastern	Y	S	M	-0 010	M	H	ac nu	FS	M/IS	
Redwood Dawn	N	F	L	0 163	M	M	n/a	FS	n/a	X
Royal Paulownia (Princess-Tree)	N	F	S	0 022	M	M	ac sl alk	FS	g	
Sassafras	Y	M	M	0 069	M	H	sl ac	FS	G/	
Serviceberry Downy	Y	S	M	0 004	M	M	ac d c	PS	M/IS	
Silverbell Carolina	Y	M	M	n/a	M	L	ac sl alk	PS	M/ISC	
Smoketree American	Y	M	S	n/a	D	H	sl ac sl alk	PS	n/a	X
Smoketree Common	N	M	S	n/a	D	H	sl ac-sl alk	FS	n/a	X
Sourwood	Y	M	S	0 018	M	M	ac-sl ac	FS	P/A	
Sparkleberry Tree	Y	S	S	n/a	M	M	ac-sl alk	S	M/A	
Spruce Varieties	N									
Sugarberry	Y	M	M	0 118	M	M	ac	FS	G/I	
Sweetgum	Y	F	L	-0 488	M	L	sl ac	FS	G/	
Sweetgum Fruitless	Y	M	M	n/a	M	L	ac sl alk	FS	n/a	
Sycamore	Y	F	M	-0 789	M	M	sl ac sl alk	FS	G/	
Tallowtree Chinese	N									
Tree-of-Heaven (Ailanthus)	N									
Walnut, Black	Y	M	L	0 086	M	L	ac d c	FS	P/IS	
Waxmyrtle Southern	N	M	S	n/a	M	M	ac alk	FS	G/	
Willow Black	Y	F	S	0 177	W	L	n/a	FS	G/	
Willow Weeping	N	F	M	-0 096	W	M	ac d c	FS	mg	
Winterberry Common	Y	M	S	n/a	M	L	ac	FS	G/	
Witchhazel Common	Y	M	M	-0 009	M	M	sl ac	PS	M/IS	
Yellowwood American	N	M	M	0 013	M	M	n/a	PS	P/A	
Zelkova Japanese	N	M	M	0 084	M	H	ac sl alk	FS	n/a	X

1 = trees that will project significant shade intercept enough water substantially filter out pollutants and survive the conditions within a parking area to the extent they could be considered a canopy" tree
2 = same as 1 except that these trees are ONLY appropriate for large expanded tree islands or landscape strips swales or moist soil conditions with plenty of rooting space

Evergreen & Semi-evergreen Shrubs - Suggested List for Buffers

Additional shrubs allowed subject to approval from staff

Abelia	Rose Creek Abelia or similar
Cleyera	Cleyera japonica
Chinese Holly	Ilex cornuta Needlepoint or similar
Shamrock Holly	Ilex glabra Shamrock or similar
Dwarf yaupon Holly	Ilex vomitoria nana or similar
Anise	Illicium parviflorum
Loropetalum	Loropetalum chinensis - also includes dwarf varieties
Myrica cerifera	Wax myrtle
Emerald Arborvitae	Thuja occidentalis or similar shrub species
Viburnum	Viburnum obovatum Mrs Schillers delight or similar