

**AUGUSTA
TREE ORDINANCE
AND
TREE ORDINANCE ILLUSTRATED GUIDE**



TREE CITY USA.®

REVISED: NOVEMBER 2011

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2011**

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AUGUSTA TREE ORDINANCE

AND

**TREE ORDINANCE ILLUSTRATED
GUIDE (IGO)**

Prepared and adopted by the
Augusta Tree Commission

Roy Simkins, Chairman
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Adopted by the
Augusta Commission

Deke Copenhaver, Mayor
Joe Bowles, Mayor Pro Tem

These documents provide standards for the protection of public trees, for the designation of landmark trees, and landscaping, tree protection and tree establishment standards for the development of private property in Augusta, GA. Included are Chapter 8-4 of the Augusta-Richmond County Code entitled "Trees" (Ordinance No. 6095) and amendments thereto, and the "Illustrated Guide to Implementing the Augusta-Richmond County Tree Ordinance" (Ordinance No. 94-1, adopted December 7, 1993).

Updated September 2011

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Chapter 8-4-1. PURPOSE.

This Chapter provides standards for the protection of public trees, and for the designation of landmark trees, and further provides landscaping, tree protection and tree establishment standards for the development of private property in Augusta, Georgia. It is the purpose of this Chapter to promote the public health, safety, and general welfare of provisions designed to:

- (a) Aid in stabilizing the environment's ecological balance by contributing to the processes of air purification, oxygen regeneration, wildlife habitat, groundwater recharge, and storm water runoff retardation, while concurrently facilitating noise, glare, and heat abatement;
- (b) Encourage the preservation of existing trees and vegetation;
- (c) Prevent soil erosion;
- (d) Protect and enhance the aesthetic qualities of the community;
- (e) Prevent structural and pavement saturation;
- (f) Safeguard and enhance private property values and protect private and public investments;
- (g) Conserve energy.

Chapter 8-4-2. DEFINITIONS.

- (a) **Administrator.** The Executive Director of the Augusta Planning & Development Department.
- (b) **Caliper.** The diameter or thickness of the main stem of a young tree or sapling as measured at six (6) inches above ground level. This measurement is used for nursery-grown trees having a diameter of four (4) inches or less.
- (c) **Commission.** The Augusta Commission.
- (d) **Diameter breast height (DBH).** The diameter or width of the main stem of a tree as measured four and one-half (4.5) feet above the natural grade at the base of a tree. Whenever a branch, limb, defect, or abnormal swelling of the trunk occurs at this height, the DBH shall be measured at the nearest point above or below four and one-half (4.5) feet at which a normal diameter occurs.
- (e) **Dripline.** An imaginary circuitous line of the ground that designates the outermost point to which the tree branches extend.

- (f) **Executive Director.** Executive Director of the Augusta Planning & Development Department.
- (g) **Greenspace.** Any area retained as permeable unpaved ground and dedicated to supporting vegetation.
- (h) **Greenspace Plan.** A topographic survey map and supporting documentation which describes for a particular site where vegetation (green space) is to be retained or planted in compliance with these regulations. The Greenspace Plan shall include a tree establishment element, a tree protection element, and a landscaping element.
- (i) **IGO.** (Illustrated Guide to Implementing the Augusta-Richmond County Tree Ordinance) A document providing standards and specifications for tree protection and tree establishment per Section VIII (c) of the Augusta-Richmond County Tree Ordinance.
- (j) **Landmark tree.** Any tree determined by the Tree Commission and the Augusta Commission, to be of notable historic interest, high aesthetic value, or of unique character because of species, type, age, or size and therefore designated as a public landmark.
- (k) **Land clearing.** The removal of all vegetation two (2) inches DBH or greater.
- (l) **Landscape Establishment Bond.** A two year bond that shall be posted prior to the issuance of a Certificate of Occupancy and released after two years upon a determination that required trees and landscaping are healthy and have a reasonable chance of surviving to maturity.
- (m) **Official street tree planting plan and program.** A plan and program adopted for the planting of trees along public streets, parks and other public places.
- (n) **Official Tree List.** A listing of various tree species, classified by size grouping, to be used to determine the quality rating of trees to be preserved or planted as well as the Quality Points (Section III of the IGO).
- (o) **Planting Island.** An unpaved landscaped area located within a vehicle parking area that is defined physically by curbing or otherwise in such a way that it cannot be driven over or parked upon and which must contain a medium or large tree.
- (p) **Park.** All public land set aside for open space and recreation purposes.
- (q) **Public property.** Any property owned by Augusta, Georgia.
- (r) **Public tree.** Any tree located on public property.
- (s) **Quality points factor.** A decimal fraction that is assigned to each tree species in the Official Tree List and is used as a multiplier in calculating the tree quality points for any tree retained on a site.

- (t) **Right-of-way.** A strip of land over which Augusta, Georgia has the right, by ownership or otherwise to construct a public street, sidewalk, or use for public utilities.
- (u) **Street yard.** A greenspace parallel to the street right-of-way whose total area is equal to at a minimum ten (10) times the length of the right-of-way in square feet.
- (v) **Tree Commission.** An appointed board of twelve (12) members with designated duties as outlined herein.
- (w) **Tree establishment element.** A topographic survey map and supporting documentation which describes for a particular site where trees are to be planted in compliance with the requirements of these regulations, the types of trees and their corresponding tree quality points.
- (x) **Tree protection element.** A topographic survey map and supporting documentation which describes for a particular site where existing trees are to be retained in compliance with the requirements of these regulations, the types of trees and their corresponding tree quality points.
- (y) **Tree protection zone.** The area surrounding a preserved or planted tree that is essential to that tree's health and survival, and is protected within the guidelines of this chapter.
- (z) **Tree quality point (TQP).** A unit of measurement which quantifies the relative value of trees that are planted or retained on a given site. Tree quality points quantitatively express the desirable qualities of the species with regard to size for each tree that is retained on a site. For planted trees the tree quality points are an expression of species desirability and the expected mature size of each tree.
- (aa) **Vehicle display area.** Areas where vehicles are displayed for sale or lease.
- (bb) **Vehicular service area.** Any paved or unpaved area utilized by vehicles.

Chapter 8-4-3. ESTABLISHMENT OF TREE COMMISSION.

- (a) There is hereby created the Augusta Tree Commission which shall consist of ten (10) members appointed by the Augusta Commission plus an additional two (2) members appointed by the Richmond County Legislative Delegation. All appointments shall be for four (4) year terms. The role of the Tree Commissioners will be to define problems, suggest solutions, and provide support; review any appeals or variances and recommend acceptance or rejection to the Administrator; annually review the Illustrated Guide to Implementing the Augusta-Richmond County Tree Ordinance (IGO) and update it as needed; and review petitions for landmark trees. The Tree Commission shall meet no less than quarterly. All members shall be residents of Augusta, Georgia. All vacancies shall be filled for the unexpired terms.

- (b) All Tree Commissioners shall serve without compensation. The Augusta Commission and the Richmond County Legislative Delegation, when appointing members to the Tree Commission, shall appoint persons from the following fields of association: registered landscape architect; realtor / developer of commercial property (licensed broker who is member of board of realtors); urban forester; an agricultural extension agent; architect; engineer; an appointee from the Garden Council of Augusta; a master gardener; and citizens at large who have knowledge of, and interest in trees and the urban forest. The Georgia Forestry Commission Urban Forester may serve as an ex-officio member.
- (c) All terms shall expire on March 30 of the applicable year, and new terms shall begin on April 1 of the applicable year.
- (d) Members shall not receive a salary, although they may be reimbursed for authorized expenses.

Chapter 8-4-4. ADMINISTRATION.

The Augusta Planning & Development Department shall have the responsibility for administering all provisions of this Chapter that relate to the development of private lands. The Augusta Tree Commission shall have the responsibility of administering all provisions that relate to the development of public lands.

Chapter 8-4-5. PUBLIC TREE PROTECTION.

- (a) Any request for the severing from the stump and removal of a tree on a public right-of-way shall be directed to the Augusta Tree Commission for approval. In the event approval is given, Augusta, GA shall notify the local neighborhood association, if any, and shall post on such tree for a period of fourteen (14) days a notice of their intent to remove said tree. Decisions of the Tree Commission shall be final, and there shall be no appeal to the Augusta Commission.
- (b) Trees deemed a danger to the public or the adjoining property by the Tree Commission or the appropriate City Department shall be exempt from the restrictions of this section and can be removed for the safety of the public and/or adjacent properties.
- (c) Nothing herein shall be construed as prohibiting the cutting and/or removal of a tree or trees incidental to a road improvement project, a drainage project, or a water and sewerage project of Augusta, Georgia or the Georgia Department of Transportation.
- (d) All other projects causing disturbance within rights-of-way which may cause extensive damage to trees therein shall likewise be reviewed by the Augusta Tree Commission for recommendations.

- (e) No person or organization shall do any of the following acts to any public tree without first obtaining the proper permission from the Augusta Tree Commission:
- (1) Cut, prune, break, damage, remove, kill or cause to be killed.
 - (2) Cut, disturb, or interfere, in any way, with the soil or any root within the dripline.
 - (3) Place, spray, or apply any chemical that is known to be toxic to trees in a location that may be absorbed by any part of the tree.
 - (4) Fasten any rope, wire, sign or other device whether invasive to the tree or not.
 - (5) Remove or damage any guard devices placed to protect any tree.
 - (6) Conduct razing, removal, demolition, expansion, or renovation of any structure if deemed by Augusta, GA to be damaging to neighboring public trees.
 - (7) Maintain a stationary fire or device which vaporizes noxious fumes deleterious to tree health.
 - (8) Pave with concrete, asphalt, or other impervious material within the dripline of any public tree unless approved construction techniques are followed as prescribed. (Ord. 5933, June 17, 1997)

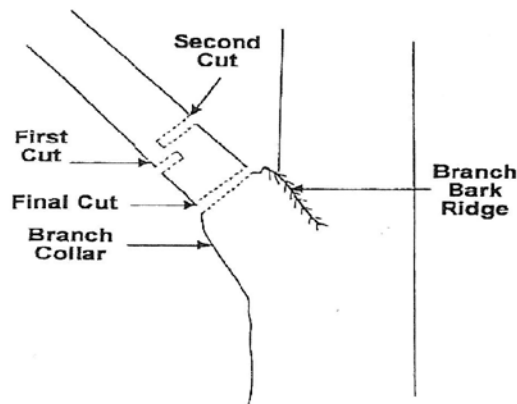
Chapter 8-4-6. TREE PROTECTION ZONE; OFFICIAL TREE LIST.

- (a) There is hereby established a tree protection zone which shall include all public rights-of-way and all public lands of Augusta, Georgia.
- (b) The Augusta Tree Commission is hereby charged with the duty of determining the types of species of trees suitable for planting, as well as those prohibited, and the conditions under which such trees shall be planted along streets, in parks, and in public places within Augusta, Georgia. When completed, the list shall be presented to the Augusta Commission for its approval. When approved, the said report shall be known as the Official Tree List. Revisions in the Official Tree List may be made from time to time by the Augusta Tree Commission. All trees hereafter planted on public property of Augusta, Georgia must be on the Official Tree List, unless otherwise specifically approved by the Augusta Tree Commission.

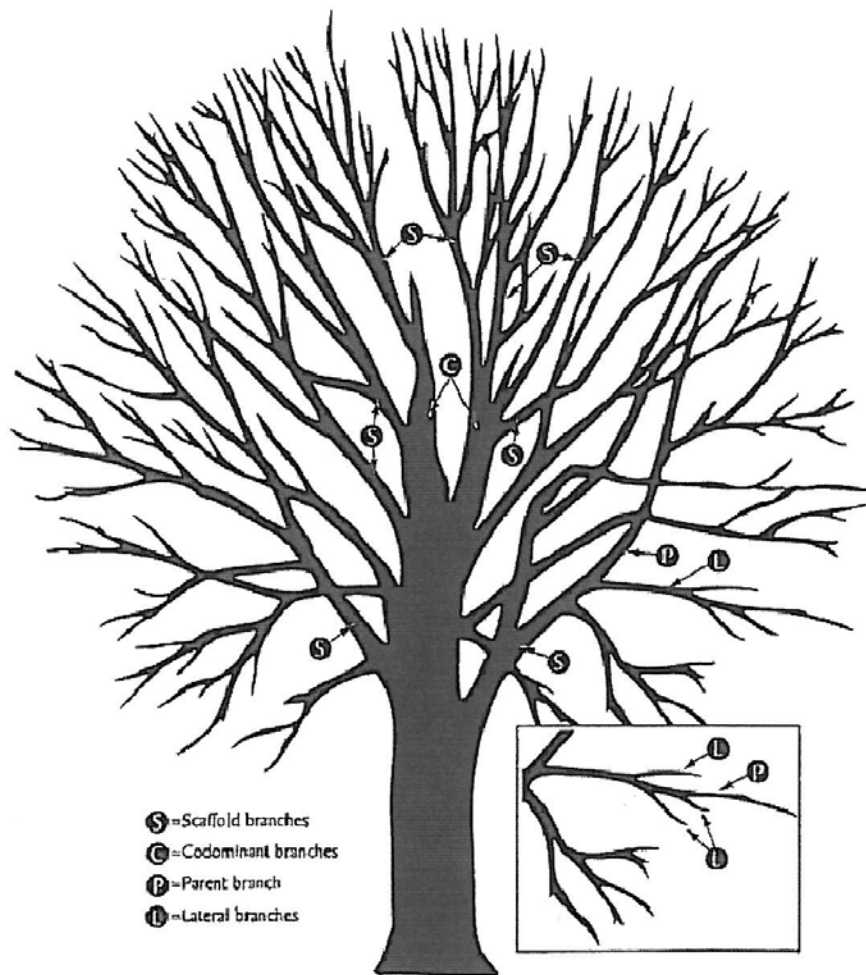
Chapter 8-4-7. PLANTING AND MAINTENANCE STANDARDS.

- (a) The Augusta Tree Commission shall have the authority to insist that all property owners treat or else allow the City to treat trees suffering from transmittable diseases or insect infestations which are on private property but are affecting the health of public trees on public property. If the disease infestation warrants drastic action to curb its spread to healthy public trees, at the direction of the Augusta Tree Commission, the property owner shall remove and dispose of said trees or else allow Augusta, Georgia to do so.
- (b) In case of emergencies, such as windstorms, or other disasters, the removal of broken limbs or uprooted trees, using proper BMP practices, shall be allowed during the emergency period so that the requirements of this Chapter would in no way hamper private or public work to restore order to Augusta, Georgia. This work is to be done in accordance with the emergency standards as outlined by Augusta, Georgia.
- (c) All pruning on any tree required by this Ordinance shall be performed in strict compliance with the “American National Standards” as set forth in the ANSI A300 (Part 1) – 2008 Pruning, or current ANSI standards. A copy of the standards are available at the Augusta Planning & Development Department for review or can be purchased at ANSI.org.

Examples:



cut that removes a branch at its point of origin. (See Annex A – Pruning cut guideline).



Standard branch definitions.

topping: Reduction of tree size using internodal cuts without regard to tree health or structural integrity. Topping is not an acceptable pruning practice

Chapter 8-4-8. MOVING BUILDINGS OR OTHER LARGE OBJECTS

No person shall move any building or other large objects which may injure any public tree or parts thereof along any street without first having obtained written permission from the Augusta Tree Commission and then having obtained a permit from the License and Inspections Department.

Chapter 8-4-9. LANDMARK TREES

The Augusta Commission may, upon petition by the property owner, designate a tree as a landmark tree, as defined herein. All nominations for landmark trees shall be reviewed by the Tree Commission which shall make a recommendation on such nomination to the Augusta Commission. Trees so designated shall thereafter be considered public landmarks and shall not be destroyed nor endangered except as recommended by the Tree Commission. The designation of a Landmark Tree shall be based upon an evaluation of the tree in relation to the criteria set forth in the IGO.

Upon designation as a Landmark Tree, the tree shall be protected as provided in this Chapter, and the tree quality points assignment shall be based upon a quality points factor of 200 percent of the tree quality points for a preferred tree of equal DBH.

Chapter 8-4-10. NUISANCE TREES AND SHRUBS

Any tree or shrub or parts thereof growing on public or private property which interferes with or endangers the use of the public streets or obscures sight distance or creates a traffic hazard on intersections or endangers the life, health, safety or property of the public, shall in the opinion of the Tree Commission be declared a public nuisance. The owner shall be notified in writing of the existence of the nuisance and be given a fifteen-day (15) period of time for instigating its correction or removal. If not corrected or removed within thirty (30) days, the Tree Commission shall cause the nuisance to be corrected or removed and the cost shall be assessed to the owner as provided by this Chapter.

Chapter 8-4-11. GREENSPACE REQUIREMENTS FOR PRIVATE AND PUBLIC DEVELOPMENT

- (a) Application. The regulations set forth in this Chapter shall apply to all properties affected by development proposals requiring site plans pursuant to Section 30-2 of the Comprehensive Zoning Ordinance for Augusta, Georgia. Permits for clearing land and grading of land shall not be granted until plans as required by this Chapter have been approved.
- (b) Exemptions. The following types of developments are exempt from compliance with any and all provisions of this Chapter:

- (1) Construction (including clearing) of single-family residential structures on individual lots; and
 - (2) The development of streets within a subdivision is exempt from all of the provisions of the Tree Ordinance except 8-4-11-(e)-(5).
 - (3) Site Plans that require grading only (no construction of improvements) may be exempt from providing 1000 Tree Quality Points per acre of development at the discretion of the Administrator; however a streetyard must be installed per 8-4-11-(e)-(5).
 - (4) Telecommunication facilities in LI or HI zoning unless the site is in view of a residential use in a residential zone, as viewed from the base of the tower.
 - (5) Federal, State and local government infrastructure (water, sanitary sewer and stormsewer) projects.
- (c) Greenspace Plan required. Except as herein provided, there shall be a Greenspace Plan for every applicable development. Such plan shall include a landscape element, a tree protection element, and a tree establishment element.
- (d) Landscape element. Such element shall include a topographic survey map illustrating compliance with the design principles and standards included in the following section.
- (e) Landscape element design principles and standards.
- (1) A minimum of ten (10) percent of the total land area of any development shall be devoted to greenspace.
 - (2) No artificial plants, trees, or like materials shall be counted toward meeting the standards of these regulations.
 - (3) All retained or planted trees shall be protected or situated so as to prevent damage from environmental changes (such as a lowered water table) or land disturbance resulting from any building or facility construction.
 - (4) Sidewalks, curbing, or any other paved or impermeable surfaces within the greenspace area shall not count towards the ten (10) percent minimum greenspace or street yard requirement.
 - (5) A street yard area shall be provided along any existing or proposed public street right-of-way or private right-of-way adjacent to or adjoining the property except for those portions of the lot used for driveways. Detention or retention ponds at the front of the property near the right-of-way do not relieve the developer from installing the required street yard.

For site plans that include fewer than one hundred (100) total parking and loading spaces, the minimum width of the streetyard shall be 10' and the streetyard shall be that area immediately adjacent to the right-of-way. Street yards shall be landscaped and properly maintained by the owner and shall have live vegetation including groundcover, grass, trees, shrubs and may, unless otherwise prohibited, include fences and walls and plantings for parking areas. Each street yard shall have at least one (1) large tree for each forty (40) linear feet on center of street frontage, with a large tree being located within 20' of each side property line. All planted trees must be at least three (3) inches in caliper, have a single trunk, and be unbranched to six (6) feet.

In zoning districts where zero setbacks are permitted by the Comprehensive Zoning Ordinance for structures adjoining public street rights-of-way, the street yard and its plantings may be located upon the public property if approved by the Department of Public Works. In all other cases, the street yard must be located on private property.

For site plans that include one hundred (100) or more total parking and loading spaces, the minimum width of the streetyard shall be 15' and the streetyard shall be that area immediately adjacent to the right-of-way.

When a use of land is intensified or expanded in such a way that the required parking must be increased more than twenty (20) percent (except for parking areas where a twenty (20) percent increase would be less than 5 new spaces) then the entire site including the already developed area must be provided with a street yard. The minimum width of the streetyard shall be 5' and the streetyard shall be that area immediately adjacent to the right-of-way.

Where a property adjoins a right-of-way such as gas, power, railroad, etc., that is adjacent to and parallel with a public or private street, the subject property shall be deemed to front on the public or private street and streetyard requirements shall be adhered to.

When a major subdivision (10 lots or more) of property occurs along an existing or proposed public street, a streetyard 10' in width, adjacent to the right-of-way, shall be installed and have at least one (1) large tree for each forty (40) linear feet on center of street frontage, with a large tree being located within 20' of each side property line. All planted trees must be at least three (3) inches in caliper, have a single trunk, and be unbranched to six (6) feet. Streetyards shall be landscaped and properly maintained by the owner and shall have live vegetation, groundcover, grass, trees, shrubs, and may, unless otherwise prohibited, include fences and walls and plantings for parking areas.

As of January 2003, any existing streetyard tree may not be cut or removed without permission of the Tree Commission.

(6) Parking lots providing over five (5) spaces shall contain interior landscaped areas. This section shall apply to any surface parking lot or loading area or vehicular service area or portions thereof built after the adoption of this Chapter. The number, size, and shape of interior landscaped areas shall be at the discretion of the owner subject to the following provisions:

(a) A minimum of five (5) percent of the total interior area of parking lots, loading areas, and vehicular use areas shall be devoted to landscaping. Required street yards may not count toward the five (5) percent. There shall be no more than twelve (12) consecutive parking spaces between planting islands, which must contain a medium or large tree, and which must be at least one hundred (100) square feet in area with a minimum width of eight (8) feet measured inside of curb to inside of curb. On such site plans one of every five (5) required planting islands must be a minimum of 37.5 feet in length and eight (8) feet in width, inside of curbing, unless all parking spaces are arranged around the perimeter of the parking lot. When row parking is utilized, the end of each row of parking must be a double planting island with a minimum of one medium or large tree per row of parking.

When a use of land is intensified or expanded in such a way that the required parking must be increased more than fifty (50) percent (except for where such an increase would be less than twenty (20) spaces), the new parking area must conform to the requirements of this subsection and the already developed parking area must be retrofitted with planting islands at a rate of one for every twelve (12) which is no less than one hundred (100) square feet in area and with a minimum width of eight (8) feet.

All internal planting areas shall be landscaped with approved plant materials compatible with accepted arboricultural practices as set forth in the IGO. The area devoted to interior planting islands may be deducted from the required parking area pursuant to Section 4-2 of the Zoning Ordinance at a rate of one (1) space per two hundred (200) square feet of planting island except that the requirement of spaces shall not be reduced over ten (10) percent.

For the purposes of calculating consecutive parking spaces, handicapped parking spaces shall equal one and one-half (1-1/2) parking spaces.

As of January 1, 2003, any existing parking lot tree may not be cut or removed without permission of the Tree Commission.

(b) No parking space shall be further than 65 feet from the trunk of a medium or large tree with no intervening building.

- (c) Within existing parking areas, all new curbing around landscaped islands shall match existing curbing within the site. If no curbing is present within the site, then concrete curb and gutter, per City of Augusta standards and specifications, shall be used around landscaped islands.
In new parking areas, all curbing around landscaped islands shall be concrete curb and gutter, as approved by the City Engineer.
- (7) Lighting serving to illuminate a parking area shall not be located within a required planting island. Further, no light pole taller than 12' shall be within 20' of a large or medium tree.

As of December 31, 2008, all light pole locations shall be indicated on the Landscape Plan.

- (a) No flag poles shall be located within a required landscaped island nor within 20' of a large or medium tree.
- (b) No signs, except for directional signs, shall be located within a required landscaped island, nor within 20' of a large or medium tree provided that no such directional sign shall exceed 30 inches in height nor more than 4 square feet in area.
- (c) No utility boxes, fire hydrants, transformers or other site appurtenances shall be located in a required landscaped island.
- (8) A permanent water source shall be provided not more than one hundred (100) feet from any planted tree.
- (9) Where the rear property line in a multiple-family residential, professional, commercial or industrial zone abuts an R (Residential) zone or single-family residence, a buffer strip not less than twenty (20) feet in width shall be provided. Further, where the rear property line in a commercial zone abuts an A (Agricultural), R-MH (Residential Manufactured Home), R-2 (Two-family Residential), or R-3 (Multi-family Residential) zone or single-family residence within one of these zones, a buffer strip not less than twenty (20) feet in width shall be provided. This buffer strip shall be designed to provide a year-round visual screen that is at least eight (8) feet in height and completely blocks the view of the subject property by a person standing just across the property line on the adjoining residential property. It shall consist of six (6) foot solid board or 'shadowbox' style fence or masonry wall that has two finished sides and is approved by the Tree Commission, unless a fence already exists on the adjoining property that meets the requirements of this Ordinance. The buffer strip shall be planted with medium or large trees spaced on 40 foot centers with interplanted evergreen plant material, berms, mounds or combinations thereof to achieve the objective within a maximum three (3) year period. No buildings, structures, storage of materials, or parking shall be permitted within this buffer area. Buffer areas shall be maintained and kept free of all debris, rubbish and weeds.

As of January 2003, any existing rear bufferyard tree may not be cut or removed without permission of the Tree Commission.

- (10) Where the side property line in a multiple-family, professional, commercial, or industrial zone abuts an R (Residential) zone or single-family residence, a planted buffer strip not less than ten (10) feet in width shall be provided. Further, where the side property line in a commercial zone abuts an A (Agricultural), R-MH (Residential Manufactured Home), R-2 (Two-family Residential), or R-3 (Multi-family Residential) zone or single-family residence within one of these zones, a buffer strip not less than twenty (20) feet in width shall be provided. This buffer strip shall be designed to provide a year-round visual screen that is at least eight (8) feet in height and completely blocks the view of the subject property by a person standing just across the property line on the adjoining residential property.

Said buffer strip shall begin at the front setback line and extend along the entire remaining side boundary. It shall consist of a six (6) foot solid board or shadowbox" style fence or masonry wall that has two finished sides and is approved by the Tree Commission, unless a fence already exists on the adjoining property that meets the requirements of this Ordinance. The buffer strip shall be planted with medium or large trees spaced on 40 foot centers with interplanted evergreen plant material, berms, mounds or combinations thereof to achieve the objective within a maximum three (3) year period. Buffer areas shall be maintained and kept free of all debris, rubbish and weeds. No buildings, structures, storage of materials, or parking shall be permitted within this area.

As of January 2003, any existing side bufferyard tree may not be cut or removed without permission of the Tree Commission.

- (11) The mature or ultimate spread of planted trees shall be shown on the Greenspace Plan. Planted trees shall be diagramed according to the following minimum standards in order to qualify for tree quality points:

- *large trees - thirty-five (35) foot spread
- *medium trees - twenty-five (25) foot spread
- *small trees - fifteen (15) foot spread

- (12) No new utilities (overhead or underground) shall be located directly above or below existing or proposed tree locations. (Proposed utilities must be routed away from all trees.)

- (f) Tree protection and tree establishment elements. Land cleared for development or land being proposed for development shall have, after development, not less than one thousand (1,000) tree quality points (TQP) per acre on a given site. Tree quality points shall only be calculated on the acreage of the site that is being developed. Undeveloped portions of the site shall not be required to provide tree quality points (including street yard requirements) nor shall tree quality points for

existing trees be counted toward the requirements of the developed portion of the site. Tree protection and tree establishment elements may be provided separately or collectively depending on the nature, complexity, and scale of the development. Such elements shall include a topographic survey map showing:

- (1) Existing tree cover and tree cover that is to be removed.
- (2) The location and species of all trees to be retained on the developed portion of the site for which tree quality points are to be claimed, including their DBH, tree quality points, and their tree protection zones. Where a grouping or cluster of twenty (20) or more trees is located within a proposed tree protection zone, the location of individual trees within such cluster is not required to be spotted on the plan, provided the number of trees for each species within the cluster is given and the average DBH is identified for each species. Existing trees on undeveloped portions of the site (i.e. future development) or trees within the right-of-way(s) cannot be counted toward Tree Quality Points.
- (3) The location, species, and DBH of all trees located on adjacent rights-of-way.
- (4) A listing of all trees to be planted on the site for which tree quality points are to be claimed, giving their respective species, caliper, and tree quality points.
- (5) A description of tree planting specifications if different from those listed in the Illustrated Guide to Implementing the Augusta-Richmond County Tree Ordinance (IGO).

IGO and any amendments thereto are hereby adopted by reference. The guide will be reviewed annually by the Tree Commission with the updated version being adopted by reference and each time made a part hereof. All Greenspace Plans shall be provided in a manner consistent with provisions contained therein.

As of January 2003, any existing tree that would count toward the overall requirement for tree quality points (TQP) may not be cut or removed without permission of the Tree Commission.

- (g) Tree protection and tree establishment standards. Tree protection zones shall be established and maintained for all trees preserved or planted on a site for which tree quality points are to be claimed. The following provisions apply to such zones and the trees within them.
 - (1) The tree protection zone shall have a dimension of not less than one-half (1/2) the distance to the dripline of the preserved tree, or the minimum tree protection zones for planted trees set forth in Table 1; whichever is greater. Tree protection zones shall be barricaded prior to the commencement of construction and until the Certificate of Occupancy has been issued.

- (2) The area within any tree protection zone must remain open and unpaved. The use of perforated pavement may be allowed subject to the approval of the Administrator.
- (3) Deleted
- (4) No vehicles shall be parked, construction material stored, substances poured, disposed of, or placed, within any tree protection zone at any time during clearing or construction of the project.
- (5) No change in grade within the tree protection zone shall be allowed except for a maximum addition of two (2) inches of sandy loam topsoil covered with mulch.
- (6) Tree wells or tree walls (islands) shall be constructed as needed to protect the preserved trees from grade changes which result in changes of water supply to the tree protection zone. Adequate means for drainage of excess moisture from the tree protection zone shall be provided if tree wells or tree walls are constructed.
- (7) For planted trees, the minimum size Tree Protection Zone centered upon the planted tree shall be as specified in Table 1.
- (8) The ground elevation where trees are to be planted in a street yard shall be within five (5) feet of the ground elevation of the street right-of-way.

Table 1

Minimum Tree Protection Zone for Planted Trees

<u>Mature Tree Size</u>	<u>Minimum Area Square Feet</u>	<u>** Protection Zone</u>
small *	16	2.0' radius
medium *	66	3.0' radius
large *	200	4.0' radius

* A listing of small, medium, and large trees is found in IGO.

** Protection Zone = Minimum distance from tree trunk to edge of dripline.

(h) Tree standards.

- (1) All required trees shall be grown within one climatic zone of Augusta, GA.

- (2) All required trees shall be nursery grown, typical of their species or variety, with normal, densely developed branches and vigorous, fibrous root systems. Trees shall be sound, healthy, vigorous, free from defects, free from disfiguring knots, free from sun scald injuries, frost cracks and/or abrasions of the bark, and be free from plant diseases, insect eggs, borers, and all forms of infestation. All trees shall have a fully developed form without voids and open space. Trees shall not be loose in the container or root ball. It is recommended that dug trees shall have been root pruned at least once.
- (3) All required trees shall have straight, single central leaders. Trees that have the main trunk forming a “Y” shape are not acceptable. Trees that are not fully branched will not be accepted. Trees shall have no bark damage and shall not be leaning or have significant sweep, crook or bend. Trees shall have a minimum 3” caliper and shall have no branch more than ½ the diameter of the main leader and shall have a straight unbranched trunk to 6’. Trees specified as “multi-stemmed” shall have a minimum of 3 and a maximum of 5 separate canes a minimum of 1” caliper each coming from the root ball and pruned into tree form with no branches on the lower half of the tree. Multiple plants shall not be used as a “multi-stemmed” plant.
- (4) All required trees shall be set in the planting pit to proper grade and alignment, and shall be set upright, plumb and faced to give the best appearance or relationship to other trees. Each tree shall be set 1-2” above the finish grade and backfill shall be brought even with the top of the root ball. No fill shall be permitted atop the root ball.
- (5) All burlap, ropes, straps and wires shall be removed from the root ball. If it is not possible to remove the burlap and wire from the bottom of the root ball, the burlap and wire shall be cut away from the sides and removed from the hole.
- (6) After required trees are set, the backfill shall be muddled around the base of the root ball and all voids shall be filled.
- (7) All required trees shall have their planting pits mulched with approved mulching material immediately after planting. The mulched areas shall be thoroughly water. Note: Mulch shall be placed to a maximum thickness of 3” except at the trunk, where it shall be no more than 1”.
- (8) If staking and supports have been installed on the required tree(s), all staking and supports shall be removed after one growing season.

- (i) Tree quality points.
 - (1) Tree quality points shall be assigned to preserved or planted trees as described in the Illustrated Guide to Implementing the Augusta-Richmond County Tree Ordinance (IGO).
 - a. Deleted
 - b. Deleted

Table 2

Tree Quality Points for Planted Trees

<u>Mature Size</u>	<u>Acceptable</u>	<u>Recommended</u>	<u>Preferred</u>
small *	5	5,10,15,20,30	10,15,20,30,40
medium *	5	15,30	30,40,60,90
large *	15	40	40,90

* A listing of small, medium, and large trees is found in the IGO.

- (2) Tree quality points for preserved trees. Quality points for trees preserved on the site are directly related to the tree species quality and the tree protection zone that must be provided for the tree. For preserved trees, tree quality points are calculated by squaring the tree's DBH (diameter at breast height) and multiplying this number by the applicable quality points factor. If the calculated tree quality points is less than that given for planted trees in Table 2, then the greater number will apply.

$$(\text{DBH})^2 \times (\text{Quality Points Factor}) = \text{Tree Quality Points}$$

Table 3

Tree Quality Points Factor

<u>Tree Quality Rating</u>	<u>Quality Points Factor *</u>
Acceptable	0.2
Recommended	0.6
Preferred	1.4
Landmark Trees	2.0

* The assigned quality points factor is found in the Tree Species List in IGO.

Chapter 8-4-12. COMPLIANCE.

All improvements shown in the Greenspace Plan shall be constructed and all plant materials shall be in place and approved by Augusta-Richmond County before a Certificate of Occupancy will be issued for any use of land or structure(s) that is not exempted from this Ordinance. If at the time of request for a Certificate of Occupancy the required landscaping is not in place and it can be determined Augusta-Richmond County personnel that unavailability of plant materials or that weather conditions prohibit completion of this planting, then the developer may, at the discretion of the Executive Director, provide an executed contract binding until December 31 of the calendar year in which the application is made that provides for the completion of such landscaping work, and also a Performance Bond or an Irrevocable Letter of Credit from a federally insured lender in an amount to be approved by Augusta-Richmond County commensurate with the cost of completing the required landscaping.

Existing trees or other landscape features as delineated on previously approved Site Plans and subsequently installed to conform with the minimum standards of this Ordinance may not be removed or altered without prior approval of the Tree Commission.

In the event that trees cannot be planted on the site due to hardship, a variance of the Tree Commission may be applied for. The variance request shall include: the variance fee, as set forth by the Augusta, GA, a letter explaining the need for the variance, a mitigation package at a rate of two trees for every tree not planted on the site, (trees will be planted at another location on the site or at a location as set forth by the Augusta Tree Commission), and a Landscape Establishment Bond in the amount of \$500 per tree in the mitigation package. If trees are to be planted offsite, installation of the trees will be the developer's responsibility, and maintenance for a two year term, from the date that the trees are planted will also be the developer's responsibility. A Maintenance Agreement will also be required for a term of two years, unless waived by the Augusta Tree Commission. In lieu of the mitigation package, a fee in the amount of \$1500 per tree to be mitigated shall be payable to Augusta-Richmond County, and deposited in a separate Landscaping Account (hereinafter referred to as the "Tree Bank"), for placement of or replacement of trees within the City. A Landscape Establishment Bond nor a Maintenance Agreement will be required if this option is exercised.

Chapter 8-4-13. LANDSCAPE ESTABLISHMENT BOND.

A two-year Landscape Establishment Bond shall be posted with the Administrator prior to issuance of the Certificate of Occupancy. This bond shall be in the amount of the contract award for landscaping or in an amount determined by Augusta-Richmond County, whichever is higher. After 18 months, the Augusta-Richmond County shall inspect the site and make a determination as to whether or not the required trees and landscaping have not been removed, the required trees and landscaping are healthy, the growth and the integrity of the required trees have not been compromised, the canopy of the required trees have not been reduced in any fashion, and the required trees have a reasonable chance of surviving to maturity. Upon such a finding, the bond shall be released at the end of the two-year Landscape Establishment Bond period. In absence of such a finding, the Landscape Establishment Bond shall not be released and the

owner/developer of the property shall be notified to replace the unhealthy trees and landscaping or take other appropriate action as required by Augusta-Richmond County. If the owner/developer fails to comply with the decision of Augusta-Richmond County within sixty (60) days of receiving a written notice, then the City shall use the Landscape Establishment Bond to the extent necessary to bring the property into compliance with the provisions of these regulations.

Before release of the Landscape Establishment Bond, documentation (an Agreement to Maintain Required Landscaping) shall be signed by the Owner certifying that the required trees located on the site will not be removed, the growth and the integrity of the required trees will not be compromised, nor shall the canopy of the required trees be reduced without prior approval of the Tree Commission.

Chapter 8-4-14. APPEALS AND VARIANCES.

- (a) Decisions of the Administrator may be appealed to the Augusta Tree Commission. The Tree Commission shall also hear requests for variances from the provisions of this Chapter. The variance request must be made in writing to the Administrator by the first Monday of any given month for that month's Tree Commission meeting. The Tree Commission shall review the appeal or variance and make its recommendations to the Administrator.
- (b) Variances shall only be granted upon a determination that the variance is the minimum necessary to afford relief and when in the opinion of the Tree Commission relief is justified.
- (c) Variances shall only be granted upon:
 - (1) A determination that failure to grant the variance would result in exceptional hardship; and
 - (2) A determination that the granting of a variance will not adversely impact the intent and purpose of these regulations.
- (d) The Tree Commission may approve, deny, or approve with conditions a request for a variance. Conditional approval may be granted where mitigation of the impact is agreed upon by the Tree Commission and the petitioner.
 - (1) The Tree Commission, at its discretion, may require mitigation plantings in City street right-of-ways, in City parks, or on other City-owned property.
 - (2) The Tree Commission, at its discretion, may require a mitigation fee to be paid to the City's Trees and Landscape Department, to be used for plantings in City Street right-of-ways, in City parks, or on other City-owned property.

Chapter 8-4-15. ABROGATION AND GREATER RESTRICTIONS.

This Chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this Chapter and another regulation conflict or overlap, whichever regulation imposes the more stringent restrictions shall prevail.

Chapter 8-4-16. SEVERABILITY.

If any provision of this Chapter is declared to be invalid, such declaration shall not affect, impair, or invalidate the remaining provisions of this Chapter.

Chapter 8-4-17. ENFORCEMENT, VIOLATION AND PENALTY.

All violations of the provisions of this Chapter or failure to comply with any of its requirements shall be reported to the Augusta Tree Commission. Once a violation is evident, the Augusta Tree Commission, acting on behalf of the Augusta Commission, shall notify the owner in writing of the apparent violation of this Chapter. The written notice shall direct the owner to cease the violation until such time as the requirements and procedures of this Chapter have been met. Upon failure of the owner to comply with this notice, the Augusta Tree Commission shall notify the Augusta City Attorney of the violation and the Augusta City Attorney shall immediately begin legal procedures in the Superior Court of Richmond County to prevent, enjoin, abate, or terminate such violations in addition to injunctive relief. All persons, firms or corporations failing to comply with the mandatory provisions hereof or doing any act prohibited hereby shall be guilty of a misdemeanor and shall be punished as provided in Chapter 1-6-1 of this Code. Each day such violations continue shall be considered a separate offense. Nothing herein contained shall prevent the Augusta Commission from taking such other lawful action as is necessary to prevent or remedy any violations.

Any action resulting in the death or destruction of a public tree on City property or within City right-of-way shall be subject to a fine depending on the size of the tree. Trees of 3"-10" caliper will be fined \$1000 per damaged/destroyed tree toward the replacement of tree(s) of equal caliper, species to be approved by the Augusta County Tree Commission. Replacement trees must carry a 2 year Landscape Establishment Bond per the requirements of 8-4-13. Trees larger than 10" caliper will be fined \$1,000 plus replacement cost of the tree, as determined by the Augusta Tree Commission, up to a maximum of \$10,000 per tree. The replacement tree shall be of equal caliper or as approved by the Augusta Tree Commission. Replacement trees must carry a 2 year Landscape Establishment Bond per the requirements of 8-4-13. Nothing herein contained shall prevent the Augusta Commission from taking such other lawful action as is necessary to prevent or remedy any violations.

Done in Open Meeting under the Common Seal thereof this _____ day of _____, 2011.

Approved by the Augusta Commission this _____ day of _____, 2011.

Deke Copenhaver, Mayor

ATTEST:

Lena J. Bonner
Clerk of Commission

First reading - _____

Second reading - _____

**AUGUSTA-RICHMOND COUNTY
ILLUSTRATED GUIDE**



TREE CITY USA.®

REVISED: **January 2011**

**ILLUSTRATED GUIDE TO IMPLEMENTING
THE AUGUSTA-RICHMOND COUNTY TREE ORDINANCE (IGO)**

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**ILLUSTRATED GUIDE TO IMPLEMENTING
THE AUGUSTA-RICHMOND COUNTY TREE ORDINANCE**

I. Purpose

This document provides standards and specification for use in determining whether or not a development project as defined in Section VIII (A) of the Augusta-Richmond County Tree Ordinance is in compliance with the provisions of that Ordinance. Specifically the standards and specifications contained herein shall be used to determine compliance with the tree protection and tree establishment provisions of the Greenspace Plan as required by Section VIII (C) of the Augusta-Richmond County Tree Ordinance.

II. Calculations for Tree Protection and Tree Establishment Elements of a Greenspace Plan

A. Standard – It must be demonstrated that land to be cleared for development or land being proposed for development shall have, after development, not less than 1,000 tree quality points per acre on a given site (Ref. Section VIII (F) of Augusta-Richmond County Tree Ordinance). In order to receive tree quality points, any planted tree must be provided with a minimum Tree Protection Zone based upon its mature size as defined in the tree list. Trees that are to be preserved on a site must be protected (i.e. tree fences, no grading, fill or vehicular encroachment) within an area that is defined by a diameter in feet that is one and one half times the DBH of the tree in inches in order to qualify for Tree Quality Points. For example:

A tree with a 40 inch DBH must be protected within a radius of 30 feet from the tree. (Refer to Illustration 1: Tree Protection Zone)

$$\begin{aligned} 40'' \times 1.5 &= 60 \text{ foot diameter} \\ \text{Radius} &= \frac{1}{2} \times \text{diameter} \\ &= \frac{1}{2} \times 60 = 30 \text{ feet} \end{aligned}$$

The area of this Tree Protection Zone is calculated as follows:

$$\begin{aligned} \text{Area} &= (\pi)(r)^2 \\ &= 3.141 (30)^2 \\ &= 2826.9 \text{ square feet} \end{aligned}$$

Guidelines for tree protection are found in Section V – IX of this guide.

Tree Quality Points quantify the relative value of one tree to another based on three criteria:

1. **Species Quality:** This is a mixture of objective and subjective measures based upon maintenance records, scientific research, and the experience of experts in the field. The relative value of species has been determined specifically for the Augusta area and environment. Species' quality is ranked in order of increasing desirability as Acceptable, Recommended, or Preferred.

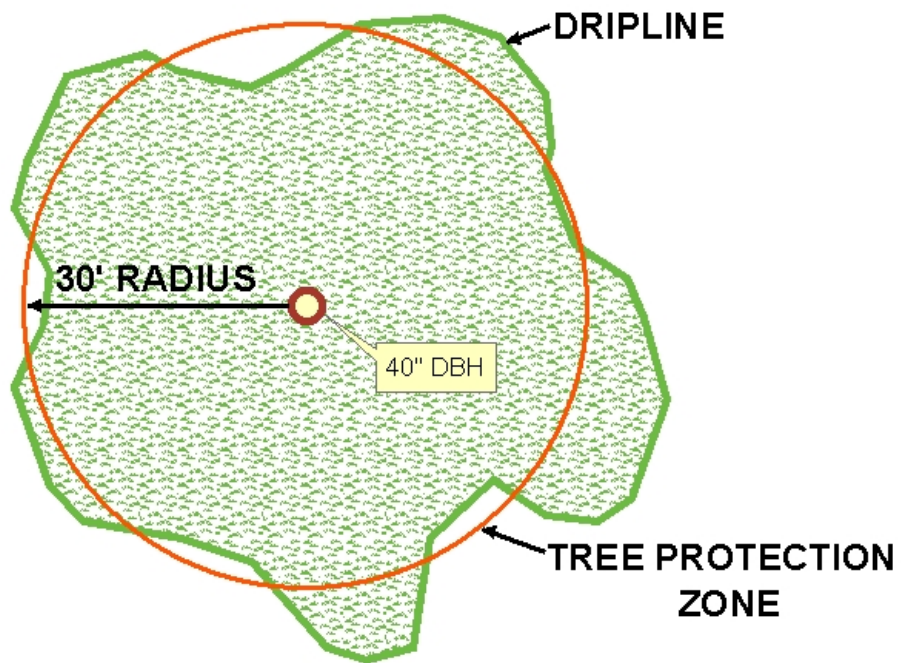


ILLUSTRATION 1. TREE PROTECTION ZONE

2. **Space Requirement:** This factor applies to trees that are retained on a site. Since large diameter trees require proportionately larger areas to be set aside as a Tree Protection Zone, Tree Quality Points are assigned in proportion to this space requirement.
3. **Expected Mature Value:** For trees that are planted on a site, Tree Quality Points assignment is in proportion to the potential size of the tree species and the minimum planting space in which that species can develop in a safe and healthy manner. The mature size is categorized in terms of small, medium, or large.

B. **Method:** For preserved trees, Tree Quality Points assignment is calculated by multiplying the (DBH)² by the Tree Quality Points Factor. If the calculated Tree Quality Points is less than that given for planted trees, then the greater number shall apply. The Tree Quality Points Factors for preserved trees are as follows:

$$(DBH)^2 \times (\text{Quality Points Factor}) = \text{Tree Quality Points}$$

Species Rating	Quality Points Factor
Acceptable	0.2
Recommended	0.6
Preferred	1.4
*Landmark	2.1

*Landmark trees must be certified by the Department of Public Works.

For planted trees, Tree Quality Points assignment can be found on the following chart after checking the tree species for desirability rating:

<u>Mature Size</u>	<u>Acceptable</u>	<u>Recommended</u>	<u>Preferred</u>
Small	5	5,10,15,20,30	10,15,20,30,40
Medium	5	15,30	30,40,60,90
Large	15	40	40,90

C. **Example Calculation:** A restaurant is being planned. The number of Tree Quality Points required for the site calculated by multiplying the area of the site by 1,000 (1.75 acres x 1,000 = 1750 Tree Quality Points). The developer wishes to save six existing trees on the site. The formula for calculating Tree Quality Points for preserved trees is: (DBH)² x (Quality Points Factor) = Tree Quality Points. The calculation of Tree Quality Points that would accrue to the six preserved trees is as follows:

Note that the Quality Points Factor is provided for each species in the tree lists.

Tree #1	12" DBH Water Oak	$(12)^2 \times 0.6 = 86.4$ TQPs
Tree #2	16" DBH Loblolly Pine	$(16)^2 \times 0.6 = 153.6$ TQPs
Tree #3	10" DBH Loblolly Pine	$(10)^2 \times 0.6 = 60.0$ TQPs
Tree #4	16" DBH Loblolly Pine	$(16)^2 \times 0.6 = 153.6$ TQPs
Tree #5	8" DBH Red Maple	$(8)^2 \times 0.6 = 38.4$ TQPs
Tree #6	4" DBH Dogwood	<u>$(4)^2 \times 1.4 = 22.4$ TQPs</u>
	Total	514.40 TQPs

*Note that the TQPs are less than what is given for planted trees, so the greater number will apply.

The Developer must therefore plant enough trees on the site to make up the difference between the 1750 required Tree Quality Points and the 514.40 points he will receive for preserved trees, or 1235.6 TQPs. The Tree Protection and Tree Establishment of the Greenspace Plan for the project show that thirty-one new trees will be planted on the site for the street yard and parking lot requirement.

Tree Symbol	Species	#Trees Planted	TQPs	Total TQPs
CM	Crepe Myrtle	12 x	40	480
WO	Willow Oak	2 x	90	180
RM	Red Maple	7 x	40	280
JM	Japanese Maple	2 x	30	60
H	Holly	2 x	30	60
GR	Golden Rain Tree	6 x	30	180
Total TQPS				1240

Quality points are assigned to each tree to be planted by comparing the species rating to the size at maturity. By adding the individual tree quality points of all thirty-one trees to be planted, it is determined that the sum is 1240 TQPs. This exceeds the 1235.6 points needed so the Tree Protection and Tree Establishment Elements of the Greenspace Plan are acceptable.

III. Tree Species Lists

The following pages list species by size classifications that shall be used to determine the Quality Rating of trees to be preserved or planted as well as the quality points. Tree species or cultivars not listed will be considered by the Tree Commission upon request and quality points assigned accordingly.

SECTION III
NATIVE TREE SPECIES LIST
LARGE TREES

Common Name Scientific Name	Quality Rating	Quality Points For Planting	Quality Points Factor for Retention
1. Ash, Green Fraxinus pennsylvanica	Preferred	90	1.4
2. Ash, White Fraxinus, americana	Preferred	90	1.4
3. Basswood, White (Linden) Tilia heterophylla	Recommended	40	0.6
4. Beech, American Fagus, grandifolia	Preferred	90	1.4
5. Birch, River Betula nigra "Dura-Heat"	Recommended	40	0.6
6. Cedar, Eastern Red Juniperus virginiana	** Preferred	40	2.0
7. Cypress, Bald Taxodium distichum	Preferred	90	1.4
8. Cypress, Pond Taxodium ascendens	Recommended	40	0.6
9. Elm, American Ulmus americana must be "Princeton" or "Jefferson" for new planting	* Preferred	90	1.4
10. Elm, Slippery Ulmus rubra	Recommended	40	0.6
11. Elm, Winged Ulmus alata	Recommended	40	0.6
12. Hickory, Mockernut Carya tomentosa	** *** Recommended	40	0.6
13. Hickory, Pignut Carya glabra	** *** Recommended	40	0.6

* If cultivar "Princeton" is used, specie becomes "preferred" with appropriate increase in quality points (90 points).

** Quality points for retention will be rewarded as shown provided tree is a minimum caliper of 4 inches. Less than that will be awarded the factor less 25%

*** Not recommended for parking lots

NATIVE TREE SPECIES LIST
LARGE TREES (Continued)

Common Name Scientific Name		Quality Rating	Quality Points For Planting	Quality Points Factor for Retention
14. Magnolia, Southern Magnolia granifolia	***	Preferred	90	1.4
15. Maple, Florida Acer barbatum		Preferred	90	1.4
16. Maple, Red Species Acer rubrum "Red Sunset" "October Glory" "Autumn Flame" "Autumn Blaze" "Drumondii" "Summer Red"	***	Recommended	40	0.6
17. Maple, Sugar Acer saccharum "Legacy"		Preferred	90	1.4
18. Mulberry Red Morus rubra		Acceptable	15	0.2
19. Oak, Chestnut Quercus prinus		Preferred	90	1.4
20. Oak Darlington Quercus hemispherica		Recommended	60	0.6
21. Oak, Laurel Quercus laurifolia		Recommended	60	0.6
22. Oak, Live * Quercus virginiana	***	Preferred	90	1.4
23. Oak, Northern Red Quercus rubra		Preferred	90	1.4
24. Oak, Nuttall Quercus nuttallii		Preferred	90	1.4
25. Oak, Pin Quercus palustris		Preferred	90	1.4
26. Oak, Shumard Quercus shumardii		Preferred	90	1.4
27. Oak, Southern Red Quercus falcata		Preferred	90	1.4

*** Not recommended for parking lots

NATIVE TREE SPECIES LIST
LARGE TREES (Continued)

Common Name Scientific Name	Quality Rating	Quality Points For Planting	Quality Points Factor for Retention
28. Oak, Swamp Chestnut <i>Quercus mechauxii</i>	Preferred	90	1.4
29. Oak, Scarlet <i>Quercus coccinea</i>	Preferred	90	1.4
30. Oak, Water <i>Quercus Nigra</i>	Recommended	40	0.6
31. Oak, White <i>Quercus alba</i>	Preferred	90	1.4
32. Oak, Willow <i>Quercus, phellos</i>	Preferred	90	1.4
33. Pine, Loblolly <i>Pine taeda</i>	*** Recommended	40	0.6
34. Pine, Longleaf <i>Pinus palustris</i>	*** Recommended	40	0.6
35. Poplar, Yellow <i>Liriodendron tulipifera</i>	Preferred	90	1.4
36. Sourwood <i>Oxydendrum arboreum</i>	Recommended	40	0.6
37. Sugarberry (Hackberry) <i>Celtis laevigata</i>	Recommended	40	0.6
38. Sweetgum (seedless) <i>Liquidambar styraciflua</i> (<i>Rotundiloba</i> only for new planting)	Preferred	90	1.4
39. Sycamore, American <i>Platanus occidentalis</i>	*** Recommended	40	0.6
40. Tupelo, Black (Blackgum) <i>Nyssa sylvatica 'forum'</i>	Preferred	90	1.4

*** Not recommended for parking lots or street yards

SECTION III
NATIVE TREE SPECIES LIST
MEDIUM TREES

Common Name Scientific Name	Quality Rating	Quality Points For Planting	Quality Points Factor for Retention
1. Carolina Silverbell <i>Halesia caroliniana</i>	Preferred	30	1.4
2. Holly, American <i>Ilex opaca</i>	Preferred	30	1.4
3. Hophornbeam, Eastern <i>Ostrya virginiana</i>	Preferred	60	1.4
4. Hornbeam, American <i>Carpinus caroliniana</i>	Preferred	60	1.4
5. Persimmon <i>Diospyros virginiana</i>	*** Recommended	15	0.6
6. Pine, Virginia <i>Pinus virginiana</i>	*** Recommended	30	0.6
7. Sassafras <i>Sassafras albidum</i>	Recommended	30	0.6
8. Sweetbay <i>Magnolia virginiana</i>	*** Preferred	60	1.4

*** Not recommended for parking lots or street yards

SECTION III
NATIVE TREE SPECIES LIST
SMALL TREES

Common Name Scientific Name	Quality Rating	Quality Points For Planting	Quality Points Factor for Retention
1. Buckeyes <i>Aesculus</i> spp.	Recommended	10	0.6
2. Devilwood <i>Osmanthus americanus</i>	Preferred	15	1.4
3. Dogwood, Flowering <i>Cornus florida</i>	Preferred	20	1.4
4. Downy Serviceberry <i>Amelanchier arborea</i>	Preferred	20	1.4
5. Hawthorn <i>Crataegus</i> spp.	Preferred	20	1.4
6. Loblolly Bay <i>Gordonia lasianthus</i>	Recommended	5	0.6
7. Maple, Chalkbark <i>Acer leucoderme</i>	Preferred	20	1.4
8. Redbay <i>Persia borbonia</i>	Recommended	5	0.6
9. Redbud, Eastern <i>Cercis canadensis</i>	Preferred	20	1.4
10. Red Cedar <i>Juniperus virginiana</i> "Burkii" or "Brodie"	Preferred	40	1.4
11. Waxmyrtle <i>Myrica cerifera</i>	Recommended	5	0.6
12. Yaupon Holly <i>Ilex vomitoria</i>	Recommended	10	0.6

SECTION III
ORNAMENTAL AND EXOTIC SPECIES LIST
LARGE TREES

Common Name Scientific Name	Quality Rating	Quality Points For Planting	Quality Points Factor for Retention
1. Chinese Elm <i>Ulmus parvifolia</i> (all cultivars except "Drake")	Preferred	90	1.4
2. Cryptomeria <i>Cryptomeria japonica</i>	*** Preferred	90	1.4
3. Dawn Redwood <i>Metasequoia glyptostroboides</i>	Preferred	90	1.4
4. Ginko <i>Ginko biloba</i> (male only)	Preferred	90	1.4
5. Japanese Zelkova <i>Zelkova serrata</i>	*** Recommended	40	0.6
6. Pistacio <i>Pistacio chinensis</i>	Preferred	90	1.4
7. Deodora Cedar (<i>Cedrus Deodora</i>)	Preferred	40	1.4

*** Not recommended for landscape islands in parking lots

SECTION III
ORNAMENTAL AND EXOTIC SPECIES LIST
MEDIUM TREES

Common Name Scientific Name	Quality Rating	Quality Points For Planting	Quality Points Factor for Retention
1. American Yellowwood Cladrastis kentuckea	Preferred	60	1.4
2. Callery Pear Pyrus calleryana "Aristocrat"	Recommended	30	0.6
3. Callery Pear Pyrus calleryana "Cleveland Select"	Recommended	30	0.6
4. Chinese Evergreen Oak Quercus myrsinifolia	Preferred	40	1.4
5. Foster Holly *** Ilex opaca "fosteri"	Preferred	30	1.4
6. Japanese Evergreen Oak Quercus acuta	Recommended	15	0.6
7. Savannah Holly *** Ilex Opaca "Savannah"	Preferred	30	1.4
8. Trident Maple Acer buergeranum	Preferred	90	1.4
10. Green Giant Arborvitae *** (Thuja)	Preferred	90	1.4
11. Parrotia	Preferred	90	1.4

*** Not recommended for parking lots or streetyards

SECTION III
ORNAMENTAL AND EXOTIC TREE SPECIES LIST
SMALL TREES

Common Name Scientific Name	Quality Rating	Quality Points For Planting	Quality Points Factor for Retention
1. Blue Japanese Oak <i>Quercus glauca</i>	Recommended	5	0.6
2. Callaway Crabapple <i>Malus prunifolium</i> "Callaway" <i>only</i>	Recommended	5	0.6
3. Cherry Plum <i>Prunus cerasifera</i> "Newport"	Recommended	5	0.6
4. Chinese Fringetree <i>Chionanthus retusus</i>	Preferred	30	1.4
5. Chinese Redbud <i>Cercis chinensis</i>	Preferred	10	1.4
6. Crepe Myrtle <i>Lagerstroemia</i> "Natchez" "Tuscarom" "Fantasy" "Muscogee" "Dynamite" "Sioux"	Preferred	40	1.4
7. Fragrant Tea Olive <i>Osmanthus fragrans</i>	Recommended	15	0.6
8. Golden Raintree * <i>Koelreuteria</i> <i>paniculata</i> or <i>bipinata</i>	Preferred	30	1.4
9. Higan Cherry <i>Prunus subhirtella</i>	Recommended	5	0.6
10. Japanese Dogwood <i>Cornus Kousa</i>	Preferred	30	1.4
11. Japanese Maple <i>Acer palmatum</i> various cultivars	Recommended	30	0.6
12. Lilac Chaste Spikenard <i>Vitex agnus-castus</i>	Recommended	15	0.6

* Not in parking lots

SECTION III
ORNAMENTAL AND EXOTIC TREE SPECIES LIST
SMALL TREES

Common Name Scientific Name	Quality Rating	Quality Points For Planting	Quality Points Factor for Retention
13. Nellie R. Stevens Holly <i>Ilex aquifolium X cornuta</i>	Recommended	10	0.6
14. Okame Cherry * <i>Prunus</i> "X Okame"	Preferred	15	1.4
15. Oriental Arborvitae <i>Thuja orientalis</i>	Acceptable	5	0.2
16. Sasanqua Camellia <i>Camellis sasanqua</i>	Recommended	10	0.6
17. Silky Stewartia <i>Stewartia malacodendron</i>	Recommended	5	0.6
18. Star Magnolia <i>Magnolia stellata</i>	Recommended	10	0.6
19. Taiwan Cherry <i>Prunus campanulata</i>	Recommended	15	0.6
20. Tea Olive <i>Osmanthus X fortunei</i>	Preferred	15	1.4
21. Tulip Tree <i>Magnolia X soulangiana</i>	Preferred	15	1.4
22. Yoshino Cherry <i>Prunus yoshino</i>	Recommended	10	0.6

* Not in parking lots

SECTION III
TREES TO BE PLACED UNDER POWER LINES

Common Name Scientific Name	Quality Rating	Quality Points For Planting	Quality Points Factor for Retention
1. American Hophornbeam Ostrya Virginiana	Preferred	90	1.4
2. American Hornbeam Carpinus Caroliniana	Preferred	90	1.4
3. American Yellowwood Cladrastis Kentukea	Preferred	90	1.4
4. Carolina Silverbell Halesia Carolina	Preferred	90	1.4
5. Chinese Fringe Tree Chionanthus Retusus	Preferred	90	2.0
6. Chinese Pistache Pistacia Chinensis	Preferred	90	1.4
7. Fringe Tree Chionanthus Virginicus	Preferred	90	2.0
8. Goldenrain Tree Koelreuteria Paniculata	Preferred	90	1.4
9. Hawthorn Crataegus Species	Preferred	90	1.4
10. Japanese Dogwood Cornus Kousa	Preferred	90	1.4
11. Trident Maple Acer Buergerianus	Preferred	90	1.4
12. Crepe Myrtle (except "Natchez" or "Fantasy")	Preferred	40	1.4

SECTION III
TREES TO BE PLACED UNDER HIGH TRANSMISSION POWER LINES

Common Name Scientific Name	Quality Rating	Quality Points For Planting	Quality Points Factor for Retention
1. Cornus Florida Dogwood	Recommended	40	0.6
2. Lagerstroemia Indica (Except Natchez or Fantasy)	Preferred	90	1.4
3. Ilex Vomitoria Shadow's Female Yaupon Holly	Preferred	40	1.4
4. Ilex Fosteri Foster Holley	Preferred	40	1.4

*** Not recommended for parking lots or streetyards

IV. TREE AND SITE RELATED DISTURBANCES

- A. Trees protection zones, exceptional trees or stands of trees designated to be saved must be protected from the following damages during all phases of land disturbances and construction processes, in order to qualify for Tree Quality Points.
1. Direct physical root damage.
 2. Indirect root damage.
 3. Trunk and crown disturbances.
- B. Direct physical root damage most frequently occurs during site clearing and grading operations where transport or feeder roots are cut, torn, or removed.
1. Transport and absorptive roots tend to tangle and fuse among the roots of adjacent trees, The removal of trees with heavy machinery along the outer periphery of a tree save area can result in considerable damage within the tree save area.
 2. The most substantial form of physical root damage for all root types occurs in the form of cut roots. Roots are cut in grade reduction, or from trenching for underground utilities, sanitary sewer, or storm sewer lines.
 3. A more subtle form of root damage is the loss of absorptive roots. Absorptive roots normally occur in the top four inches of soil, and can be damaged by any vehicular traffic. The stripping of top soil within a tree's critical root zone can totally eliminate its feeder root system. Critical root zone is illustrated in illustration 3.
- C. Indirect root damage through site modification can result from positive grade changes, temporary storage of fill materials, the sedimentation of erosion materials, soil compaction, and soil chemical changes.
1. Grade changes from fill and sedimentation causes a decrease in soil oxygen levels. An increase in soil carbon dioxide and other toxic gases can also occur, leading to large areas of anaerobic conditions. Anaerobic soil conditions cause a decrease in the root respiration process which is essential for the uptake and transport of minerals and nutrients.
 2. Anaerobic soil conditions are also produced soil compaction, the increase in soil bulk density with a decrease in soil pore space. Compacted soil is also impervious to root penetration, and thus inhibits root development. Soil compaction is generally caused by the weight and vibrations of heavy machinery, vehicle parking, and the storage of fill and/or construction materials within the critical roots zones of trees.
 3. Changes in soil chemistry will adversely affect tree survival. The most frequent occurrence is the change (decrease) in soil acidity by concrete washout which is highly basic. The leakage or spillage of toxic material such as fuels or paints can be fatal to trees.

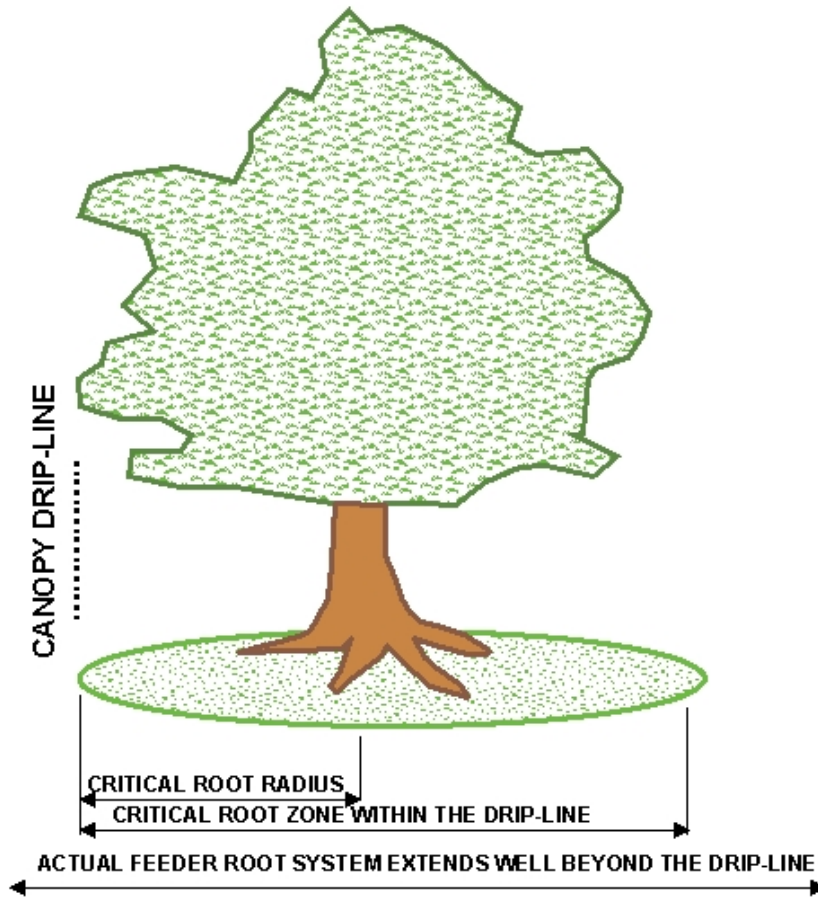


ILLUSTRATION 3. CRITICAL ROOTZONE

- D. Trunk and crown disturbances are generally mechanical in nature and are either caused directly by clearing and grading machinery, or indirectly by debris being cleared and falling into trees marked for protection.
1. Common forms of damages include stripped bark and cambium, split trunks, and broken limbs.
 2. Damage also occurs from the posting of signs such as building permits, or survey markers on trees.
 3. Indirect damage can be caused by the placement of burn holes or debris fires too close to trees. The possible range of damages include scorched trunks with some cambial dieback, the loss of foliage due to evaporative heat stress (leaf desiccation), and completely burned trunks and crowns.

V. **METHODS OF TREE PROTECTION**

- A. Planning considerations. Tree space is the most critical factor in tree protection throughout the development process. The root systems of trees can easily extend beyond the drip line of the tree canopy. The root system within the drip line region is generally considered to be the critical root zone. (Illustration 3). Disturbance within this zone can directly affect a tree's chances for survival. To protect these critical zones, the following standards shall apply:
1. The minimum Tree Protection Zone, shall be an area centered on each tree with a diameter in feet, equivalent to one and one half times the tree diameter in inches, measured at breast height (Illustration 1). Provided, however, in no case shall the area be less than the minimum Tree Protection Zone for a planted tree of the same species found on Table 1, Section VIII (G.7) in the Tree Ordinance for Richmond County, Georgia.
 2. If more than one tree is included in one preserved area, the total minimum preserved area shall include the minimum Tree Protection Zone for each tree in the preserved area.
 3. For initial clearing of the site, an additional area of not less than twenty feet (20) in width shall be added to the perimeter of the Tree Protection Zones until approved tree protection devices are erected.
 4. Layout of the project site utility and grading plans should accommodate the required Tree Protection Zones. Utilities must be placed along corridors between Tree Protection Zones.
 5. Construction site activities such as parking, materials storage, concrete washout, burn hole placement, etc... shall be arranged so as to prevent disturbances within the Tree Protection Zones.

6. No disturbances shall cover within the Tree Protection Zone of trees or stands of trees without prior approval by the Department of Public Works.

B. Protective Barriers

1. The minimum tree protection device shall be a fence constructed at and around the perimeter of the Tree Protection Zone. Minimum fence height shall be four feet (4) (Illustration 4). The Administrator shall approve protective fencing which provides an adequate level of protection.
2. Tree protection devices shall be erected as soon as practical prior to the start of construction and shall remain in place until final inspection and approval of the project. Broken or dislodged tree protection devices shall be immediately repaired.
3. All Tree Protection Zones should be designated as such with “Tree Protection Zone” signs posted visibly on all sides of the fenced in areas. These signs are intended to inform subcontractors of the tree protection process. Signs requesting subcontractor cooperation compliance with tree protection standards are recommended for site entrances.
4. All designated Tree Protection Zones must be protected from the sedimentation of erosion material.
 - a) Silt screening must be placed along the outer uphill edge of the Tree Protection Zone. Minimum fence height shall be four feet (4) (Illustration 4). The Administrator shall approve protective fencing which provides an adequate level of protection.
 - b) Tree protection devices shall be erected as soon as practical prior to the start of construction and shall remain in place until final inspection and approval of the project. Broken or dislodged tree protection devices shall be immediately repaired.
5. All tree fencing and erosion control barriers must be installed prior to and maintained throughout the land disturbance process, and should not be removed until landscaping is installed.

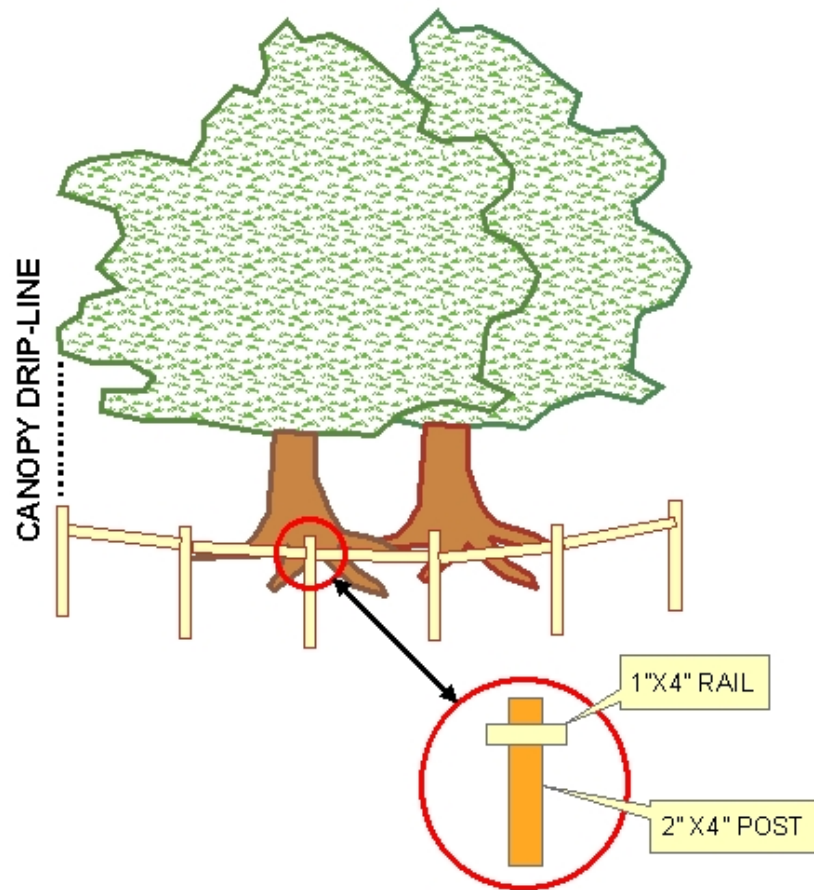


ILLUSTRATION 4. PROTECTIVE TREE FENCING

VI. STANDARDS FOR REMEDIAL TREE CARE

Refer to the following publications for remedial tree care:

1. Shigo, Alex L., Modern Arboriculture, Shigo and Trees, Associates, 1991
2. Tree Establishment and Protection Manual
You can find a copy at the following offices in Augusta, GA:
 - a) Georgia Forestry Commission
2615 Tobacco Road
Hephzibah, Georgia 30815
706-771-4922
 - b) **Augusta Planning & Development Department**
525 Telfair Street
Augusta, Georgia 30901
706-821-1796
 - c) University of Georgia Extension Service
602 Greene Street
Augusta, Georgia 30901
706-821-2349

VII. STANDARDS FOR SELECTING QUALITY PLANTING STOCK

Refer to the following publication for selection quality planting stock:

American Standard for Nursery Stock, American Association of Nurserymen, Inc., ANSI Z60.1, 1986

VIII. TRANSPLANTING STANDARDS

Refer to the following publications for transplanting information:

1. Tree and Shrub Transplanting Manual, International Society of Arboriculture, 1990, revision.
2. Tree Establishment and Protection Manual
This manual can be found at the referenced offices in Section VI, 2.

IX. CRITERIA FOR LANDMARK TREES.

The designation of a Landmark Tree shall be based upon an evaluation of the tree in relation to the criteria set forth:

1. The tree is demonstrated to have an association with a documented historical event, or is located on an historic site.
2. The tree has unusually high aesthetic value.
3. The tree is of unique character because of its age, species, variety, location, or because of the size and development of its crown, trunk, or main stem.
4. The tree is free of contagious diseases, pests and other serious injury.
5. The tree has a life expectancy of more than ten years.
6. The tree is free from structural defects which would present a hazard to the public.

APPENDIX

TECHNICAL TERMS

1. Cambium – Tissue within the woody portion of trees and shrubs which gives rise to the woody water and nutrient conducting system, and the energy substrate transport system in trees. Cambium growth activity results in a tree's radial development, i.e. increase in diameter.
2. Cambial dieback – The irreparable radial or vertical interruption of a tree's cambium, usually caused by mechanical damage, such as "skinning bark", or from excessive heat.
3. Absorptive roots – A complex system of small annual roots growing outward and predominantly upward from the system of transport roots. These roots branch four or more times to form fans or mats of thousands of fine, short, non-woody tips. Many of these small roots and their multiple tips are 0.2 to 1 mm or less in diameter and less than 2 mm long. These roots constitute the major fraction of a tree's root system surface area, and are the primary sites of absorption of water and nutrients.
4. Root collar – The point of attachment of major woody roots to the tree trunk, usually at or near the ground line and associated with a marked swelling of the tree trunk.
5. Root respiration – An active process occurring throughout the absorptive root system of trees, and involving the consumption of oxygen and sugars with the release of energy and carbon-dioxide. Root respiration facilitates the uptake and transport of minerals and nutrients essential for tree survival.
6. Soil compaction – A change in soil physical properties which includes an increase in soil weight per unit volume, and a decrease in soil pore space. Soil compaction is caused by repeated vibrations, frequent traffic and weight. As related to tree roots, compacted soil can cause physical damage, a decrease in soil oxygen levels and an increase in toxic gases, and can be impervious to new root development.