City of Snellville

Gwinnett County
Atlanta MSA
2003 Population Estimate 17,961; +4.1% change from 2000 Census.
Tree City USA for 5 years.
No tree board designated by ordinance.

ARTICLE XX LANDSCAPE ORDINANCE and ARTICLE XXI TREE PRESERVATION ORDINANCE

Tree Preservation Ordinance first adopted 1990. Last revised 2005.
Addresses private property.
Includes landscape requirements.

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Snellville

ARTICLE XXI

TREE PRESERVATION ORDINANCE

SECTION 21.1 INTENT AND PURPOSE

A. INTENT: The intent of this ordinance is to provide standards for the preservation of trees as part of the land development and building construction process for the purpose of making the City of Snellville a more attractive place to live, provide a healthy living environment, and to better maintain control of flooding, noise, glare, and soil erosion.

B. PURPOSE:

1. The purpose of this ordinance is to facilitate the preservation and/or replacement of trees as part of the land development, building construction process within the City of Snellville.

2. Benefits derived from tree protection and replanting include:

(a) Improved control of soil erosion;

(b) Moderation of storm water runoff, and improved water quality;

(c) Interception of airborne particulate matter, and the reduction of some air pollutants.

(d) Enhanced habitat for desirable wildlife;

(e) Reduction of noise and glare;

(f) Climate moderation and the reduction of the heat island effect;

(g) Aesthetics, scenic amenity; ~~and~~

(h) ~~(h)~~ Increased property value; and

(i) Assistance in traffic calming.

SECTION 21.2 DEFINITIONS

All words used in this ordinance carry their customary dictionary meanings, except where specifically defined herein or in the Snellville Zoning Ordinance ~~of 1983~~ as amended.

Accessory structure: A structure, the use of which is customarily incidental and subordinate to that of the main building of the same lot, such as a guest house, toolshed,

woodshed and the like.

Accessory use: A use customarily incidental and subordinate to the primary use of the main building or to the primary use of the premises.

Buildable area: The portion of a lot which is not located within any minimum required yard, landscape area, or buffer, i.e., that portion of a lot wherein a building may be located.

Caliper: An 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- (4) inch caliper size, and twelve (12) inches above the ground for larger sizes.

Certified Arborist: An individual who has been certified as an arborist by the International Society of Arboriculture and maintains said certification in good standing.

City Arborist: The agent of the City of Snellville having primary enforcement responsibilities under this ordinance, and charged with the responsibility for approval of all landscape plans for land development in the City of Snellville required pursuant to this ordinance. The Zoning Enforcement officer or his designee shall be charged with the duties of City Arborist.

Critical Root Zone (CRZ): A circular region measured outward from a tree trunk representing the essential area of roots that must be maintained or protected for the tree's survival. The CRZ is one foot of radial distance for every inch of the tree's DBH, with a minimum of eight feet. ~~For specimen trees, the formula changes to 1.5 feet for every inch of the tree's DBH.~~

Crown Reduction Pruning: Method of pruning to reduce the height or spread of a tree by performing appropriate pruning cuts.

Diameter at breast height (DBH): A standard measure of tree size. The tree trunk diameter is measured in inches at a height of 4 1/2 feet above the ground. If a tree splits into multiple trunks below 4 1/2 feet, then the trunk is measured at its most narrow point beneath the split.

Detached: Shall be defined as being separated from a principle structure by a minimum of three (3) feet.

Hardwood Tree: A tree that does not bear either needles or cones. The term hardwood is based on the colloquialism and does not reflect any true qualities of the tree.

~~Land disturbance~~Development permit (development permit): A permit issued by the City of Snellville that authorizes the commencement of development on a given tract of land.

Landscape plan: A plan that identifies areas of tree preservation and methods of tree protection within the protected zone, as well as all areas or replanting. Within replanting areas, the common and botanical names of the proposed species, the number of plants of each species, the size of all plants, the proposed location of all plants, and any unique features of the plants shall be indicated.

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

Protected zone: All lands that fall outside of the buildable area of a parcel, all areas of the parcel required to remain in open space, and all areas required as landscaping strips according provisions of the City of Snellville zoning regulations, or conditions of the zoning approval.

Revegetation: The replacement of trees and landscape plant materials into the minimum required landscape areas, as determined by the Zoning Ordinance, conditions of zoning approval, or the Tree Preservation Ordinance.

Softwood Tree: Any coniferous (cone-bearing) tree. The term softwood is based on the colloquialism and does not reflect any true qualities of the tree.

Special tree: Any tree, which qualifies for special consideration for preservation due to its size, type, and condition as defined in this article.

Specimen tree: Any tree, which qualifies for special consideration for preservation due to its size, type, condition, location or historical significance as defined in this article. ~~See Appendix I-H.~~

Structure: Anything constructed, assembled, or erected, the use of which requires location on the ground or attachment to something having location on or in the ground.

Substantial Building Permit: A nonresidential building permit issued by the City of Snellville with a total value in excess of 50% of the Gwinnett County Tax Assessor's 100% ~~appraised~~assessed value of the existing improvements only. The aggregate value of all building permits issued to the property over the previous 12 months shall be included in this calculation (see Appendix I-D).

Tree: Any self supporting wood perennial plant which at maturity attains a trunk diameter of four (4) inches or more measured at a point four and one half (4 1/2) feet above the ground level and which normally attains a height of at least twenty five (25) feet at maturity, usually with one main stem or trunk and many branches.

Tree density factor: A unit of measure used to prescribe and calculate required tree coverage on a site. Unit measurements are based upon tree size. (Appendix I-A).

Tree Topping: The removal of tree limbs, branches, or stems by cutting at the internodes and resulting in the failure of the tree to assume apical dominance.

Understory Tree: Those trees that grow beneath the Overstory trees, and will generally reach a mature height of less than forty feet (40').

Zoning regulations: The Snellville Zoning Ordinance ~~of 1983~~ as amended or such other regulations subsequently adopted by the council, inclusive of conditions of zoning approval established pursuant thereto.

SECTION 21.3 APPLICABILITY The terms and provisions of this Ordinance shall apply to any activity on real property, which requires the issuance of a Development Permit or Substantial Building Permit within the City of Snellville. No Development Permit or Substantial Building Permit shall be issued by the city without it being determined that the proposed development is in conformance with the provisions of these regulations.

SECTION 21.4 PERMIT PROCEDURE

A. All applications for a ~~Land Disturbance~~Development Permit or a Substantial Building Permit shall include the following:

1. Tree Protection Plan: A tree protection plan shall be submitted with other permit drawings. This plan shall be a separate drawing, shall be prepared and sealed by a Registered Landscape Architect, Certified Arborist, or Registered~~Certified~~ Forester, and shall include the following information:

(a) Tree Survey: The Tree Survey shall be a to-scale map or site plan that has been prepared and sealed by a Registered Landscape Architect, Certified Arborist, Registered~~Certified~~ Forester, Registered Surveyor, or Registered Engineer. The Tree Survey shall include the following minimum requirements:

(1) All specimen trees are to be located and labeled with their size and species. Their Critical Root Zone (CRZ) shall be delineated and the spot elevation at the base of their trunk shall be indicated. They shall also be labeled in a way to determine if they are intended for removal or preservation.

(2) All trees with a dbh measurement of twelve inches (12") or larger shall be located and their size and species shall be indicated.

(3) Sampling methods may be used to determine tree density calculations for forested areas over five (5) acres.

(b) Definition of Spatial Limits.

(1) Limits of ~~land disturbance~~land disturbance, clearing, grading, and trenching;

(2) Tree protection zones;

(3) Areas of revegetation;

(4) Indication of staging areas for parking, material storage, concrete washout, debris burn, and other areas where tree protection may be affected.

(5) Locations of existing and proposed structures, paving, driveways, cut and fill areas, detention areas, utilities, etc.

(c) Detail drawings of tree protection measures (where applicable.)

(1) Protective tree fencing;

(2) Erosion control fencing;

(3) Tree protection signs;

(4) Transplanting specifications;

(5) Tree wells, and aeration systems;

(6) Staking specifications; and

(7) other applicable drawings.

(d) Tree Density Calculations

(e) Procedures and schedules of the implementation, installation, and maintenance of tree protection measures.

B. An on-site inspection will be made by the City Arborist prior to the commencement of any ~~land disturbance~~development activity.

C. All landscape plans, tree protection plans, and related documentation shall be reviewed by the City Arborist for conformance to the provisions of these regulations and either approved, returned for revisions, or denied within thirty (30) days of receipt. If denied, the reasons for denial shall be annotated on the landscape plan or otherwise stated in writing.

D. Issuance of the ~~Land Disturbance~~Development Permit or a Substantial Building Permit is contingent upon approval of the required Tree Protection Plan and Landscape Plan and an on-site inspection by the City Arborist for Tree Protection measures.

SECTION 21.5 REMOVAL OF TREES

A. Trees are not to be removed in any protected zone. When preserving trees in a protected zone will result in a documented economic hardship, an exception may be made. The documentation proving the hardship shall be submitted as part of the Tree Protection Plan. Nothing in these regulations shall be construed to allow the removal of vegetation in a natural, undisturbed buffer required by zoning regulations.

B. The removal of dead, diseased, insect-infested, or hazard trees is exempt from the provisions of this article provided the property owner can provide documentation of the condition of said trees. Documentation includes, but is not limited to, photographs or a report by a Certified Arborist and shall be submitted prior to removal.

B. When no trees are present in the protected zone or when it is proposed that any portion of the protected zone be disturbed, it shall be the responsibility of the owner/developer to landscape said areas (where improvements are not constructed), with trees or other plant materials subject to zoning regulations.

C. Trees shall not be removed from a floodplain except as follows:

~~a.~~1. Those trees found to be dead, diseased, or insect infested by the City Arborist, the County Extension Service, the Georgia Forestry Commission, or a ~~certified forester~~registered forester.

~~b.~~2. As necessary for construction, repair, or maintenance of public roads, utilities, or drainage structures.

D. A minimum of 25% of all hardwoods with a dbh of twelve inches (12") or larger shall be preserved. It is recommended to preserve a stand of hardwood trees to meet this requirement rather than preserving individual trees (unless they are specimen trees).

SECTION 21.6 TREE REPLACEMENT-REVEGETATION

A. The replacement of trees in the minimum required landscape areas, as determined by this ordinance, must occur under the following conditions.

1. To establish the minimum tree density requirements for the site.

2. Where grading occurs outside the buildable area of the lot.

3. If the buildable area of the lot leaves no protected zone.

4. If no trees are present within an existing protected zone.

5. Where specimen trees or specimen stands of trees within the buildable portion of the lot are to be removed.

6. Where specimen trees or specimen stands of trees, and trees within otherwise designated tree protective zones have been irreparably damaged or removed through ~~land disturbance~~development or construction activities.

B. The quantity of replacements trees into a site must be sufficient so as to produce a total site tree density factor of no less than 20 units per acre (Note: the terms unit and tree are NOT interchangeable). Procedures for determining the site density requirements and the subsequent tree replacement requirements are provided in Appendix I-A and incorporated by reference herein. A required buffer or trees located in the floodplain shall not be counted towards tree density.

C. The spacing of replacement trees must be compatible with spatial limitations, and within responsible considerations towards potential species size.

D. ~~All single family lots being developed as a subdivision in the City shall maintain a minimum tree density based upon the maximum number of trees that can be maintained within twenty percent (20%) of the lot's Plantable Area, taking into consideration the standards established in this Ordinance for tree size and separation. The density requirement must be met whether or not the individual lot had trees prior to development. (See Appendix I-G)~~The following number of trees shall be maintained and/or planted on all single-family residential lots developed in the City.

Lot Size	Number of Required Trees
< 8,000 square feet	1 tree
8,001 to 15,000 square feet	2 trees
15,001 to 20,000 square feet	3 trees
20,001 to 25,000 square feet	4 trees
25,001 to 30,000 square feet	5 trees
>30,000 square feet	1 tree per 5,000 square feet of lot size

~~1.~~1. Replanting lots shall be at the ratio of not less than one (1) overstory tree (minimum (2") caliper) for every ~~three (3)~~ one (1) understory trees (minimum of two inch (2") caliper). Lots less than 8,000 square feet are exempt from this requirement.

~~2.~~2. Notwithstanding the foregoing, it is required that all reasonable efforts be made to save Specimen Trees. (Reasonable effort shall include, but not be limited to, alternate building design, building location, parking area layout, parking area location, water retention location and the like.)

~~3.~~3. Tree Save Areas are encouraged and will be given credit of up to 50% individual lot requirements when the number of trees in the tree save areas is equal to or greater than the total number of trees required on the total number of lots within the subdivision.

E. Occasionally, this intent cannot be met because a project site will not bear the required density of trees. In this case, the City Arborist may approve a contribution to the City of Snellville Tree Replacement Fund. The following standards have been established for administering these contributions and fund.~~To provide some alternatives in such a case, two (2) alternative methods of compliance may, at the discretion of the City Arborist, be approved: for planting at a location remote from the project site; or contributing to the City of Snellville Tree Replacement Fund.~~

~~1.~~1. ~~The following standards have been established for administering these alternative compliance methods.~~ The City Arborist must review and approve all requests for alternative compliance. In no instance shall one hundred percent (100%) of the required site density be met through alternative compliance. As many trees as can reasonably be expected to survive must be planted on the site in question.

~~2.~~2. No permit shall be issued until the ~~City Arborist has approved the request and received the necessary documentation and/or funds~~ required contribution has been made to the Tree Replacement Fund. ~~If trees are to be planted at another location, the off-site location should be as close as reasonably possible in the City as the project site and a Tree Replacement Plan meeting all applicable standards must be reviewed and approved.~~

~~3.~~3. ~~If a replacement fee to the City of Snellville Tree Replacement Fund is approved, the amount of the donation shall be established by the City Arborist. The amount of the donation shall be based upon the number, size and type of trees that cannot be planted at the site. The City Arborist shall estimate the cost to the City for the materials and labor associated with the trees. The amount of the donation shall be one hundred percent (100%) of the estimated costs of the average of two (2) bids from reputable Landscape Contractors for the materials and planting trees on public property.~~ The amount of the contribution shall be determined from the Fee Schedule for the Planning and Development Department.

~~4.4. No Certificate of Occupancy will be issued until either trees have been planted on an alternate site or the donation to the Tree Replacement Fund has been received by the City Arborist.~~

~~4~~5. The City of Snellville Tree Replacement Fund shall be used for planting trees on public property. Funds may be used for the purchase of trees, installation of trees and irrigation, and the purchase of mulch and soil amendments for the planted areas.

F. Species selected for replacement must be quality specimens, and must be ecologically compatible with the specifically intended growing site. No more than 35% of any one species may be used. Evergreens may constitute no more than 25% of the

trees in non-buffer areas. Standards for transplanting, and selecting quality replacement stock shall be in accordance with standards of the International Society of Arboriculture, National Association of Arborists, American Standard for Nursery Stock, and Appendix I-B. Appendix I-E offers a list of trees generally acceptable for credit in the Tree Density Calculation.

G. Understory replacement trees may ~~not be used in density calculation~~account for no greater than 25% of the required tree density units. The City Arborist shall have the discretion to approve the additional use of understory trees for meeting density requirements on single family lots if the size and/or layout of the lot does not allow for large overstory trees.

H. Species selection and replacement densities are subject to approval by the City Arborist.

SECTION 21.7 SPECIMEN AND SPECIAL TREES

A. Some trees on a site warrant special consideration and encouragement for preservation. These trees are referred to as specimen or special trees. The following criteria are used by the City Arborist to identify specimen and special trees. Both the size and condition must be met for a tree to qualify.

Criteria	Special Trees	Specimen Trees
Minimum size for hardwoods	14" to 23" DBH	24" DBH
Minimum size for softwoods	20" to 29" DBH	30" DBH
Minimum size for understory trees	4" to 5" DBH	6" DBH
Minimum Life Expectancy	25 years	15 years

~~(1) Size Criteria~~

~~24" DBH or larger hardwoods such as oaks, hickories, poplars, sweetgums, etc.~~

~~30" DBH or larger softwoods, such as pines, cedars, etc.~~

~~6" DBH or larger understory trees, such as dogwoods, redbuds, etc.~~

~~(2)~~ Condition Criteria

~~Life expectancy of greater than fifteen (15) years.~~

Relatively sound and solid trunk with no extensive decay.

No more than one major and several minor dead limbs ~~(hardwoods only).~~

No major insect or pathological problems.

No major pruning deficiencies, i.e. topping

At least 75% of the Critical Root Zone in a natural, undisturbed state

B. In order to encourage the preservation of specimen and special trees and the incorporation of these trees into the design of projects, additional density credit will be given for specimen and special trees which are successfully saved and maintained. Credit for any specimen or special tree thus saved would be ~~two (2)~~ one and a half (1.5) times the assigned unit value shown in Appendix I-A. Should the property owner retain the services of a Certified Arborist to improve the quality of said trees (services include, but are not limited to, installation of cabling & bracing, installation of lightning protection, corrective pruning, removal of deadwood, supplemental irrigation, introduction of mycorrhizae, etc.), the density credit shall be increased to two (2) times the assigned value designated in Appendix I-A. The property owner must supply a letter of commitment from the Certified Arborist and/or provide documentation of services provided in order to receive the increased density credit.

The City Arborist may identify and require the preservation of a tree stand if it contains one or more specimen or special trees and the ~~specimen~~ trees are interlocked with other members of the stand in such a manner as to imperil the individual ~~specimen~~ tree if other members of the stand were to be removed.

C. No specimen tree may be removed without the prior written approval of the City Arborist.

(1) Specimen trees that are approved for removal must be replaced by species with potential for comparable size and quality. All specimen trees must be replaced with 3" caliper or larger trees at a density of one and a half (1.5) times the unit value of the tree removed, i.e. a 30"DBH specimen tree (4.9 density units) must be replaced with 7.35 units. Specimen tree replacement density is in addition to the minimum required density for the site.

(2) Any specimen tree, which is fatally damaged during construction, as determined by the City Arborist, or removed without the appropriate review and approval of the City Arborist, must be replaced with 4" caliper or larger trees with a total density equal to three (3) times the unit value of the tree removed. Size alone will determine whether a tree was of specimen quality if the tree is removed without approval. Additionally, the area that encompassed the Critical Root Zone of the specimen tree shall remain undisturbed to allow for the planting of replacement trees.

SECTION 21.8 TREE PROTECTION

A. The following minimum tree protection measures must be in place for all tree save areas:

(1) Trees identified for preservation shall have protection fencing that is a minimum of four (4) feet high installed at the edge of the critical root zones. The City Arborist shall have the discretion to require the installation of four (4) foot high minimum chain link fencing in those areas where the likelihood of possible encroachment occurs. --All tree protection zones shall be designated as such with signage posted visibly on all sides of the fenced area. Signs requesting workers' cooperation and compliance with tree protection standards are recommended at the site entrance(s).

(2) All tree protection zones shall be designed to prevent the sedimentation of erosion material. Silt fences must be placed along the outer uphill edges of tree protection zones at the ~~land disturbance~~development interface.

(3) No person shall encroach into the tree protection zones. Construction activities, including but not limited to, parking, vehicle and foot traffic, material storage, concrete washout, debris burning, and other activities shall be arranged so as to prevent disturbance within the protected areas.

(4) Reasonable efforts shall be made to locate utility lines along corridors between tree protection zones. If utility lines must encroach into the protection zones, they shall be installed by tunneling rather than trenching.

(5) All tree protection devices shall remain in fully functioning condition until the Certificate of Occupancy is issued.

(6) Any tree, designated for preservation, which is negligently damaged during construction or removed without the appropriate review and approval, as determined by the City Arborist, shall be treated according to the National Arborists Association Standards. If fatally damaged, the tree(s) shall be replaced with four (4) inch caliper trees equal to the unit value of the tree removed. Any specimen tree damaged as described above shall be replaced with trees equal to three (3) times the unit value of the tree removed.

(7) ~~It is recommended to apply a layer of mulch to the tree protection zones.~~All tree protection zones shall be mulched with at least four (4) inches and not more than eight (8) inches of organic mulch, such as pine straw, wood chips, tree leaves, or compost.

(8) There shall be no construction activity inside the tree save areas, including but not limited to, grading, paving, and construction of buildings and other structures.

(9) The site shall be designed and maintained in a manner to ensure proper

drainage in tree save areas during and after construction.

B. The developer shall designate a Tree Protection Supervisor. This person shall demonstrate knowledge in the area of tree protection practices during construction and shall be on site to ensure tree protection measures are enforced. The Tree Protection Supervisor shall participate in a Pre-Construction Conference with the City prior to the commencement of any ~~land disturbance~~development. The Tree Protection Supervisor must notify the City Arborist immediately should any tree damage occur on the site.

C. Tree Protection inspections shall be performed by a Certified Arborist or ~~Certified Forester~~Registered Forester during construction. The inspections shall be conducted prior to the commencement of ~~land disturbance~~development, immediately following the clearing and grubbing phase, immediately following the grading phase, and at the end of the project before a Certificate of Occupancy (commercial developments) is issued or the Final Plat approved (residential developments). The site shall be inspected to ensure all tree protection regulations are being met and to identify any existing or developing tree-related problems that require treatment. An inspection report shall be prepared and certified by the inspector and submitted to the City Arborist. Any damage noted shall be treated according to the recommendation of the inspector prior to the issuance of a Certificate of Occupancy or approval of the Final Plat. The City Arborist shall have the authority to require additional reports should he/she determine significant construction damage has occurred, the Tree Protection Supervisor has failed to enforce minimum protection standards, or if other development processes, including but not limited to utility placement and building construction, may impact the tree save areas.

SECTION 21.9 MAINTENANCE All maintenance activities performed on preserved or planted trees to be included in the tree density requirements shall be performed according to the most current professional standards, including, but not limited to, the standards described below. It shall be the responsibility of the property owner to ensure such work is in compliance. Should maintenance activities on said trees not be in compliance with such professional standards, the property owner will be responsible for replacing the damaged trees with new trees of an equivalent density value, based on the DBH at the time damage occurs.

A. Nursery Stock: All nursery stock shall meet standards defined in the *American Standard for Nursery Stock ANSI Z60.1.*
B. Pruning: All pruning shall be done in accordance with *ANSI A300 (Part 1) Standards for Tree Care Operations – Pruning*. Tree topping is not allowed. Crown reduction pruning shall be used instead to reduce the height of a tree when necessary. Topped trees shall not be counted toward tree density requirements.
C. Fertilization: All tree fertilization shall be performed in accordance with *ANSI A 300 (Part 2) Standards for Tree Care Operations – Fertilization.*
D. Cabling and Bracing: All cabling and bracing installation and maintenance shall be performed in accordance with *ANSI A300 (Part 3) Standards for Tree Care Operations – Cabling and Bracing.*
E. Lightning Protection: All lightning protection installation and maintenance shall

be performed in accordance with *ANSI A300 (Part 4) Standards for Tree Care Operatioins – Lightning Protection.*

F. Saftey: All tree-related work shall be performed in accordance with *ANSI Z133.1 Standards for Tree Care Operations – Safe Work Practices.*

SECTION 21.10~~9~~ ENFORCEMENT It shall be the duty of the City Arborist to enforce this Ordinance. The City Arborist shall have the authority to revoke, suspend, or void any ~~Land Disturbance~~Development-p~~P~~ermit and shall have the authority to suspend all work on a site or any portion thereof. The City Arborist shall have the authority to approve alternate methods of compliance with the provisions of this article when he/she determines the overall intent of the article and/or specific guidelines can be met.

SECTION 21.11~~0~~ VIOLATION AND PENALTY Any person, firm, or corporation violating any of the provisions of this Ordinance shall be deemed guilty of a misdemeanor. Each day's continuance of a violation shall be considered a separate offense. The owner of any property wherein a violation exist, and any builder, contractor, agent who may have assisted in the commission of any such violation, shall be guilty of a separate offense. The Snellville Municipal Court shall have jurisdiction to try offenses to these regulations.

SECTION 21.12~~1~~ APPEAL Any person aggrieved or affected by any decision of the City Arborist relating to the application of this ordinance may appeal to the Zoning Board of Appeals for relief or reconsideration within thirty (30) days from the date of the adverse determination by the City Arborist.

SECTION 21.13~~2~~ EFFECTIVE DATE This ordinance shall become effective upon approval by the Snellville City Council.

SECTION 21.14~~3~~ VALIDITY Should any section or 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.

SECTION 21.154 CONFLICTING RESOLUTIONS REPEALED the provisions of any ordinance or parts of ordinance in conflict herewith are repealed.

Section 21.2 Definitions amended 6/21/99.
Section 21.3 Applicability amended 6/21/99.
Section 21.6 Tree Replacement-Revegetation amended 6/21/99.
Appendix I-E amended 6/21/99 and Appendix I-G, and I-H added 6/21/99.
Article XXI amended 3/26/01
ARTICLE XXI DELETED AND REPLACED TO ADOPT AMENDMENTS – 11/26/01.

APPENDIX XXI-A PROCEDURE FOR CALCULATING THE REQUIRED TREE REPLACEMENT DENSITY FACTOR.

The following abbreviations are used below:

TDF-Tree Density Factor
RTF-Remaining Tree Factor
RRD-Required Replacement Density

Step 1. Calculate the tree density factor (TDF) for the site multiplying the number of site acres by 20.

EXAMPLE: A 2.2 acre site has a TDF OF 2.2 x 20 = 44.

Step 2. Calculate the existing trees, which will remain, or the Remaining Tree Factor (RTF). These will remain on site and be protected during construction. The RTF is determined by converting the DBH of individual existing trees to density factor units, using Table 1. These units are then totaled to determine the RTF for the site.

EXAMPLE: A total of 15 trees will remain on the 2.2 acres site in Step 1. These trees include:

7 - 12" pines
3 - 14" pines
3 - 18" oaks
1 - 20" hickory
1 30" oak

When converted to density factor units using Step 1, we arrive at the following values:

DBH	UNITS		QUANTITY		# TREES
12"	.8	x	7	=	5.6
14"	1.1	x	3	=	3.3
18"	1.8	x	3	=	5.4
20"	2.2	x	1	=	2.2
30"	4.9	x	1	=	4.9
			RTF	=	21.4

The sum total of units, 21.4, is the RTF.

Step 3. Calculate the required replacement density (RRD) by subtracting the RTF (Step 2) from the TDF (Step 1).

RRD = TDF - RTF

EXAMPLE: RRD = 44 - 21.4
RRD = 22.6

Step 4. The RRD can be converted back to caliper inches using Table 3. Any number or combination of transplantable size trees can be used so long as their total density factor units will equal or exceed the RRD.

EXAMPLE: On the 2.2-acre site the following number and size of trees will be planted:

Number	Size	Species	Density Factor
15	6'~~7 gallon~~	Pines	(12 x .4) = 6.0
20	2"	Red Maples	(20 x .5) = 10.0
7	6"	Oaks	(7 x 1.0) = 7.0
			23.0

23.0 is greater than the RRD of 22.6 thus the minimum requirements (Section 21.6B) have been met.

TABLE 1. SAMPLE TREE DENSITY CALCULATION

Required TDF
2.2 acres x 20 units/acre = 44 units required

RTF (Remaining Tree Factor)

SIZE	UNITS	NUMBER	TOTAL UNITS
24"	3.1	2	6.2
18"	1.8	10	18.0
10"	0.6	8	4.8
		TOTAL RTF	29.0

RRD (Required Replacement Density)

SIZE	UNITS	NUMBER	TOTAL UNITS
2"-3"	.5	10	5.0
1"	.4	100	40.0
		TOTAL RRD	45.0

RTF + RRD > or = TDF
29 + 45.0 = 74.0 > or = 44, therefore Tree DENSITY SATISFIED

TABLE 2. EXISTING TREES TO REMAIN. Conversion from DBH to density factor units for RTF, or Remaining Tree Factor.

DBH	UNITS	DBH	UNITS	DBH	UNITS
1-4	0.1	22	2.6	37	7.5
5-7	0.3	23	2.9	38	7.9
8-9	0.5	24	3.1	39	8.3
10	0.6	25	3.4	40	8.7
11	0.7	26	3.7	41	9.2
12	0.8	27	4	42	9.6
13	0.9	28	4.3	43	10.1
14	1.1	29	4.6	44	10.6
15	1.2	30	4.9	45	11
16	1.4	31	5.2	46	11.5
17	1.6	32	5.6	47	12
18	1.8	33	5.9	48	12.6
19	2	34	6.3	49	13.1
20	2.2	35	6.7	50.	13.6
21	2.4	36	7.1		

TABLE 3. REPLACEMENT TREES. Conversion from caliper to density factor units for replacement trees. (1,2)

~~Caliper~~	~~Units~~	~~Caliper~~	~~Units~~
~~1~~	~~0.0~~	~~8.~~	~~1.3~~
~~2~~	~~0.5~~	~~9~~	~~1.5~~
~~3~~	~~0.6~~	~~10~~	~~1.7~~
~~4~~	~~0.7~~	~~11~~	~~1.9~~
~~5~~	~~0.9~~	~~12~~	~~2.1~~
~~6~~	~~1.0~~	~~13~~	~~2.3~~
~~7~~	~~1.2~~	~~14~~	~~2.5~~

~~1. Evergreen trees shall be a minimum 7 gallon and shall be equal to 0.4 units.~~

Caliper: Single-Stem Deciduous Trees	Density Units
2"	0.5
3"	0.6
4"	0.7
5"	0.9
6"	1.0

Height: Multi-Stem Deciduous Trees	Density Units
12' to 14'	0.5
14' to 16'	0.6
16' to 18'	0.7
18' to 20'	0.9

Height: Evergreen Trees	Density Units
6' to 8'	0.4
8' to 10'	0.5
10' to 12'	0.6
12' or greater	0.7

2. Tree relocation: Replacement units will be granted to trees relocated on site. Tree relocation is subject to City Arborist and/or Zoning Enforcement officer approval.

APPENDIX XXI-B STANDARDS FOR SELECTING QUALITY REPLACEMENT STOCK

1. Trees selected for planting must meet minimum requirements as provided below and in the American Standard of Nursery Stock.

(a). Trees selected for planting must be free from injury, pests, disease, or nutritional disorders.

(b). Trees selected for planting must be of good vigor. The determination of vigor is a subjective evaluation, and dependent upon species variability. The following criteria is generally used for the determination of vigor:

(1) Foliage should have a green or dark green color. Vigorous trees will have large leaves and dense foliage when compared to trees with poor vigor.

(2) Shoot growth for most vigorous trees will be at least 1 foot per year. At least 1/2 of the branches should arise from the top 1/3 and 1/2 from the center 1/3.

(3) Bark texture can denote vigor. Smooth or shiny bark on the trunk and branches of a young tree usually signifies good vigor, conversely, rough and full bark could indicate poor vigor.

(4) Trunk taper. The trunks of vigorous trees will generally have an increase in diameter with a decrease in height. Trees with reverse tapers or no taper should be avoided.

(5) Root color. Young roots of most trees will be light in color.

(6) Trees selected for planting must be free of root defects. Two types of root defects generally occur:

(a) Kinked roots, in which taproots, major branch roots, or both are bent more than 90 degrees with less than 20 percent of the root system originating above the kink. A tree with such roots will probably bend at the soil line when released from a supporting stake.

(b) Circling or girdling roots which circle 80 percent or more of the root system by 360 degrees or more. A tree with such roots would ultimately have less than 20 percent of its system available for support.

APPENDIX XXI-C TRANSPLANTING STANDARDS

1. The transplanting of new trees can result in major injury to their root system. If proper transplanting techniques are employed, conditions will be more favorable for tree recovery, and the rate of attrition for newly planted trees will be reduced.

2. Transplanting procedures shall follow standards established by the International Society of Arboriculture in the "Trees and Shrub Transplanting Manual", and the booklet by the Georgia Extension Service entitled "Plant Trees Right!" The following is a summary several of the more important considerations provided in the manual and booklet.

(a) Preplanting considerations.

(1) Only healthy trees with a well-developed root system and a well-formed top, characteristic of the species should be planted.

(2) Trees selected for planting must be compatible with the specific site conditions.

(3) The ability of a species to regenerate a new root system and to become reestablished should be considered. Generally, deciduous trees should be planted in the fall after leaf drop, or in early spring before bud break. There are indications that bare root trees will re-establish more readily if planted in early spring just prior to bud break.

(b) Planting procedures

(1) Planting holes should be at least three times the diameter of the root ball.

(2) Trees should not be planted deeper than they were in their former location or container.

(3) Spade compacted bottom and sides of the planting hole should be roughed or scarified to allow the penetration of developing roots.

(4) Good water drainage from the bottom of the planting hole is essential for root regeneration.

(5) Once the transplanted tree is set, the hole should be backfilled with soil of good texture and structure. Traditionally, backfill material is comprised of a mix of negative soil, organic matter such as peat, and inorganic material such as perlite or vermiculite in a 1:1:1 ration. There are indications that a backfill with native soil alone may be adequate.

(6) The addition of fertilizer to backfill soil can cause root injury, and is therefore not recommended. If fertilizer must be added, a low rate should be used. Approximately 1.5 pounds of nitrogen per cubic yard of backfill is recommended for bare root plants, and 2.5 pounds of nitrogen per cubic yard of backfill for balled and burlapped trees.

(7) The backfill should be gently tamped (but not compacted), and soaked for settling.

(8) The soil should be slightly mounded to allow for settling; a ridge or dike around the perimeter of the hole can facilitate watering.

APPENDIX XXI-D SUBSTANTIAL BUILDING PERMIT

A. Example one

1. The 100 percent ~~appraised~~assessed value of the improvements of a 10,000 square foot shopping center is assessed by Gwinnett County at $250,000.

2. In January the owner is issued a permit in the amount of $25,000 to replace heating and air conditioning equipment. Three months later he is issued a permit in the amount of $50,000 to replace the roof covering and add a false mansard roof.

3. Does this equate to a Substantial Building Permit?
$25,000 + $50,000 = $75,000 (building permits 12 months)

$75,000 / $250,000 = 30.00% < 50.00%
This case is not a substantial building permit.

B. Example two

1. The 100 percent ~~appraised~~assessed value of the improvements of a 10,000 square feet shopping center is assessed by Gwinnett County at $250,000.

2. The owner decides to build phase two of the shopping center, which includes an additional 6,000 square feet of space. The low bid on the job is $200,000.

3. Does this equate to a Substantial Building Permit?
$200,000 / $250,000 = 80.00% > 50.00%
Yes, this is a substantial building permit.

C. Example three

1. A site is cleared and graded for a gas station but not developed therefore the counties ~~appraised~~assessed value of the improvements is $0.

2. Two years later the owner applies for a building permit in the amount of $500,000 for the construction of a gas station.

3. Does this equate to a Substantial Building Permit?
Yes, because the permit exceeds half of the value of the improvements. In this case the formula used in examples one and two are not appropriate because zero can not be used as a denominator but obviously the value of the permit exceeds half of the improvement value.

APPENDIX XXI-E TREE LIST – See Pages "XXI-E"-1 – 4.

APPENDIX XXI-F PLANTING STANDARD

A. The best way to plant (see diagram attached).

1. After selecting a suitable location, mark out a planting area that is five times the diameter of the planting ball. Use a rototiller or shovel to loosen and mix the soil in this entire area to a depth of about 12 inches.

2. In the center of the prepared area, dig a shallow hole to set the tree or shrub. The hold should allow the root ball to sit on solid ground rather than loose soil. Once the ball is set the hole, its upper surface should be level with the existing soil.

3. After the tree is properly situated, cut and remove the rope or wires holding the

burlap in place and securing any part of the tree.

4. Backfill around the root area, and gently firm the soil to prevent major air pockets. Do not pack the soil. Water can be used to help the soil settle and prevent overpacking. Rake the soil even over the entire area, and cover it with two to four inches of mulch. Maintaining the mulch layer carefully will improve tree growth substantially.

5. Water berms or dikes are not recommended as they encourage abnormal root growth.

6. It is best not to stake the tree, but if wind is a problem or the tree starts to lean, support it with a flexible stake so the trunk will sway in the wind. The movement is necessary for building the trunk's strength. Remove the stake and wire after one growing season since leaving wire or string around the tree can cause death.

7. Do not wrap the trunk with "protective" tape. It will slow the tree's ability to adapt to the site and provide a home for insects. Tree barks needs air and sunlight in order to build a healthy protective sheath.

~~APPENDIX XXI-G~~

~~EXAMPLES OF SINGLE FAMILY LOT~~
~~TREE PLANTING REQUIREMENTS~~

~~Lot Size -Minus Impervious Surface xTimes 20% =Equals Plantable Area~~

~~15,000 sq.ft. 2,740 sq.ft (12, 260 sq.ft.) 12,260 x 20% 2.452 sq.ft. (RS-150) (1700 sq.ft. home~~
~~1120 sq.ft. drive & turn-around~~
~~120 sq.ft. patio)~~
~~12,260 sq.ft. pervious surface~~

~~Tree Computation~~

~~7 Overstory Trees (existing trees) x 200 square feet of plantable area = 1400 sq.ft.~~
~~14 Understory Trees (new trees) x 75 square feet of plantable area = 1050 sq.ft.~~
~~2450 sq.ft.~~

~~Lot Computation~~

~~18,000 sq.ft. 3,004 sq.ft. impervious = 14, 996 sq.ft. x 20% = 2,999 sq.ft. plantable area~~
~~(RS-180)~~

~~Tree Computation~~

~~7 Overstory Trees x 200 sq.ft. = 1400 sq.ft. of plantable area~~
~~21 Understory Trees x 75 sq.ft. =1575 sq.ft. of plantable area~~
~~2975 sq.ft. or plantable area~~

City of Snellville - Appendix XXI-E
Acceptable Trees for Tree Density Requirements & Buffer Plantings

Species Common Name	Latin Name	Size	Crown Shape	Maximum Height (ft)	Typical Spread (ft)	Growth Rate	Leaf Texture	Leaf Type	Recommendation	Drought Tolerance	Urban Tolerance	Construction Tolerance	Light Requirement	Soil Moisture	Wildlife Value	Native Tree	Life Span
Alder, Hazel	Alnus serrulata	U	S	10-20	10-20	M	M	D	R	M	X	G	F	W		X	S
Ash, Green	Fraxinus pennsylvanica	O	R	60-100	40-50	F	M	D	A	H		G	F	W	X	X	M
Ash, White	Fraxinus americana	O	R	60-100	40-50	F	M	D	A	L		M	F	M	X	X	M
Baldcypress	Taxodium distichum	O	P	50-100	20-50	F	F	D	P	H	X	G	F	M	X		L
Basswood, American	Tilia americana	U	I	20-40	15-30	M	C	D	R	L		P	P	M	X	X	M
Beech, American	Fagus grandifolia	O	R	80-100	50-70	S	M	D	P	L		P	F	M	X	X	L
Birch, River	Betula nigra	O	I	50-90	40-60	F	F/M	D	P	L		G	P	M		X	M
Blackgum	Nyssa sylvatica	O	P	50-100	20-30	M	M	D	P	M	X	G	F	M	X	X	M
Buckeye, Bottlebrush	Aesculus parviflora	U	S	10-15	10-15	S	M	D	R	L			S	M	X		S
Buckeye, Red	Aesculus pavia	U	R	20-25	10-20	M	M	D	R	L		M	P	M	X		S
Carolina Buckthorn	Rhamnus caroliniana	U	R	30-40	10-30	M	M	D	R	M		M	F	M	X	X	S
Cedar, Atlantic White	Chamaecyparis thyoides	O	P	50-80	10-30	S	F	CE	P	H			F	M			M
Cedar, Deodar	Cedrus deodora	O	P	40-60	30-50	S	F	CE	A	H		G	F	D			L
Chaste Tree (Vitex)	Vitex agnus-castus	U	S	15-20	10-15	M	F	D	R	H	X		F	D			S
Cherry, Carolina Laurel	Prunus caroliniana	U	O	20-40	15-20	M	M	BE	A	H	X	G	F	M	X		M
Cherry, Okame	Prunus campanulata x incisa	U	R	20-25	20-25	M	M	D	R	L			F	M	X		S
Cherry, Weeping	Prunus subhirtella	U	W	15-20	15-20	S	M	D	A	L			F	M	X		S
Cherry, Yoshino	Prune x yeodensis	U	S	25-35	25-35	M	M	D	R	L			F	M	X		S
Common Buttonbush	Cephalanthus occidentalis	U	R	20-30	20-30	M	M	D	R	L		G	F	W	X	X	S
Crabapple, Japanese	Malus floribunda	U	S	15-25	15-25	M	M	D	A	L			F	M	X		S
Crabapple, Southern	Malus angustifolia	U	O	20-25	10-15	M	M	D	R	L		M	F	M	X	X	S
Cryptomeria, Japanese	Cryptomeria japonica	O	P	50-60	20-30	M	F	CE	R	M		G	F	M			M
Cypress, Leyland	Cupressocyparis leylandii	O	P	60-70	15-20	F	F	CE	A	M		G	F	M			M
Dogwood, Flowering	Cornus florida	U	S	15-30	15-30	M	M	D	R	L		M	P	M	X	X	M

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Dogwood, Kousa	Cornus kousa	U	R	15-25	15-25	S	M	D	R	L			P	M	X		S
Downy Serviceberry	Amelanchier arborea	U	I	15-40	10-15	M	M	D	R	M		M	P	M	X	X	M
Elm, Lacebark (Chinese)	Ulmus parvifolia	O	U	40-50	40-50	M	F/M	D	P	H	X		F	M			M
Elm, Winged	Ulmus alata	O	U	70-80	30-50	M	F	D	A	H	X	G	F	M	X		M
Fringe Tree	Chionanthus virginicus	U	O	10-30	5-15	M	C	D	R	L		M	P	M	X		S
Fringe Tree, Chinese	Chionanthus retusus	U	R	15-25	15-25	M	M	D	A	M			P	M	X		S
Fruit Tree, Flowering	Prunus or Malus spp.	U	S	15-30	15-30	M	M	D	A	M			F	M	X	X	M
Gingko (Male)	Gingko biloba	O	I	50-70	30-40	S	C	D	P	H	X	G	F	M			L
Golden Raintree	Koelreuteria paniculata	U	R	20-30	10-15	M	M	D	R	H			F	M			M
Golden Raintree, Bougainvillea	Koelreuteria bipinnata	U	S	20-30	15-20	M	M	D	A	H			F	M			M
Hackberry	Celtis occidentalis	O	S	60-90	25-35	M	M	D	A	H	X		F	D	X	X	M
Hackberry, Georgia	Celtis tenuifolia	O	S	60-90	25-35	M	M	D	A	H		M	F	M	X	X	M
Hawthorne	Crataegus spp.	U	R	10-20	5-15	S	F	D	A	M		G	F	M	X		S
Hickory Variety	Carya spp.	O	O	60-80	40-60	M	M	D	R	H		M	F	M	X	X	L
Holly, American	Ilex opaca	O	P	20-70	15-20	M	M	BE	P	H	X	G	P	M	X	X	L
Holly, Ornamental Varieties	Ilex spp.	U	P	15-30	15-30	S	M	BE	P	H			F	M			S
Holly, Yaupon	Ilex vomitoria	U	P	10-25	8-10	S	F	BE	R	H	X	G	F	D	X	X	S
Hophornbeam, Eastern	Ostrya virginiana	U	I	25-40	15-25	S	F/M	D	R	H	X	M	S	M	X	X	M
Hornbeam, American	Carpinus caroliniana	U	I	20-35	15-25	S	F/M	D	R	M		M	P	M	X	X	M
Hornbeam, European	Carpinus betulus 'Fastigiata'	U	U	30-40	20-30	S	M	D	A	H	X		P	M	X		M
Hornbeam, Japanese	Carpinus japonica	U	S	15-20	15-20	M	M	D	A	M			P	M			M
Katsuratree	Cercidiphyllum japonica	O	R	40-60	20-30	F	M	D	R	L		P	F	M			L
London Plane Tree	Platanus acerifolia	O	I	60-100	20-40	M	C	D	A	H	X	P	F	M			M
Magnolia, Cucumbertree	Magnolia acuminata	O	O	60-80	20-40	F	C	D	R	L		M	F	M	X	X	M

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Magnolia, Japanese	Magnolia soulangeana	U	S	20-30	10-25	M	C	D	A	L			F	M			S
Magnolia, Southern	Magnolia grandiflora	O	P	80-100	30-50	S	C	BE	R	M		M	P	M	X	X	L
Magnolia, Star	Magnolia stellata	U	O	15-20	10-15	S	M	D	A	M			F	M	X		S
Magnolia, Sweetbay	Magnolia virginiana	O	R	30-60	20-40	M	C	BE	R	L		G	P	W	X	X	M
Maple, Amur	Acer ginnala	U	S	15-20	15-20	M	M	D	A	M			F	M			M
Maple, Chalk	Acer leucoderme	U	O	25-30	25-30	S	M	D	R	H	X	P	F	M		X	M
Maple, Hedge	Acer campestre	U	R	25-35	25-35	S	M	D	A	H	X		F	M			S
Maple, Japanese	Acer palmatum	U	R	15-20	10-15	S	F	D	R	L			P	M			S
Maple, Red	Acer rubrum	O	R	40-90	20-35	M	M	D	P	L		G	F	M	X	X	L
Maple, Southern Sugar	Acer barbatum	O	R	40-60	25-60	S	M	D	P	H	X	M	F	M		X	M
Maple, Sugar	Acer saccharum	O	R	60-80	30-50	M	M	D	P	M		P	P	M	X	X	L
Maple, Trident	Acer buergeranum	U	R	20-30	20-30	M	M	D	R	M	X	G	F	M			M
Oak, Chestnut	Quercus prinus	O	R	50-80	30-50	M	M	D	P	H			F	D	X	X	L
Oak, Georgia	Quercus georgiana	U	R	30-40	30-40	S	M	D	R	H			F	D	X	X	M
Oak, Laurel	Quercus laurifolia	O	R	60-80	40-60	M	M	D	A	H			F	D	X		M
Oak, Laurel 'Darlington'	Quercus hemisphaerica 'Darlington'	O	R	60-90	50-60	F	F	D	R	H	X		F	D	X		M
Oak, Northern Red	Quercus rubra	O	R	60-100	30-50	M	M	D	R	M		G	F	M	X	X	L
Oak, Nuttall	Quercus nuttallii	O	R	50-60	50-60	M	M	D	R	M			F	M	X	X	L
Oak, Pin	Quercus palustris	O	P	40-100	20-50	M	M	D	R	M		M	F	M	X		M
Oak, Sawtooth	Quercus acutissima	O	P	50-60	30-60	F	M	D	R	M			F	M	X		M
Oak, Scarlet	Quercus coccinea	O	R	50-80	30-50	M	M	D	P	H		G	F	D	X	X	L
Oak, Shumard	Quercus shumardii	O	R	60-100	30-70	M	M	D	P	H		G	F	M	X	X	L
Oak, Southern Red	Quercus falcata	O	R	60-100	30-70	M	M	D	P	H		G	F	M	X	X	L
Oak, Swamp Chestnut	Quercus michauxii	O	O	70-90	30-40	M	M	D	P	H		G	F	M	X	X	L

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Acceptable Trees for Tree Density Requirements & Buffer Plantings

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Oak, White	Quercus alba	O	R	60-100	30-60	S	M	D	P	M		G	F	M	X	X	L
Oak, Willow	Quercus phellos	O	P	40-100	30-60	F	F/M	D	P	H	X	G	F	M	X	X	L
Pecan	Carya illinoensis	O	O	60-100	30-40	S	M	D	A	L		M	F	M	X		M
Persimmon, Common	Diospyros virginiana	O	O	35-60	20-35	M	M	D	A	H	X	G	F	M	X	X	S
Pine, Loblolly	Pinus taeda	O	P	80-100	20-40	M	F	CE	A	M		G	F	M	X	X	M
Pine, Virginia	Pinus virginiana	O	P	15-70	10-30	M	F	CE	A	H	X	G	F	M	X	X	S
Pistache, Chinese	Pistacia chinensis	U	S	30-35	25-35	M	M	D	P	H	X		F	M	X		M
Plum, Chickasaw	Prunus angustifolia	U	R	10-20	10-15	M	F	D	A	H		M	F	M	X	X	S
Plum, Purpleleaf	Prunus cerasifera	U	S	15-30	15-25	M	M	D	A	M		M	F	M	X		S
Poplar, Yellow or Tulip	Liriodendron tulipifera	O	U	80-150	30-60	F	C	D	R	L		P	F	M	X	X	L
Redbud, Eastern	Cercis canadensis	U	S	25-50	15-20	M	M	D	R	M		M	P	M	X	X	S
Redbud	Cercis reniformis	U	R	15-20	15-20	M	M	D	P	H	X	M	F	D	X		S
Redcedar, Eastern	Juniperus virginiana	O	U	40-60	10-20	M	F	CE	A	H			F	M	X	X	M
Redwood, Dawn	Metasequoia glyptostroboides	O	P	70-100	25-30	F	F	CE	R	M	X		F	M			L
Sassafras	Sassafras albidum	O	O	30-50	20-30	M	M	D	R	H		G	F	M	X	X	M
Silverbell, Carolina	Halesia carolina	O	O	30-40	20-25	M	M	D	A	L		M	P	M		X	M
Smoketree, American	Cotinus obovatus	U	R	15-20	15-20	S	M	D	R	H	X		P	D		X	S
Smoketree, Common	Cotinus coggygria	U	R	10-15	10-15	M	M	D	A	H	X		F	D			S
Sourwood	Oxydendrum arboreum	O	S	30-50	20-30	M	M	D	R	M		P	F	M		X	S
Sugarberry	Celtis laevigata	O	S	60-80	25-30	M	F/M	D	A	M		G	F	M	X	X	M
Sweetgum, Fruitless	Liquidambar styraciflua 'Rotundiloba'	O	P	60-100	40-70	F	M	D	A	L			F	M		X	M
Sycamore	Platanus occidentalis	O	O	70-100	30-50	F	C	D	A	M		G	F	M		X	M
Waxmyrtle, Southern	Myrica cerifera	U	S	10-30	10-30	M	F	BE	R	M		G	F	M	X		S
Winterberry, Common	Ilex verticillata	U	S	5-10	5-10	S	M	D	R	L		G	F	M	X	X	S

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Acceptable Trees for Tree Density Requirements & Buffer Plantings

Species Common Name	Latin Name	Size	Crown Shape	Maximum Height (ft)	Typical Spread (ft)	Growth Rate	Leaf Texture	Leaf Type	Recommendation	Drought Tolerance	Urban Tolerance	Construction Tolerance	Light Requirement	Soil Moisture	Wildlife Value	Native Tree	Life Span
Witch Hazel	Hamamelis virginiana	U	S	20-35	20-35	M	M	D	R	M		M	P	M		X	M
Yellowwood, American	Cladrastis kentukea	O	I	30-50	40-50	M	M	D	A	M		P	P	M			M
Zelkova, Japanese	Zelkova serrulata	O	U	50-80	50-80	M	M	D	R	H	X		F	M			M

Size: U = Understory Tree; O = Overstory Tree

Crown Shape: I = Irregular; O = Oval; P = Pyramidal; R = Rounded; S = Spreading; U = Upright; W = Weeping

Growth Rate: S = Slow (0.5 to 1.5 feet/year); M = Moderate (1.5 to 2.5 feet/year); F = Fast (2.5 to 3+ feet/year)

Leaf Texture: F = Fine; M = Medium; C = Coarse

Leaf Type: D = Deciduous; BE = Broad-Leaved Evergreen; CE = Coniferous Evergreen

Recommendation: A = Acceptable; R = Recommended; P = Preferred

Drought Tolerance: L = Low (not tolerant of drought conditions); M = Moderate (tolerant of mild trought conditions or moderately tolerant of severe drought conditions); H = High (very tolerant of mild to severe and prolonged drought conditions)

Urban Tolerance: An 'X' indicates this species is suitable for planting in tough urban conditions.

Construction Tolerance: P = Poor; M = Moderate; G = Good

Light Requirement: S = Shade; P = Partial Sun; F = Full Sun

Soil Moisture: D = Dry and very well-drained; M = Moist but moderately well- to well-drained; W = Wet and may be occasionally flooded for short periods.

ARTICLE XX

LANDSCAPE ORDINANCE

SECTION 20.1 INTENT AND PURPOSE

A. INTENT: To provide minimum landscape standards for ~~commercial~~ developments in the city so as to enhance architectural features, strengthen vistas and provide shade.

B. PURPOSE:

1. To preserve landscaping in its natural state to the greatest extent possible.

2. To promote architectural harmony between buildings, landscaping and the local environs.

3. To enhance economic opportunities over the long term by maintaining Snellville as an attractive and progressive community for residents, businesses and developers.

4. To minimize the adverse impacts of new development on existing land uses.

5. To promote xeriscaping, or water-saving techniques where practical.

6. To provide environmental benefits such as pollution abatement, erosion and run-off control, energy conservation, minimization of flood hazards and continued maintenance of ecology systems

SECTION 20.2 DEFINITIONS

All words used in this ordinance carry their customary dictionary meanings, except where specifically defined herein or in the Snellville Zoning Ordinance ~~of 1983~~ as amended.

Buildable area: The portion of a lot which is not located within any minimum required yard, landscape area, or buffer, i.e., that portion of a lot wherein a building may be located.

Caliper: An 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-(4) inch caliper size, and twelve (12) inches above the ground for larger sizes.

Certificate of occupancy: A permit issued by the Building Inspector indicating that the use of the building or land in question is in conformity with all relevant City of Snellville ordinances, or that there has been a legal variance there from as provided by one of the ordinances.

Certified Arborist: An individual who has been certified as an arborist by the International Society of Arboriculture and maintains said certification in good standing.

City Arborist: The agent of the City of Snellville having primary enforcement responsibilities under this ordinance, and charged with the responsibility for approval of all landscape plans for land development in the City of Snellville required pursuant to this ordinance. The Zoning Enforcement Officer or his designee shall be charged with the duties of City Arborist.

Diameter at breast height (DBH): A standard measure of tree size. The tree trunk diameter is measured in inches at a height of 4 1/2 feet above the ground. If a tree splits into multiple trunks below 4 1/2 feet, then the trunk is measured at its most narrow point beneath the split.

Ground cover: A category of plants usually ranging from a few inches to a foot or more in height. Some ground covers are excellent for preventing soil erosion; others are helpful in carrying out design patterns.

In perpetuity: The state or condition of lasting forever, continuing forever, or occurring continually.

~~Land disturbance~~Development permit ~~(development permit)~~: A permit issued by the City of Snellville that authorizes the commencement of development on a given tract of land.

Landscape plan: A plan that identifies areas of tree preservation and methods of tree protection within the protected zone, as well as all areas or replanting. Within replanting areas, the common and botanical names of the proposed species, the number of plants of each species, the size of all plants, the proposed location of all plants, and any unique features of the plant shall be indicated.

Ornamental Trees: Small growing trees, attaining a mature height of less than forty (40) feet, grown primarily for aesthetic purposes, i.e.. flowers, fruit, etc. Common ornamental trees in this area include: Dogwood and Bradford Pear trees. A list of trees generally acceptable to this area is included in the Appendix of Article XXI.

Protected zone: All lands that fall outside of the buildable area of a parcel, all areas of the parcel required to remain in open space, and all areas required as landscaping strips according to provisions of the City of Snellville zoning regulations, or conditions of the zoning approval.

Revegetation: The replacement of trees and landscape plant materials into the minimum required landscape areas, as determined by the Zoning Ordinance, conditions of zoning approval, or the Tree Preservation Ordinance.

Specimen tree: Any tree which has been determined by the City Arborist to be of high value because of its type, size, age, and/or of historical significance, or other professional criteria, and has been so designated in administrative standards established by the city. This is usually a plant with desirable form, foliage, fruit, or flower that can be emphasized

although isolated.

Structure: Anything constructed, assembled, or erected, the use of which requires location on the ground or attachment to something having location on or in the ground.

Substantial Building Permit: A nonresidential building permit issued by the City of Snellville with a total value in excess of 50% of the Gwinnett County Tax Assessor's 100% ~~appraised~~assessed value of the existing improvements only. The aggregate value of all building permits issued to the property over the previous 12 months shall be included in this calculation (see Appendix I-D of Article XXI).

Tree: Any self supporting wood perennial plant which at maturity attains a trunk diameter of four (4) inches or more measured at a point four and one half (4 1/2) feet above the ground level and which normally attains a height of at least twenty five (25) feet at maturity, usually with one main stem or trunk and many branches.

Tree density factor: A unit of measure used to prescribe and calculate required tree coverage on a site. Unit measurements are based upon tree size. (Appendix I-A of Article XXI).

Tree Topping: The removal of tree limbs, branches, or stems by cutting at the internodes and resulting in the failure of the tree to assume apical dominance.

Zoning regulations: The Snellville Zoning Ordinance of 1983 as amended or such other regulations subsequently adopted by the council, inclusive of conditions of zoning approval established pursuant thereto.

SECTION 20.3 APPLICABILITY The terms and provisions of this Ordinance shall apply to any activity on real property which requires the issuance of a ~~Land Disturbance~~Development Permit or a Substantial Building Permit within the City of Snellville, but excluding the construction of individual single family detached and duplex dwellings. No ~~Land Disturbance~~Development Permit or Substantial Building Permit shall be issued by the city without it being determined that the proposed development is in conformance with the provisions of these regulations. An application for a development permit shall include a separate Landscape Plan that has been prepared and sealed by a Registered Landscape Architect, Certified Arborist, or ~~Certified Forester~~Registered Forester.

SECTION 20.4 LANDSCAPE STRIPS.

A. Minimum landscape strip dimensions for each lot are expressed in linear feet in the following chart: When a protected zone equivalent to the following landscape dimensions has not been left on a site in a non-single family residential district, or when grading has occurred outside the buildable area on a lot, then landscape strips must be provided as follows:

1. YARD
   FRONT 15 ~~15 15 15 15~~

SIDE		
CORNER	15	~~15 15 15 15~~
INTERIOR	5	~~5 5 5 5~~
REAR	5	~~5 5 5 5~~

B. Within a single family or duplex subdivision where street access to lots with frontage on more than one street is restricted according to Section 5.5.2 of the Development Regulations, a ten foot no access strip shall be required along the frontage of the street(s) with the higher classification. These no access strips shall be planted in accordance with the requirements for landscape strips as outlined in Section 20.4

C. No permanent structures are permitted within landscape strips. This includes pavement, retaining walls, curbing, dumpsters, drainage structures, detention facilities, etc.

1. The only exceptions to this rule are sidewalks and footpaths, when the width of the right-of-way is insufficient.

D. Curb stops must be used when parking perpendicular to five (5) foot landscape strips.

E. Signs within landscape strips may only be located in areas of turf or ground cover and must not conflict with the growth potential of trees and shrubs. Signs are not permitted within required undisturbed buffers.

F. The deposition of storm water runoff into, or drainage swales through landscape strips is generally not permitted.

1. Exceptions will be considered only if this standard will create an undue hardship to the property owner. Under no circumstance may the length of a drainage easement through a landscape strip exceed the width of the strip.

G. Design standards: All required landscape strips shall be planted with a combination of trees, shrubs, perennials, groundcovers, and grass, as approved by the City Arborist. The landscape strips shall be designed with a minimum 60% coverage in trees and large shrubs (4~~3~~'x 4~~3~~' or larger). Small shrubs, perennials, ornamental grasses, groundcover, and grass may constitute no more than 40% coverage of the landscape strip. All landscape strips along the public right-of-way shall be planted in a manner to achieve a 2-3' tall evergreen screening buffer. Landscape strip coverage will be calculated as follows:

1. Calculate the total spatial area of the landscape strip.

2. Calculate the total coverage of landscape materials, ensuring that the coverage of trees and large shrubs is greater than or equal to 60% of the total area of the strip. The following sizes shall be used when calculating coverage of the landscape materials:

   Trees greater than 6" caliper: 100 square feet
   Trees less than 6" caliper: 50 square feet

Large shrubs: (4~~3~~' height x 4~~3~~' spread or larger): 16~~12~~ square feet
Ornamental grasses: 12~~8~~ square feet
Small shrubs: 9~~5~~ square feet
Perennials: 6~~3~~ square feet

3. Any exposed ground should be planted with a ground cover or an appropriate mulching material. Mulching materials shall not exceed four (4) inches in height.

H. Trees within required landscape strips shall be provided as follows:

1. Landscape strips shall have a minimum of one tree for every thirty (30) linear feet of a landscape strip to the nearest whole number.

2. Clumping is permitted provided that adequate spacing is allowed for future growth.

I. Where desirable, the landscape strip need not be a strip per se or may be reduced to a width of ten (10) feet with the approval of the City Arborist. The minimum area (square feet) to be landscaped must be calculated by multiplying the width of the lot (measured at the building setback line) by the linear foot requirements provided in Section 20.4.A.1.

SECTION 20.5 PARKING AREAS

A. Parking lots designed for eight (8)~~five (5)~~ or more spaces shall be designed as follows:

1. The planter islands may be sized according to two different options:
   (a) Each planter island shall be a minimum of 400 square feet. Planter islands shall be located at the terminus of each parking row and no further apart than every ten (10) parking spaces.
   (b) Each planter island shall be a minimum of 300 square feet. Planter islands shall be located at the terminus of each parking row and no further apart than every twenty (20) parking spaces. Planting strips with a minimum width of five (5) feet shall run continuously between all planter islands. These strips shall be planted with one (1) overstory tree for every thirty (30) linear feet of the strip.

2. All planter islands must be designed with at least 60% coverage in trees in shrubs and no more than 40% coverage in ground cover and landscaping materials. ~~The planter island area shall include two (2) shade trees~~. Planter islands abutting double rows of parking shall include two (2) overstory trees. Planter islands abutting single rows of parking shall include one (1) overstory tree. No plant materials, with the exception of trees, shall exceed three (3) feet in height. Turfgrass, however, shall not be planted in the required islands.

3. All planter islands and landscape strips must be curbed to prevent vehicular encroachment.

4. Planter islands and strips shall be designed to prevent compaction. This may be accomplished by planting a dense shrub cover or by elevating the planting area a minimum of one (1) foot above the curb.

SECTION 20.6 STREET TREES

A. Street trees are required in all residential districts. Street tree requirements are as follows:

1. A Street Tree Planting Plan shall be submitted to and approved by the City Arborist prior to issuance of a development permit. The plan shall be prepared and sealed by a Registered Landscape Architect, Certified Arborist, or ~~Certified~~ Registered Forester. All proposed trees shall be individually located on the plan with an included species list.

2. Street trees shall be planted in the right-of-way, in accordance with the details provided in Appendix XX-A. Street trees shall be planted no further than fifty (50) feet apart and no closer than 25 feet from street intersections. It is not mandatory to plant street trees on each individual lot, where spacing distances are inadequate. Street trees are required on both sides of the street. The City Arborist may approve alternate spacing when the fifty foot spacing requirement cannot be met due to driveways and other improvements.

3. Street tree species shall be selected in accordance with Appendix XX-A and shall be subject to the approval of the City Arborist. No more than 35% of any one species shall be used throughout the development.

4. Street trees shall have a minimum caliper of three (3) inches. They shall be single-stemmed with a single, straight leader.

5. The builder shall install on each lot the street tree(s) specified on the Street Tree Planting Plan prior to the issuance of the certificate of occupancy. However, street tree plantings shall be delayed from May 1 through October 1. In this case, the builder shall enter into a performance surety agreement with the City guaranteeing tree planting by October 15. The performance surety agreement must be executed before the issuance of the certificate of occupancy for lots in this case.

6. Impermeable rigid tree root barriers shall be installed in a linear method in all tree strips. The barriers shall be a minimum of 24" deep and include ribs to direct root growth downward. The root barriers shall be installed in accordance with the details provided in Appendix XX-A.

7. Expandable plastic tree trunk protectors shall be installed on each tree.

8. Street trees may count towards the minimum individual lot tree density requirements, as set forth in Section 21.6.

9. Street trees shall be maintained by the property owner who owns the lot associated with the tree(s) and/or by the homeowners' association. Maintenance shall include, but is not limited to, watering, pruning, tree replacement and removal of leaves and litter from the sidewalks and street, as necessary. All maintenance shall be in compliance with ANSI A300 standards for tree care. A maintenance responsibility statement shall be provided on the final plat.

SECTION 20.7 MINIMUM STANDARDS FOR LANDSCAPE MATERIALS

A. All landscape materials shall meet the minimum guidelines as outlined in the American Standard for Nursery Stock and Chapter 21, Appendix I-B.

B. All deciduous trees shall be a minimum two-inch (2") caliper at the time of planting.

C. All evergreen trees shall be 6 feet tall or larger.

D. All shrubs and ornamental grasses shall be 3-gallon size or larger.

E. All perennials shall be 1-gallon size or larger.

F. Sod, rather than seed, shall be used in all landscape strips and no access strips that abut public right-of-way and shall extend to the curb of the public roadway.

G. Sod, rather than seed, shall be used on all single-family residential lots and shall be installed in all areas designated for grass from the back of the curb to the front corner of all houses, at a minimum.

~~G.~~H. All species must be ecologically compatible with the intended growing site.

~~H.~~I. No more than 35% of any one tree or shrub species may be used.

~~I.~~J. Evergreen trees may only be used in the interior and/or rear landscape strips.

~~J.~~K. All plant materials are subject to the approval of the City Arborist.

SECTION 20.8 INSTALLATION AND MAINTENANCE

A. ~~A.~~ Installation. All landscaping shall be installed in a sound workmanlike manner and according to accepted good planting procedures. The City Arborist shall inspect all landscaping and no certificate of occupancy or similar authorization will be issued unless the landscaping meets the requirements provided in this ordinance.

B. Staking and Guying. Newly planted trees shall not be staked or guyed unless they are unable to stand upright without support. Materials used shall be flat woven polypropylene photodegradable ¾" wide with 900 lb. break strength. Any staking and guying materials used shall be removed within one (1) year of installation.

B. Irrigation. An irrigation system shall be installed in all landscape strips, planter islands, enhanced buffers, and no access strips. The system shall meet the following minimum standards:

1. Preserved trees, shrubs, and native plant communities shall not be required to be irrigated, unless directed by the City Arborist.

2. Drip irrigation systems shall be installed in areas planted with trees, shrubs, perennials, and groundcovers. The City Arborist may approve an alternate comparable system if it provides irrigation at the ground level rather than an upright spray.

3. Turfgrass areas shall be irrigated on a different zone than trees, shrubs, perennials, and groundcovers.

4. Moisture sensor and/or rain gauge equipment shall be required on automatic irrigation systems to avoid irrigation during periods of sufficient rainfall.

5. No significant irrigation overthrow shall be permitted onto impervious surfaces.

~~6.~~A watering schedule shall be submitted as part of the landscape plan. The schedule shall indicate the different irrigation zones and the frequency and amount of irrigation. The watering schedule shall be in accordance with Gwinnett County's regulations concerning water usage.

C. ~~C.~~ Minimum Space Requirements. All trees planted shall be provided with adequate space to grow unobstructed to maturity, to avoid sight obstructions, and to provide clearance. The following include the minimum requirements that must be met.

Location	Overstory Trees	Understory Trees
Distance to other trees	30 feet	20 feet
Distance to overhead power lines	20 feet	0 feet
Distance to light poles	20 feet	15 feet
Distance to fire hydrants, electrical transmission boxes, water meters, or other infrastructure	15 feet	15 feet

D. Maintenance. The owner, occupant, tenant and respective agent of each, if any, shall be jointly and severally responsible for the maintenance and protection of all required landscaping in perpetuity, in accordance with the following standards:

1. Keep landscaping reasonably free of visible signs of insects and disease and appropriately irrigated to enable landscaping to exist in a healthy growing condition.

2. Mow or trim landscaping in a manner and at a frequency appropriate to the use made of the material and species on the site so as not to detract from the appearance of the general area. Growth of plant material at maturity shall be considered where future conflicts such as view, signage, street lighting, utilities and circulation might arise;

3. Maintain all landscaping to minimize property damage and public safety hazards, including removal of dead or decaying plant material, and removal of low hanging branches next to sidewalks and walkways obstructing street lighting; and

   A. ~~Pruning is to be performed to maintain healthy plant matter in accordance with the specifications set forth by the American Forestry Association, the National Arborist Association, or other professional arboricultural organizations.~~ All pruning shall be done in accordance with *ANSI A300 (Part 1) Standards for Tree Care Operations – Pruning*. Tree topping is not allowed. Crown reduction pruning shall be used instead to reduce the height of a tree when necessary. Topped trees shall not be counted toward tree density requirements.

SECTION 20.9 AGREEMENT AND BONDING

A. The developer or owner shall post a performance bond or cash escrow guaranteeing all landscaping materials and work for a period of two (2) years after the approval or acceptance thereof by the City. The bond or cash escrow will be required for commercial developments prior to the issuance of a certificate of occupancy. The bond or cash escrow will be required for residential developments within one year of the date of recording the final plat or before the final certificate of occupancy is issued for the development, whichever case occurs first. In the case of residential developments with multiple builders, each builder will be responsible for providing the bond or cash escrow for the lots for which he/she has received a building permit.

1. The bond will be in the amount of 115% of the estimated cost of replacing all of the required landscaping.

   (a) An itemized estimate should be provided by the owner and based on the opinion of a landscape contractor and found to be reasonable by the City Arborist.

2. The City Arborist shall make an inspection and notify the owner or developer and the Bond Company of any corrections to be made within this two (2) year period.

SECTION 20.10 EFFECTIVE DATE This ordinance shall become effective upon approval by the City Council and Mayor of the City of Snellville.

SECTION 20.11 ENFORCEMENT It shall be the duty of the City Arborist to enforce this Ordinance. The City Arborist shall have the authority to revoke, suspend, or void any ~~Land Disturbance~~Development Permit and shall have the authority to suspend all work on a site or any portion thereof, and to issue citations. The City Arborist shall have the authority to approve alternate methods of compliance with the provisions of this article when he/she determines the overall intent of the article and/or specific guidelines can be met.

SECTION 20.12 VIOLATION AND PENALTY Any person, firm or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor. Each day's continuance of a violation shall be considered a separate offense. The owner of any property wherein a violation exist, and any builder, contractor, agent who may have assisted in the commission of any such violation, shall be guilty of a separate offense. The Snellville Municipal Court shall have jurisdiction to try offenses to these regulations.

SECTION 20.13 APPEAL Any person aggrieved or affected by any decision of the City Arborist relating to the application of these regulations may appeal to the Zoning Board of Appeals for relief or reconsideration within thirty (30) days from the date of the adverse decision of the City Arborist.

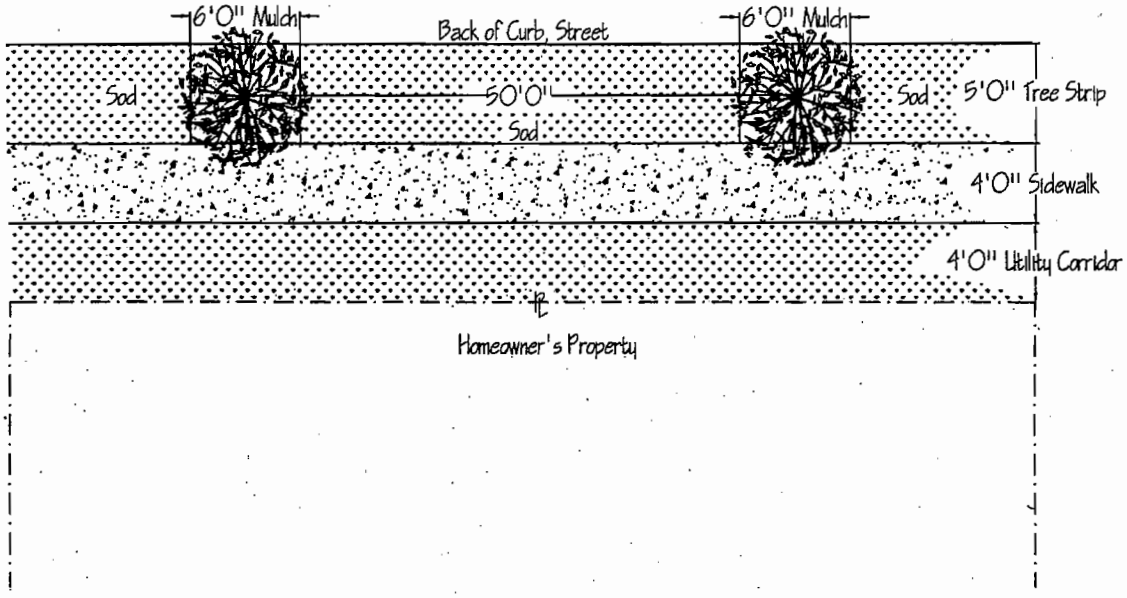
SECTION 20.14 VALIDITY Should any section or provision of this Ordinance be declared by a court of competent jurisdiction to be invalid, such decision shall not affect the validity of the Ordinance in whole or any part thereof other than the part so declared invalid.

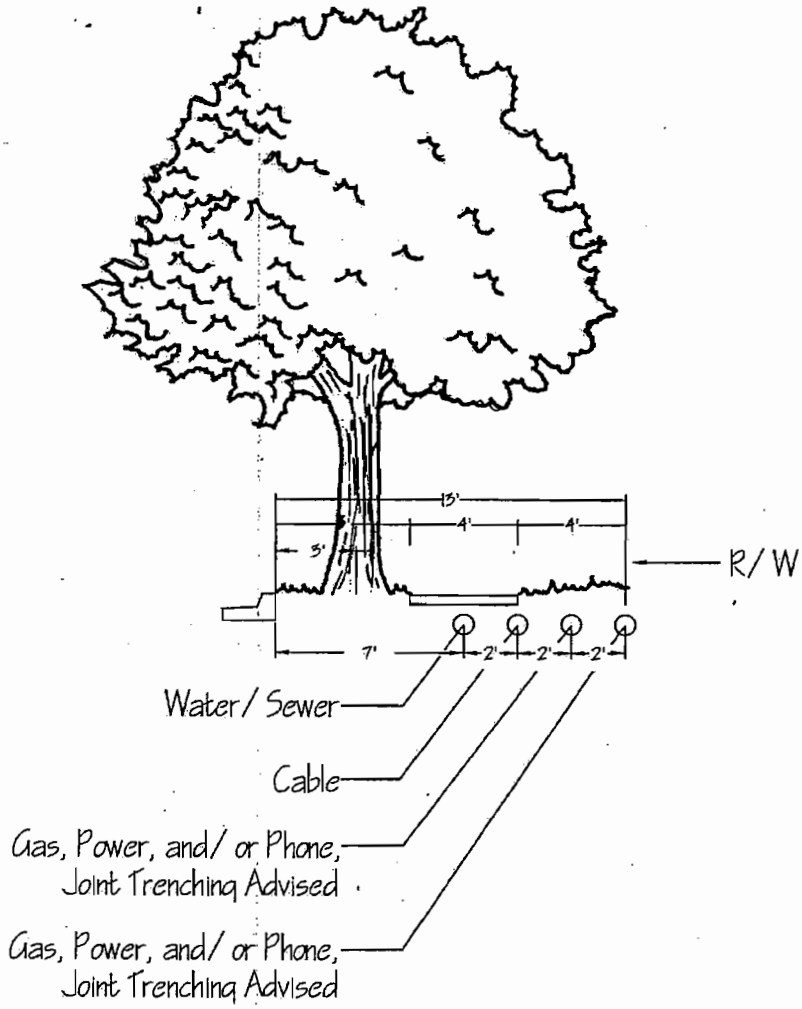
SECTION 20.15 CONFLICTING ORDINANCES REPEALED The provisions of any Ordinance or parts of Ordinances in conflict herewith are repealed.

Section 20.4 Landscape Strips amended 4/18/94.
Section 20.5 Parking Areas amended 6/21/99.
Section 20.6 Installation and Maintenance amended 6/21/99.
Article XX amended 3/26/01.
ARTICLE XX DELETED AND REPLACED TO ADOPT AMENDMENTS – 11/26/01.
ARTICLE XX DELETED AND REPLACED TO ADOPT AMENDMENTS – 12/9/02.

APPENDIX XX-A: STREET TREES

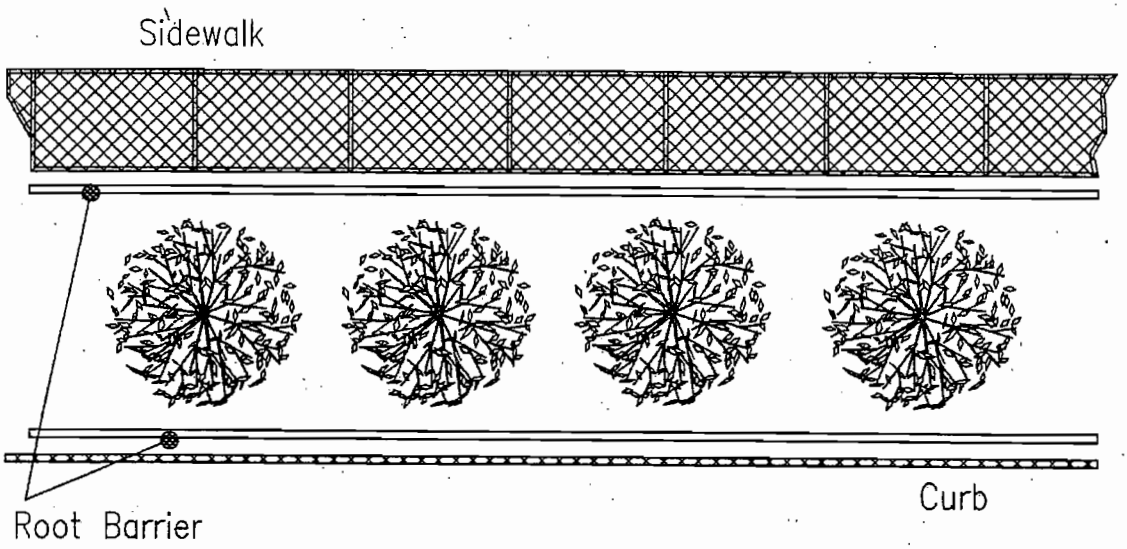
XX-A(1): Details for the location of street trees, sidewalks, utility corridor, etc.





APPENDIX XX-A: STREET TREES

XX-A(2): Detail for the locations of the root barriers



XX-A(3): Approved Street Tree Species

Botanical Name	Common Name	Notes
Acer buergerianum 'Trident Maple'	Trident Maple	single-stem only
Acer rubrum 'Autumn Flame'	Autumn Flame Red Maple	
Acer rubrum 'October Glory'	October Glory Red Maple	
Acer rubrum 'Red Sunset'	Red Sunset® Red Maple	
Acer rubrum 'Summer Red'	Summer Red® Red Maple	
Acer saccharum 'Green Mountain'	Green Mountain Sugar Maple	
Acer saccharum 'Legacy'	Legacy Sugar Maple	
Betula nigra 'BNMTF'	Dura-Heat® River Birch	single-stem only
Ginkgo biloba ' Princeton Sentry'	Princeton Sentry Ginkgo	
Ostrya virginiana	American Hophornbeam/Ironwood	
Parrotia persica	Persian Ironwood	single-stem only
Pistacia chinensis	Chinese Pistache	
Quercus hemisphaerica'Darlington'	Darlington Oak	
Quercus lyrata	Overcup Oak	
Quercus nuttalli	Nuttall Oak	
Quercus phellos	Willow Oak	
Quercus shumardii	Shumard Oak	
Ulmus parvifolia 'Emer I'	Athena® Elm	
Ulmus parvifolia 'Emer II'	Allée® Elm	
Ulmus parvifolia 'UPMTF'	Bosque™ Elm	
Zelkova serrata 'Green Vase'	Green Vase Japanese Zelkova	
Zelkova serrata 'Village Green'	Village Green Japanese Zelkova	

Fall 2003

"The Twig Times"

City of Snellville Community Foresty Newsletter

Volume 1, Issue 1

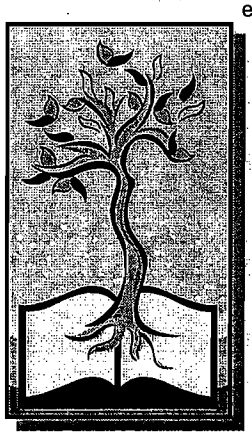
Snellville Implements Community Forestry Education Program

Welcome to the inaugural issue of "The Twig Times," the City of Snellville's community forestry newsletter!

The Georgia Forestry Commission recently awarded Snellville a $3,500 Urban & Community Forestry grant to implement a public education and outreach program on the value of trees and proper care. One component of the City's program is the production of a quarterly newsletter. The goal of this newsletter is to provide you with timely news and advice on community forestry issues. For example, as fall is the optimal season for planting trees in Georgia, this issue will focus on proper planting techniques. This newsletter will be available at City Hall and on the City's web site www.snellville.org. If you wish to receive this newsletter by e-mail, please contact me at jroth@snellville.org and I will add you to our distribution list.

Another component of our grant program is the distribution of educational materials on tree care. The City has purchased a series of 20 consumer education brochures from the International Society of Arboriculture, one of the leading educators in the industry. These brochures provide concise, accurate answers to frequently asked questions on a wide variety of topics, including proper tree planting, pruning, tree selection, mulching, insect control, hiring an arborist, and much more. Please stop by the Planning Department at City Hall to obtain your free copies of these brochures.

A good understanding of the benefits of trees and how to properly care for them is essential to maintain healthy trees in our City. It is our hope that this program will assist our citizens in gaining this knowledge. Should you have any questions about our program, please don't hesitate to contact me.



Jessica S. Roth
City Arborist

Trees: Their Benefits Are Countless!

While few people would disagree that a community with trees makes life more pleasant, most people probably don't realize all of the benefits trees truly give back to the community. As there are too many benefits to discuss in one article, this will be an on-going feature in each newsletter that will highlight a different benefit each season. Since fall is a time when outdoor activities are enjoyed by many, this quarter's article will highlight the psychological and physical benefits trees provide, significant benefits that are often forgotten and overlooked.

Trees provide much of what is unique and attractive in a community by offering a sense of place and stability. Research conducted in Charleston, S.C. after the 1989 Hurricane Hugo revealed that despite losses of homes, churches, and businesses, totaling millions of dollars, the residents considered the single greatest loss to be the trees. This situation was not unique to Charleston, as residents of Miami, FL and Mobile, AL expressed similar reactions from extensive tree losses in their own communities following Hurricanes Andrew (1992) and Frederic (1979) respectively.

While the above examples confirm the psychological benefits of trees, research also substantiates the physical benefits. A nine-year study by Texas A&M focused on patients who had undergone gallbladder surgery at a Pennsylvania hospital. The subjects selected for the study were all similar in age and condition and had received the same surgical procedure. The only difference in the patients was whether they had a room that faced a brick wall or one with a pleasant scene of trees. Those who were able to view the trees during their recovery required fewer painkillers and had a shorter hospital stay than the other patients. (cont'd page 2)

Tree Benefits, continued

This research proves that being surrounded by trees, whether in the community or one's own backyard, seems to meet a fundamental human need. So, with the cooler days and colorful foliage, make this fall as an opportunity to surround yourself with trees—whether it's a walk through Briscoe Park, a drive through the mountains, or planting a forest of your own in your backyard!

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TREE CITY USA.

Check out our web site!
www.snellville.org

New Tree Planting: 8 Steps to a Healthy Tree

Trees should ideally be planted during their dormant season—in the fall after leaf drop or in the early spring before bud break. The cooler weather conditions during these times allow the trees to easily establish roots. The handling and care during planting is just as important as the timing. All new trees should be considered an investment. How well the trees—and your investment—grow depends on the type of tree and location selected, how the trees are planted, and the follow-up care provided. Too often, great care and expense are invested in selecting trees, only to be followed with improper care during and after planting—a problem that will result in slow growth, reduced vigor, and in extreme cases, death. In the arboricultural industry, this problem is referred to as planting a $200 tree in a $100 hole! The following information will allow you to plant your trees properly to ensure long-term health and vigor.

It's better to plant a $100 tree in a $200 hole than a $200 tree in a $100 hole.

1. Find the right place for the right tree. Underground utilities should be flagged to ensure excavation will not damage the lines. Overhead utilities should also identified to ensure encroachment will not occur as the tree grows in height or spread. Soil conditions should be evaluated. Many garden centers and extension services will, for a minor charge, test the soil in your yard. Based on these soil samples, they can recommend whether you need to improve soil conditions through fertilizers or soil amendments (sand, peat moss, or manure) to ensure planting success. Consider the sun and wind exposure—most trees require full sun for proper growth and flower bloom. If your site is in light or dense shade, a species should be selected that can perform well in these areas. Very windy sites can result in drought conditions from dried soils, damage to branches and leaves, and the uprooting of young trees that have not yet established root systems. Lastly, drainage should be evaluated—some trees can tolerate "wet feet" but most cannot.
2. Prepare a shallow, broad planting hole. The hole should be three times the diameter of the root ball and the same depth as the ball. Breaking up the soil in a large area around the hole allows the newly emerging roots to establish easily.
3. Place the tree at the proper height. First, identify the root flare (the area where the roots spread at the base of the tree). If the hole is the proper depth, the root flare will be partially visible after planting—up to 1-2" above the hole. Planting the tree too deep will result in poor growth due to a lack of oxygen. Always lift the tree by the root ball, rather than the trunk, to avoid damage.
4. Straighten the tree in the hole. View the tree from several directions before backfilling to ensure it is straight.
5. Fill the hole gently but firmly. After the hole is filled approximately 1/3, gently pack the soil around the base of the trunk. If the tree is wrapped in burlap, cut and remove the string from around the trunk and top 1/3 of the root ball. Fill the remainder of the hole. To avoid air pockets that will dry the roots, add the soil a few inches at a time and then add water to settle. Continue until the hole is filled and the tree firmly planted. It is not recommended to apply fertilizer at time of planting.
6. Stake the tree, if necessary. If the tree will not stand upright on its own, install two stakes with a wide flexible material around the trunk. Remove all staking and ties after the first year of growth, at the latest.
7. Mulch the base of the tree. Mulch is essential for holding moisture, protecting against harsh soil temperatures, and reducing competition from grass and weeds. Apply a 2-4" layer of mulch (leaf litter, pine straw, shredded bark, etc.) at the base of the tree, being careful not to let it touch the trunk.
8. Water the tree, as necessary. Keep the soil moist, but not soaked. Leaves that turn yellow or fall off are an indication of over-watering. Water at least once a week (in the absence of rain) or when the soil is dry below the surface of the mulch.

For more information, please pick up your free copy of the following brochures from City Hall: *New Tree Planting, Buying High Quality Trees,* and *Tree Selection.*