

**PROPOSED  
RICHMOND HILL TREE ORDINANCE  
August 25, 2008**

**Title.**

This chapter shall be known and cited as the City of Richmond Hill Tree Ordinance

**Jurisdiction.**

The provisions of this chapter shall apply to all lands within the City of Richmond Hill, except those which are currently developed.

**Purpose.**

The purposes of this chapter are to:

1. Protect and maintain the urban forest by managing the impact of development
2. Preserve the environmental and aesthetic assets of the community by requiring tree planting and maintenance for development
3. Provide protection from removal for all trees, without a permit, within the City of Richmond Hill, unless exempted.
4. Provide for **40** percent canopy cover in all new developments.

**Definitions.**

For the purposes of this chapter, certain words or terms shall be defined as follows. Words not defined in this section shall be interpreted so as to give them the meaning they have in common usage and to give these regulations their most reasonable application. Words used in the singular shall include the plural, and the plural the singular; words used in the present tense shall include the future tense. The word "shall" is mandatory and not discretionary. The word "may" is permissive. The phrase "used for" shall include the phrases "arranged for," "designed for," "intended for," and "occupied for."

1. **Administrator.** The city manager for the City of Richmond Hill, or designee.
2. **Arborist.** Means a person or firm, who has been trained in the business of diagnosing, treating, pruning and removing trees, including landscape architects, and persons with a formal knowledge of trees, such as Cooperative Extension Service agents. Also includes foresters registered with the Georgia Secretary of State's Office.
3. **American National Standards Institute (ANSI)** means the private, non-profit organization that administers and coordinates the standardization and conformity assessment system. For the purposes of this Ordinance, ANSI references relate to the American National Standard for Tree Care Operations, Trees, Shrubs, and Other Woody Plant Maintenance Standard Practices
4. **Basal Area.** The cross-sectional area of a tree trunk at diameter breast height (DBH) expressed herein in terms of "units" per acre.
5. **Best Management Practice manual** references the standards and specifications based on generally accepted practices developed by the City of Richmond Hill for sound arboricultural practices, techniques and procedures which shall serve as guidelines for trees regulated by this Section , including but not limited to tree selection, planting, pruning, alteration, treatment, protection, and removal as approved by City Council, and available through the city planning and zoning department.
6. **Buffer.** Any visual buffer or screening required by any section of the City of Richmond Hill zoning regulations.
7. **Caliper.** The diameter or thickness of the main stem of a young tree or sapling as measured at six inches above ground level. This measurement is used for nursery-grown trees having a diameter of four inches or less.
8. **Canopy.** The area consisting of a tree's branches in all directions from its trunk, the outer edge which is the dripline.

9. **Canopy tree.** A tree that will grow to a mature height of at least 40 feet with a spread of at least 30 feet. The foliar cover in a forest stand consisting of overhead branches and leaves.
10. **City Arborist.** Means arborist selected by the City of Richmond Hill as a consultant on decisions and issues concerning the city limits.
11. **Clearing.** The removal of trees or other vegetation of two inches DBH or greater.
12. **Coniferous.** A cone-bearing evergreen tree.
13. **Critical Root Zone.** The minimum area surrounding a tree that is considered essential to support the viability of the tree and is equal to a radius of one foot per inch of trunk diameter.
14. **Deciduous.** A tree that sheds leaves at the end of the growing season.
15. **Dead Tree.** A tree that does not contain any live tissue, i.e., green leaves or live limbs.
16. **Development.** The act, process or state of erecting buildings or structures, or making ground improvements only to a parcel or tract of land.
17. **Diameter, breast height (DBH).** The diameter or width of the main stem of a tree as measured 4.5 feet above the natural grade at its base. 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 4.5 feet at which a normal diameter occurs.
18. **Directional Pruning or target pruning, involves removing only those limbs that will come in contact with energized conductors. This reduces the number of times the tree must be pruned and directs growth away from the power lines, thus allowing the tree to achieve its natural height and shape.**
19. **Director of Planning and Zoning.** The director of the planning and zoning department of the city. Also known as the director.
20. **Dripline Radius shall mean a radius equal to the horizontal distance from the trunk of the tree to the end of the longest branch.**
21. **Exceptional tree.** Any tree determined by the mayor and city council, or their designee, as provided for in this chapter, to be of notable historic interest, high aesthetic value, or of unique character because of species, type, age, or size.
22. **Greenspace.** Any area retained as permeable unpaved ground and dedicated on the site plan to supporting vegetation.
23. **Greenspace plan.** A map and/or supporting documentation which describes for a particular site where vegetation is to be retained or planted in compliance with these regulations. The greenspace plan shall include a tree establishment plan, or a tree protection plan, and a landscape plan.
24. **Impervious surface.** A solid base underlying a container that is nonporous, unable to absorb hazardous materials, free of cracks or gaps and is sufficient to contain leaks, spills and accumulated precipitation until collected material is detected and removed.
25. **Landscape plan.** A map and supporting documentation which describes for a particular site where vegetation or trees, is to be retained or provided in compliance with the requirements of this chapter. The landscape plan shall include any required buffer elements.
26. **Minimum canopy requirement is the minimum percentage (40%) of tree canopy required to be preserved are planted on any tract of land being developed.**
27. **Native Tree.** Any tree species which occurs naturally and is indigenous within the region.
28. **Overstory Trees.** Those trees that compose the top layer or canopy of vegetation and will generally reach a mature height of greater than forty (40) feet.
29. **Plot plan.** A map and supporting documentation which describes for a particular site where the building(s), driveway, utility corridors, easements and other improvements are to be located and where greenspace is to be retained or planted in compliance with these regulations.
30. **Preliminary plat.** A map which shows proposed design of commercial project of proposed subdivision, as specified in the City of Richmond Hill subdivision regulations.

31. **Private Tree.** A tree that is located on lands for which the City of Richmond Hill does not have responsibility for tree management.

32. **Public Tree.** Any tree located on property belonging to the City of Richmond Hill.

**33. Root Protection Zone. The minimum area beneath a tree which must be left undisturbed in order to preserve a sufficient root mass to give a tree a reasonable chance of survival. The circular area above and below ground with a radius equivalent to the greater of the dripline or 1.0 feet for every inch in trunk diameter at 4.5 feet above the ground.**

34. **Set-asides.** A piece of land dedicated to open space by the developer or owner. Examples of set-asides include wetlands, parkland, recreation areas, medians of boulevards, etc.

**35. Sight triangle an area on either side of street intersections, street corners or vehicular access points which allows for sufficient sight distance to allow drivers approaching simultaneously to see each other in time to prevent a traffic accident. The size of the sight triangle is governed by space, time and traffic volume of the subject intersection. All sight distance requirements will be established by City Engineering Department.**

36. **Sketch plan.** A conceptual layout for a subdivision as specified in the City of Richmond Hill subdivision regulations.

37. **Species diversity.** A planting or retention of diverse tree species on a site or within the community to prevent dominance by any single type of tree. The purpose of this diversity is to prevent the destruction of the entire urban forest in the event of disease or pestilence.

**38. Tree density means the spread of tree canopy on a square footage area of greenspace.**

39. **Tree easement.** An easement, not less than ten feet in width and not in conflict with any other planning requirements under the zoning and subdivision regulations, for the public planting and/or maintenance of canopy street trees exclusive of utility, drainage or other easements. Administrative approval is required for easements greater than ten feet in width.

40. **Tree establishment plan.** A map and supporting documentation which describes, for a particular site where existing trees are to be planted in compliance with the requirements of these regulations, the types of trees and their corresponding tree quality points.

**41. Tree protection zone (TPZ) means the area essential to a tree's health and survival, including both above ground and below ground space, surrounding a preserved or planted tree which is protected within the guidelines of this article.**

42. **Tree Fund.** The City of Richmond Hill Tree Protection Escrow Fund, established to receive funds paid in lieu of required canopy, or for compensation for damage or removal of city owned trees.

**43. Tree quality rating means, for a planted tree, a square footage area that is assigned to each category of mature tree size and tree quality (unacceptable, acceptable, recommended, and preferred).**

43. **Tree protection plan.** A 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 canopy percentages.

44. **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 these regulations.

45. **Tree Species Selection List.** The recommended species of trees for planting within the City maintained and updated. Said list will also include species that are determined by the city arborist to be discouraged for reasons to be determined by the Tree. However, trees indigenous to Coastal Georgia may be planted.

**46. Unacceptable species means a species determined by the planning and zoning director, or designee, and to be of poor quality and with undesirable characteristics. The director, or designee shall develop and maintain a list of unacceptable species, and such**

**list shall be approved by the city council and kept on file and available in the office of the planning and zoning department.**

**The list shall further contain a list of tree quality ratings of individual species**

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

## **General Provisions**

1. ***Ordinance Administration.*** The city manager, or designee, shall administer the provisions of this ordinance. A permit fee of \$250 per development or subdivision phase, whether residential or commercial, will be charged to review the tree management plan at the time the preliminary plat is presented for review. Said funds will be paid to the planning and zoning department and will cover review and field visits by the city, as needed.

2. ***Permit required for tree removal.*** Except as provided in this chapter, a property owner shall not clear or permit the clearing of property or the removal of any tree without first obtaining a clearing and tree removal permit, as provided herein. A permit fee of \$50 will be charged to individuals seeking permission to remove a tree on their premises.

3. ***Protected Trees.*** The following trees are protected within the City of Richmond Hill and shall not be removed unless a permit has been approved or the requirement receives a variance.

- A. On undeveloped property, any tree greater than six inches (6") DBH
- B. On developed property, any tree equal to or greater than fifteen (15") DBH.
- C. Any tree retained for the purpose of greenspace requirements.
- D. Any tree in a wetland.
- F. Any tree designated as an "Exceptional Tree."

### **4. Exemptions.**

**The following activities and properties are exempt from the regulations in this Chapter and no tree removal permit is required in the following instances:**

- a) **The removal of dead, diseased, or damaged trees.**
- b) **The removal of trees necessary for the construction, operation and maintenance of drainage facilities and sanitary and storm sewers as approved by the City.**
- c) **The removal of trees for construction of public streets and improvements as approved by the City.**
- d) **The removal of trees in time of emergency, but not limited to: tornadoes, windstorms, floods freezes, or other natural disasters. or which pose potential danger to life or property.**
- e) **Utilities in connection with overhead service, distribution, transmission lines, underground service, and distribution lines are exempt from the requirements of this section with the following exceptions:**

- 1. **Pruning or trimming a tree inconsistent with ANSI 300A-2001, as amended, is prohibited.**
- 2. **Removal of trees twelve (12) inches dbh and larger within corridors and/or easements shall require notification, prior to removal, by telephone to the City Administrator or his/her designee and notification to the property owner and/or occupant at least three (3) business days prior to removal.**

3. **The removal of trees of special significance shall be governed by this code.**
  4. **Utility lines, which are tunneled beneath tree roots in order to protect feeder roots, are permitted. Elsewhere trenching is allowed no closer to a tree's trunk than three-fourths of the dripline radius. However, protective measures shall be taken as specified in the Best Management Practices manual. with protective measures for feeder roots incorporated herein by reference.**
- f) **Construction (including clearing of the lot) of a detached, semi-detached or attached single-family residential structure where such structure is the principal use on an individual lot, except that exceptional trees on such lots will not be exempt.**
- g) **Any land recognized by the City upon which bona fide agricultural or commercial nursery or tree farm uses are being conducted.**

5. *Designation of an Exceptional Tree.* A tree may be designated as an "Exceptional Tree" and will thereafter be considered a public landmark and shall not be destroyed or endangered.

A. *Procedure.* A tree may be nominated by written request to the city manager, or his designee, or may be nominated by the planning and zoning director. The nomination will be reviewed and approved or denied by the planning and zoning director, in consultation with the city arborist.

B. *Criteria.* The designation of an exceptional tree shall be based upon an evaluation of the tree in relation to one or more of the following criteria:

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 designation of an exceptional tree shall also meet all of the following criteria:
  - a. The tree is free of serious disease, pests and other serious injury.
  - b. The tree has a life expectancy of more than ten years.
  - c. The tree is free from structural defects which would present a hazard to the public.

C. *After designation.* Any tree designated as an "Exceptional Tree" shall be protected from removal or encroachment on the critical root zone.

6. *Establishment of a Tree Fund.* There is hereby created a City of Richmond Tree Fund for the purpose of receiving money paid to the city in lieu of required or tree plantings, or for compensation for damage or removal of city-owned trees. The fund will be used by the city to plant trees on public rights-of-way, easements, or other public property as deemed suitable by the city manager, or designee. Also to be deposited into this fund are monies collected as part of any **temporary tree bonds**. Such funds will be maintained in a local bank.

## **MINIMUM CANOPY REQUIREMENTS:**

**A.** A basic tenet of the City of Richmond Hill Tree ordinance is that all applicable sites maintain a minimum tree canopy of 40 percent. Trees may be tiered and grouped with understory trees planted under the overstory shade canopy of a new or existing tree. Total canopy coverage shall be computed from the sum of the understory and overstory trees planted, including any existing trees on the site.

**B.** The tree management plan shall be submitted by the property developer as part of the preliminary plat or site plan approval process. The developer is responsible for developing and submitting the tree management plan and the plan shall be based on the gross area to be developed. Once the developer sells individual lots, the builder is responsible for implementing the plan for the lots purchased. If the city council approves a preliminary plat before the date this ordinance is approved, the developer/builder will not be required to implement a tree management plan. However, developer and builders are required to provide plantings on lots and recreational parks. Builders who are responsible for planting canopy trees after the final plat has been issued must coordinate that planting with the City of Richmond Hill (see certificates of occupancy). Developers are required to submit their tree plan at the preliminary plat phase and indicate who will be responsible for planting of trees on individual lots after the final plat has been recorded, if applicable.

**C. If canopy coverage in wetlands meets the 40 percent gross canopy coverage required by the tree plan, the developer or builder will still be required to plant a minimum of 1 tree per residential lot with a two inch (2") caliper.**

### **Tree pruning.**

**A. Trees on public property may be pruned for utility line clearance only by tree pruners who have attended a certified utility line training course within a 12-month period of pruning activity. At each pruning site, names of pruning crew with date of certification shall be available for City's review. The City Zoning Department shall be notified in advance the general locality of any pruning activities taking place. All pruning of public trees shall be done in accordance with the American National Standard for Tree Care Operations (ANSI A300-2001) and the most current standards as developed by the National Arborist Association.**

#### **(1) Requirements Pertaining to Utility Companies**

**(a) Prior to conducting any non-emergency tree pruning, all utility companies shall notify planning and zoning department director, and adjacent property owners, in writing, no less than 3 days prior to the start of any work. In protected areas and areas not within the utility franchise authority, the utility company must obtain written approval from the planning and zoning director prior to the start of any pruning, to ensure that the pruning plan is consistent with applicable City regulations**

**(b) Any electric, natural gas, telephone, cable television, other public utility firm, or corporation must apply for a tree removal permit before the removal of any protected tree of any size.**

**(c) Any electric, natural gas, telephone, cable television, other public utility firm, or corporation must notify the City before cutting any portion of a tree of any size including major roots.**

**(d) Utilities and Telecommunications Companies shall use directional pruning unless the City otherwise consents in writing.**

**(e) The City shall supervise the cutting as necessary and may regulate or halt the cutting when it is deemed to be detrimental to any protected tree or when the cutting exceeds what is needed for continued utility service.**

**(2) Required Electric Power Line Clearances.**

**(a) When pruning is required to maintain the necessary clearance between any existing tree and an electric power line, the pruning shall be conducted in accordance with ANSI Standard A300. Branches or leaders to be cut back shall either be pruned to the next lateral having a diameter at least 1/3 of that being cut, or else be pruned just outside the branch-collar at the base of the branch.**

**(b) Except as provided in subsection (c) below, the following maximum clearances shall be periodically established between electrical conductors at various voltages and adjoining vegetation:**

- 1) Telephone, TV cable, and other insulated communication lines require no minimum clearance;**
- 2) Secondary electric lines which carry voltage between 21-750 volts, insulated, shall require a clearance of 2' for areas of existing construction, and a clearance of 4' for areas of new construction;**
- 3) Distribution and transmission lines which carry voltage between 750-35,000 volts, uninsulated, shall require a clearance of 15';**
- 4) Distribution and transmission lines which carry voltage in excess of 35,000 volts, uninsulated, shall require a clearance of 15'.**

**(c) To lengthen the time between clearance pruning cycles for electric transmission and distribution lines, and to facilitate proper pruning to laterals as described in ANSI Standard A300, as referenced in subsection (a), above, clearances around transmission and distribution lines as set out in subsections (b) (3) and (b) (4), above, may be increased to 15' and 20', respectively, at the discretion of City Engineering Department, for the following species only:**

**American Elm (*Ulmus americana*)**

**Hackberry & Sugarberry (*Celtis occidentalis* and *Celtis laevigata*)**

**Silver Maple & Red Maple (*Acer saccharinum* and *Acer rubrum*)**

**Laurel Oak, Live Oak, Water Oak, and Willow Oak (*Quercus* species)**

**Pecan (*Carya illinoensis*)**

**River Birch (*Betula nigra*)**

**Loblolly pine (*Pinus taeda*)**

**Sweetgum (*Liquidambar styraciflua*)**

**(d) Removal and replacement of street trees near electric power facilities. When in the judgment of utility company and the planning and zoning director, a tree interferes with the safe and reliable operation of the electric power system along a street right-of-way, and cannot be pruned in accordance with ANSI Standard A300 so as to provide the required clearance as listed in subsection (b) and (c), above, the utility company may offer to remove the tree and replant an acceptable specie tree for the location or in a location mutually acceptable to the city, to utility company, and to the property owner. Such trees may be planted on public land, or private property, within the limitations and intent of section.**

## **Canopy Analysis**

A basic condition of the City of Richmond Hill Protection Plan is that all applicable sites have a minimum canopy of 40% by area. The canopy requirement must be met whether or not a site had trees prior to development. The canopy may be achieved by counting existing trees to be preserved or actual canopy of preserved trees or groupings, planting new trees, or some combination of the two. For canopy analysis, the following formula shall apply:

$$CR = SA \times .4$$

Where:

*CR = canopy area requirement*

*SA = site area*

### **PROCEDURE FOR CALCULATING THE REQUIRED TREE REPLACEMENT:**

Step 1: *Area of total site from boundary survey*

Step 2: *Multiply area (in square feet) by .5*

Step 3: *Subtract preserved tree area from Step 2*

Step 4: *Select enough overstory and understory trees to equal area remaining after Step 3. (Note: not more than 3 understory trees for each overstory tree. Not more than 15% of one species and not more than 40% of one genus.)*

*NOTE: All replacement trees must be two (2) inch caliper or greater. Replacement trees must have minimum area for growth as shown herein.*

Square footage value placed on a 2" caliber tree for calculating replacement trees:

a) Over-story trees values;

- 1) Large growth trees = 1500 sq. ft./tree planted
- 2) Medium growth trees = 550 sq. ft./tree planted

b) Under-story trees value;

1) Small growth trees = 250 sq. ft./tree planted

**Example 1: Following site to be developed:**

Step 1: 10 acre site = 435,600 sq. ft.

Step 2: 40% canopy cover figure

$435600 \times .4 = 174,240$  sq. ft. to meet 40% canopy cover

Step 3: Preserved trees left on site = 108,900 sq. ft. (2.5 acres)

$174,240$  minus  $108,900 = \mathbf{65,340}$  sq. ft. of replacement trees

Step 4: Replacement trees required to meet **40% Canopy Cover (CC)**

➤ **65,340 sq. ft.** of area to be planted in trees

a. Over-story trees = 1500 sq. ft./tree planted

50 over-story (large canopy trees) x 1500 sq. ft. = 45,000 sq. ft.

10 over-story (medium canopy trees) x 550 sq. ft. = 5,500 sq. ft.

Total sq. ft. 50,500 sq. ft.

b. Under-story trees = 250 sq. ft./tree planted

60 under-story (small canopy trees) x 250 sq. ft. = 15,000 sq. ft.

c. **Total square footage of trees planted: 65,500 sq. ft.**

THE 65,500 SQ. FT. OF PLANTED TREES HAS MET 40% CANOPY COVER REQUIREMENT

**Planting Specifications**

1. Trees shall conform to the American Standard for Nursery Stock for proper relations of height, caliper and root ball diameter.

A. The diameter of the planting hole shall be a minimum of three (3) times the diameter of the root ball.

B. The planting hole sidewalls shall be scored or roughened to eliminate the smooth, slick surface caused by the shovel or auger.

- C. If containerized material is to be planted, any circling roots shall be cut by slicing the root ball vertically from top to bottom in two to three well spaced lines around the root ball with a sharp knife.
- D. The root ball shall rest on undisturbed soil in the planting hole with the top of the root ball on level with the natural ground level or slightly raised (not to exceed a height of two (2) inches above the natural ground level).
- E. Any tree planted with the top of the root ball below natural ground level shall not be counted towards the required Canopy Replacement for the property.
- F. The soil used to backfill around the root ball shall be un-compacted, native soil free of rocks, trash, or any construction debris.
- G. Stakes and guy wires should only be installed when absolutely necessary. Supporting devices shall not interfere with vehicular or pedestrian movement and shall be removed after twelve (12) months.
- H. Mulch in the form of pine straw, pine bark, or wood chips shall be evenly distributed over the planting hole to a settled depth of two (2) inches.
- I. Permanent built-in or temporary watering systems shall be installed to ensure the plants will survive the critical establishment period.
- J. Out-of-season planting is discouraged. Property Owners/Developers may submit request for delay to allow for plant installation to occur at a time which better coincides with the normal planting season (November 1st to March 31st). Approval of this request will require a temporary tree bond to be deposited with the City of Richmond Hill.

## **Requirements for Certificate of Occupancy, Maintenance and Perpetual Compliance**

### 1. Requirements for certificate of occupancy.

#### *A. Final Inspection.*

- a. The director, or designee, shall make a final inspection of tree canopy for lot completeness prior to issuance of the certificate of occupancy on any residential or commercial structure. The total required tree canopy shall match the approved plan.

#### *B. Temporary Tree Bond or Letter of Credit*

- a. The builder or developer shall post a temporary tree bond for trees that cannot be planted because of continued construction, weather, plant availability or other approved delay. The bond shall be posted with the City of Richmond Hill planning and zoning department at the time the final plat is requested for the development or phase, whichever is applicable. A deadline for completion of work shall be scheduled with the planning and zoning director. The amount of the temporary tree bond will be determined by the number of over and understory trees remaining to be planted. The developer or builder will submit a list of trees that are being bonded out, along with the estimated cost of trees and planting. The city arborist will review the submitted list and certify the costs submitted. If in agreement with the submitted costs, the city arborist will certify the amount and that amount plus 25 percent for contingencies will be bonded with the city. In any

event, the amount determined to be sufficient will be decided upon by the city arborist. The temporary tree bond may be in the form of a letter of credit from an approved lending institution, cash bond or cash deposit.

b. The director, or designee, shall make a final inspection of the trees at the scheduled completion of work. If work has been completed, the temporary tree bond shall be refunded or letter of credit released.

### *C. Two Year Tree Bond*

a. A two-year tree bond shall be posted with the City of Richmond Hill Planning and Zoning Department at the time of final plat approval.

b. Two years after the date of the bond, the director or designee will inspect the site and make a determination of whether the required trees are viable. Assuming all trees are viable, the bond will be released. If deficiencies are found, the owner of the property shall be notified to correct the deficiencies within 90 days. If the deficiencies are not corrected in 90 days, the city shall use the bond to the extent necessary to bring the property into compliance with the provisions of this chapter.

The amount of the bond will be based upon 10 percent of the overall cost of the existing and trees planted on the property to satisfy the 40 percent canopy cover. The overall cost of the tree plantings and existing tree values of previously planted trees will be submitted to the director, or designee, for review. In consultation with the city arborist, the director will determine the amount for bonding.

### *D. Maintenance.*

a. All trees credited toward canopy cover shall be maintained according to industry standards. All pruning shall be done in accordance with ANSI A-300-1995 or most recent edition.

### *E. Perpetual Compliance.*

a. All sites are required to remain in compliance with the total canopy required for the development, and are subject to inspection by the City for this purpose. If deficiencies are found, the owner of the property shall be notified to correct the deficiencies within 90 days. If the deficiencies are not corrected in 90 days, the City will seek administrative or judicial relief, as appropriate and necessary.

## **Variance and Appeal Procedures**

- a. Requests for variance from the provisions of this chapter shall be submitted in writing to the director of the planning and zoning department, stating the specific variance requested and reasons why a variance should be granted.
- b. The planning and zoning director will schedule a variance hearing at the next appropriate city council meeting where the council will render a decision on whether a variance should or should not be granted.

## **Violations and Penalties**

- a. Property in violation of this ordinance shall be subject to a stop work order and/or fines and penalties until such time as the planning and zoning director, or designee, determines remedial actions have been satisfied as follows:
  1. Plant replacement trees on site; and/or city property acceptable to the city planning and zoning director, or designee.
  2. No more than 15% of any one species shall be permitted for replacement trees. Species must be indigenous or native and comply with the acceptable city planting list.
- b. Where trees have been removed in violation of this ordinance, the city shall require mitigation in one or more of the following options:
  1. Plant replacement trees on site; and/or city property acceptable to the city planning and zoning director, or designee.
  2. No more than 15% of any one species shall be permitted for replacement trees. Species must be indigenous or native and comply with the acceptable city planting list.
- c. No certificate of occupancy for any residential or commercial structure shall be given if the property, or lot, is not in compliance with this ordinance.
- d. The city shall also retain the option of levying a fine on the developer or builder for the unauthorized removal of any trees shown protected by the tree management plan or used in the calculation of the required 50 percent tree canopy. Such fines will be \$500 per tree removed and may be calculated on a daily basis until such time as the city is satisfied with the required mitigation solution.

## **Severability**

- a. Should any part or provision of this ordinance be declared by a court of the competent jurisdiction to be invalid, the same shall not affect the validity of the ordinance as a whole or any part thereof other than part held to be invalid.

## **Indemnification**

- b. Nothing in this ordinance shall be deemed to impose any liability upon the City of Richmond Hill, or upon any of its officers or employees, or to relieve the owner or occupant of any private property from the duty to keep in safe and healthy condition the trees upon their property or upon a public right-of-way over their property.

## **Tree Management Plan**

1. An application for a land disturbing activities permit must include an approved tree management plan.

## **Tree Protection Requirements**

1. *Protection of preserved or planted trees.* Tree protection zones shall be established and maintained on a site for all trees, preserved or planted, for which tree canopy percentages are to be claimed. The following provisions apply to such zones and the trees within them:

A. An approved tree protection plan and details shall accompany all applications for land clearing and/or land disturbing activities identifying where and how existing trees are to be protected during clearing and construction of the project. Such plan and details shall be approved by the director or designee upon a finding that the plan adequately addresses the criteria set forth in the Tree Ordinance.

B. The minimum dimension of the tree protection zone shall be one foot of radius per inch diameter breast height, measured from the center point of the trunk, provided that in no case shall the protection zone be less than a radius of 2.5 feet. The Tree Protection Zone shall be surrounded, at minimum, by a 4' temporary fence, or acceptable equivalent.

C. If a determination is made by the director or designee that the required tree canopy percentage for a site is to be provided by one or more mature trees of greater than thirty inch (30") DBH, a contingency planting plan shall be required. The contingency plan will indicate locations where trees can be planted for canopy requirements in the event of loss of retained trees.

D. The area within any tree protection zone must remain open and unpaved. The use of a paving system that allows adequate infiltration of water and air to the root zone may be allowed subject to the approval of the director or designee.

E. No root raking shall be allowed within any tree protection zone at any time during clearing, grading or construction of the project.

F. No trenching shall be allowed within any tree protection zone at any time during clearing, grading or construction of the project.

G. No vehicles shall be parked, or construction material stored or substances poured or disposed of or placed, within any tree protection zone at any time during clearing or construction of the project.

H. No change in grade within the tree protection zone shall be allowed around existing trees except for a maximum addition of two inches of mulch unless approved by the director or designee.

I. To the extent possible, all site work shall be planned and conducted in a manner that will minimize damage to protected trees from environmental changes such as lowered water table, altered site drainage, or any other land disturbance within or immediately adjacent to the critical root zones of the trees.

J. Tree wells or retaining walls may be constructed as needed to protect preserved trees from grade changes which result in changes of water supply to the tree protection zone. Adequate means for drainage of excess water from the tree protection zone shall be provided if tree wells or tree walls are constructed.

*2. Protection of Trees Adjacent to Land Development Activities*

A. A property owner responsible for any land disturbing activity within the critical root zone of a tree located on adjacent property shall provide for the protection of such tree to the standards of this chapter.

**B. A property owner responsible for a land disturbing activity that causes damage to a tree which affects the health or growth of such tree, or requires removal of a tree on an adjacent property shall compensate the property owner for such tree loss or damage as set forth below, to include replacement and removal. If such affected trees are in a public right-of-way, the cost of ongoing maintenance, tree removal or replanting of additional trees shall be borne by the property owner affecting the trees in the right-of-way.**

*3. General Protection of Trees on City Rights-of-way*

A. Unless otherwise directed or permitted by an applicable City of Richmond Hill permit or license, no person shall plant, prune, or remove any tree on public property without procuring the written approval of the director or designee.

B. No person shall cause damage to trees on rights-of-way or other public property, by cutting, carving, attaching any rope, wires, nails, signs, or other object to any such tree; or allowing any harmful gas, liquid, or solid substance to contact any tree; or to set fire or permit any fire to burn which may injure any portion of any tree; or causing unnecessary harm to tree roots through construction activities, vehicle parking, or material storage.

C. Any person causing damage or unauthorized removal of a tree on rights-of way or public property shall provide compensation to the City for the value of the tree damaged or removed, based upon input from the city arborist.

## Design Requirements

### 1. *Commercial, Industrial, Institutional and Multi-Family Development*

*A. Applicability.* Except as provided in this chapter, a tree protection plan shall be submitted for all proposed commercial, industrial or multifamily development. Such plan shall include a tree protection and tree establishment plan. Such plans shall conform to the standards and requirements of these regulations.

*B. Greenspace standards.*

1. A minimum of 10 percent of the total land area of the development shall be devoted to green space.
2. Sidewalks, curbing, or any other paved or impermeable surfaces within the green space area shall not count towards the 10-percent minimum green space requirement.
3. For all sites of one acre or larger no more than 40% of trees planted shall be of the same species in order to increase species diversity.
- iv. Existing groups of trees shall be retained wherever possible.

*C. Parking areas.*

**1. A minimum of 40% in canopy tree coverage for each island or median shall be required. The overall development must still meet the 40% canopy cover.**

*D. Buffers.* Existing and/or planted canopy, understory trees, planted evergreen shrubs, etc. may be incorporated into buffer areas as defined by the City of Richmond Hill Zoning Ordinance. Such planting shall be credited for canopy percentage provided other standards and requirements of the chapter are met.

### 2. *Residential Subdivisions*

*A. Plans required.*

1. *For rights-of-way and drainage and utility easements.* Except as provided in this section, in order to obtain a land clearing permit for rights-of-way and easements, a tree plan shall accompany each preliminary plat for review. Such plan shall conform to the standards and requirements of these regulations.
2. *For individual lots.* A plot plan which includes tree canopy information shall be submitted by the building permit applicant in order to obtain a land clearing permit for an individual lot, if applicable.

*B. Requirements for utilities crossing the tree easement.* Utilities crossing the tree easement shall be located outside of the critical root zone of trees, unless otherwise approved by the director or designee. Utility locations shall allow for the unobstructed planting of street trees at a separation of an average of 50 feet.

*C. Tree requirements within new single-family subdivisions.*

1. *Planted street trees.*

- a. Canopy trees shall not be planted within the right-of-way or in tree easements, without permission from the City of Richmond Hill. Such trees shall be no less than two inches DBH in caliper at time of installation. At least one tree shall be planted on each residential lot within a new residential subdivision.
- b. The tree species for each street must be approved by the director or designee.
- c. The developer shall pay to the Tree Fund an amount in the form of a

cash deposit equal to the cost of purchase and installation of the canopy coverage and trees. Purchasers of lots within the subdivision must be made aware by the developer or builder that trees will be planted upon their property.

d. The director, or designee, shall make a final inspection of the trees at the scheduled completion of work. If work has been completed, the temporary tree bond shall be refunded or letter of credit released.

2. *Existing trees.* Existing trees for which canopy percentages are sought, may be protected within tree easements as street trees, on individual lots, within set-aside areas, in buffers or elsewhere as approved by the director or designee, provided that they be protected prior to clearing.

a. *Trees on individual lots (other than within street tree easements).*

Existing canopy trees on new lots may count toward the required canopy percentage, provided they meet all other requirements of this section.

b. *Trees within set-aside areas.* Existing and/or planted trees within set-aside areas, as defined by this chapter, may count towards the canopy coverage requirement if they meet the standards of this ordinance.

c. *Special cases.* Where circumstances prevent achieving the required tree canopy percentage per acre on a site, one of the following shall apply, subject to approval by the administrator:

1. *Tree fund.* The owner/developer shall contribute to the tree fund, based on the number and species of trees needed to meet the required tree canopy, the commercial price and installation cost for such trees, plus an additional 25 percent.. The amount to be credited to the tree fund will be submitted by the developer or builder and will be approved or disapproved after coordination with the city arborist. In any event, the city arborist will determine the amount to be bonded to satisfy the needed canopy percentage.

2. The owner/developer shall establish a set-aside on property owned by the owner/developer. The set-aside shall be a permanent, recorded conservation easement, and shall have sufficient tree canopy to meet the requirements of this ordinance. In no case shall less than one tree be planted per residential lot.

### *E. Street Trees*

1. The planting of any trees in public rights-of-way must be approved by the director, or designee. Such plantings, if approved, will not count against the tree canopy coverage percentage.

### *F. Tree topping.*

- 1. Tree topping is not permitted. Tree topping is an unacceptable practice and is not permitted for any reason.**

## *3. General Standards*

### *a. Planted Trees*

- b. All large trees, except for conifers, must be of at least two and a half inch (2 ½") caliper to qualify for canopy percentages when planted on the site.
- c. All coniferous trees and all medium trees must be a minimum of two-inch (2") caliper to qualify for tree canopy percentages when planted on the site.
- d. All small trees must be a minimum of one-inch caliper to qualify for canopy percentage when planted on the site.
- iv. If multi-trunk trees are planted or preserved the largest trunk only shall qualify for canopy percentage.
- e. For palms, canopy percentage will be assigned per foot of stem height up to 10', regardless of whether the tree is preserved or planted on the site.
- f. All planting of new trees shall be done in accordance with ANSI A-300-1995 or most recent edition.
- g. All trees and plant materials shall conform to the most recent edition of the American Standard for Nursery Stock by the American Association Nurserymen.
- h. A detailed list of qualifying species is provided in an attachment to this ordinance.

### *B. Retained Trees*

1. All individual preserved trees must be greater than six (6") inches DBH to be considered to qualify for tree canopy percentage.
2. The preservation of mature native stands of approved trees and understory vegetation shall be counted toward the overall tree canopy percentage.
  - a. The area proposed for preservation must be approved by the director, or designee, and must have sufficient quantity, size and quality of mature trees to warrant preservation.
  - b. All existing vegetation may be left within the preserved stand with the exception of hazardous trees. Thinning of tree stands will be allowed pursuant to an approved plan. Clearing of underbrush shall be allowed if approved by the director, or designee.

Mature Size	Large 50 – 70'	Medium 30 – 40'	Small 15 – 20'	Evergreen 40 – 50'
Minimum Width of Tree Space	8' +	8' +	4'	8' +
Spacing between trees	50'	40'	30'	30'
Overhead utilities	DO NOT PLANT	DO NOT PLANT	Okay	DO NOT PLANT
Intersections	40'	40'	40'	40'
Stop signs, traffic signs, street lights, traffic signals	35'	35'	35'	35'
Fire hydrant, gas or water valves	10'	10'	10'	10'
Underground utilities	10'	10'	10'	10'

- c. The area shall be protected during the construction period using the same standards and specifications as required for a tree protection zone.
- d. The tree retention area shall be considered a set-aside and shall be shown within a permanent, recorded tree conservation easement.

**C. Planting Restrictions**

**Placement of street trees and park trees.**

**(a) To minimize traffic hazards at street intersections and avoid conflicts with City infrastructure all tree plantings must follow listed guidelines:**

**(b) Distance from curb and sidewalk:**

**(1) The distance public trees may be planted from curbs or curblines and sidewalks will be in accordance with the three species size classes in the City of Richmond Hill list of street trees and no trees may be planted closer to the curb or sidewalk than the following:**

- (a) Small trees two feet (minimum of a four foot wide treelawn)**
- (b) Medium trees three feet (minimum of a six foot wide treelawn)**
- (c) Large trees four feet (minimum of an eight foot wide treelawn) except in special plantings designed or approved by the City Tree Board and City Zoning Department.**

**E. Irrigation**

- a. All trees and landscaped areas shall be provided with a means for delivery of water in a quantity that is sufficient to establish and maintain the viability of the plants.

**Large Canopy Trees for Over-story: (Count for 1500 sq. ft. of area for planting – minimum 6” DBH)**

Large Trees >50' Suitable for areas with more than 400 square feet of total planting area; in a planting strip at least 16' x 25' or 20' x 20'						
<u>Common/Scientific Name</u>	<u>Height &amp; Width</u>	<u>Sun/ Shade</u>	<u>Insect &amp; Disease Resistance</u>	<u>Growth Rate</u>	<u>Deciduous Evergreen</u>	<u>Remarks</u>
Beech, American <i>Fagus grandifolia</i>	50-75' h 40-80' w	PS/FS	L	S	D	Native. Needs ample room above and below ground. Acid soil. Fruit attracts wildlife, no litter. Zones 4-9
Blackgum <i>Nyssa sylvatica</i>	65-75' h 25-35' w	PS/FS	H	S	D	Native. Soil pH below 6 best, texture tolerant, drought tolerant, wet soil tolerant. Fruit attracts wildlife, some litter. Zones 4-9
Cypress, bald <i>Taxodium distichum</i>	60-80' h 25-35' w	FS/PS	M	F	D	Native. Drought & wet tolerant. 'Knees' form in wet areas. Tolerates compaction. Zones 4-11
Cypress, pond <i>Taxodium ascendens</i>	50-60' h 50-60' w	PS/FS	H	F	D	Native. Soil adaptable below 7.5. Knobby 'knees' form in moist areas. Attracts wildlife. No litter. Zones 5-9
Hickory, pignut <i>Carya glabra</i>	50-65' h 30-40' w	PS/FS	M	M	D	Native. Soil texture adaptable. Drought tolerant. Nuts attract wildlife. Zones 4-9
Hickory, shagbark <i>Carya ovata</i>	60-80' h 25-35' w	PS/FS	H	S	D	Native. Soil texture adaptable. Abundant nuts attract wildlife. Shaggy bark attractive. Zones 4-8
Magnolia, Southern <i>Magnolia grandiflora</i>	60-80' h 30-40' w	PS/FS	M	M	E	Native. Soil adaptable. Bark is thin, protect from mechanical injury. White showy blooms in spring & summer. Good cultivars. Zones 7-9
Maple, Red <i>Acer rubrum</i>	60-75' h 25-35' w	PS/FS	H	F	D	Native. Prefers acidic soil, texture tolerant, wet tolerant. Bark is thin. Fruit attracts wildlife. Many cultivars. Zones 4-9
<b>Large Canopy Trees</b>						
<u>Common/Scientific Name</u>	<u>Height &amp; Width</u>	<u>Sun/ Shade</u>	<u>Insect &amp; Disease Resistance</u>	<u>Growth Rate</u>	<u>Deciduous Evergreen</u>	<u>Remarks</u>
Oak, laurel/darlington <i>Quercus laurifolia</i>	60-70' h 50' w	PS/FS	H	F	SE	Native. Soil adaptable. Roots will heave sidewalks. Acorns attract wildlife, creates some litter. Zones 6-10
Oak, live <i>Quercus virginiana</i>	60-80' h 60-120' w	PS/FS	H	M	E	Native. Soil adaptable. Roots will eventually heave sidewalks. Good wind resistance. Some litter. Zones 8-10
Oak, shumard <i>Quercus shumardii</i>	60-80' h 40-50' w	FS	M	F	D	Native. Soil texture adaptable, acidic. Urban tolerant. Acorns attract wildlife. Some litter. Zones 5-9
Oak, southern red <i>Quercus falcata</i>	60-80' h 60-70' w	FS	M	M	D	Native. Acidic soil, all textures, urban tolerant. Fruit attracts wildlife, no significant litter. Zones 7-9

Oak, scarlet <i>Quercus coccinea</i>	60-75' h 45-60' w	FS	M	M	D	Native. Acidic soil, all textures. Needs ample root space. Nuts attract wildlife. Some litter. Zones 5-8
Oak, swamp chestnut <i>Quercus michauxii</i>	60-70' h 30-50' w	PS/FS	M	M	D	Native. Acidic soil, all textures, occasional wet. Leaf litter persistent, acorns for wildlife. Zones 6-9
Oak, white <i>Quercus alba</i>	60-100' h 60-80' w	PS/FS	H	M	D	Native. Acidic soil, all textures. Protect roots from disturbances. Nuts attract wildlife. Some litter. Zones 3-9
Oak, willow <i>Quercus phellos</i>	60-75' h 40-60' w	FS	M	F	D	Native. Acidic soil, all textures, occasional wet, drought, urban tolerant. Nuts attract wildlife. Some litter. Zones 5-9
Pine, loblolly <i>Pinus taeda</i>	50-80' h 30' w	FS	M	F	E	Native. Soil texture adaptable, acidic. Thick bark- resistant to fire. Needle drop prolific. Zones 6-9
<b>Large Canopy Trees</b>						
<b><u>Common/Scientific Name</u></b>	<b><u>Height &amp; Width</u></b>	<b><u>Sun/ Shade</u></b>	<b><u>Insect &amp; Disease Resistance</u></b>	<b><u>Growth Rate</u></b>	<b><u>Deciduous Evergreen</u></b>	<b><u>Remarks</u></b>
Pine, longleaf <i>Pinus palustris</i>	60-80' h 30-40' w	FS	M	F	E	Native. Soil texture adaptable. Beautiful bark. Needle and cone drop prolific. Drought tolerant once established. Zones 7-10
Redcedar, eastern <i>Juniperus virginiana</i>	40-50' h 8-25' w	FS	H	F	E	Native. Soil pH and texture tolerant. Blue fruit attracts wildlife. Good wind break, urban tolerant. Zones 3-9
Sweetgum <i>Liquidambar styraciflua</i>	75' h 50' w	PS/FS	H	M	D	Native. Soil pH of 7.5 or less. Surface roots. Fruit attract wildlife, significant litter. Cultivar 'Rotundifolia' fruitless. Zones 5-9
Sycamore, American <i>Platanus occidentalis</i>	75-90' h 60-70' w	FS	L	F	D	Native. Soil pH and texture adaptable. Prefers moist soil. Roots may heave sidewalks. Showy bark. Zones 4-9
Tulip poplar <i>Liriodendron tulipifera</i>	80-120' h 25-40' w	FS	H	F	D	Native. Acidic soil, occasional wet. Avoid drought & salt. Showy greenish-yellow blooms in spring. Some leaf drop in high heat. Zones 4-9
Zelkova, Japanese <i>Zelkova serrata</i>	50-90' h 50-75' w	FS	H	M	D	Japan. Soil adaptable. Drought & urban tolerant once established. Cultivar 'Green Vase' elm-like. Zones 5-8

### KEY

<b><u>Sun/shade exposure:</u></b>	<b><u>Growth rate:</u></b>	<b><u>Pest resistance:</u></b>	<b><u>Type:</u></b>
FS = Full sun	S = Slow (less than 1' per year)	H = High	D = Deciduous
PS = Part sun	M = Medium (1-2' per year)	M = Medium	E = Evergreen
S = Shade	F = Fast (more than 2' per year)	L = Low	SE = Semi Evergreen

**Medium Canopy Trees: (Count for 550 sq. ft. of area for planting – minimum 6” DBH)**

**Medium Trees 30’ - 50’ Suitable for spaces with 100 to 200 sqft of total planting space; in a planting strip at least 4-7 feet wide; or place at least 4’ from pavement or wall.**

<u>Common Name/Scientific Name</u>	<u>Height &amp; Width</u>	<u>Sun/ Shade</u>	<u>Insect &amp; Disease Resistance</u>	<u>Growth Rate</u>	<u>Deciduous Evergreen</u>	<u>Remarks</u>
Birch, river <i>Betula nigra</i> 'Heritage	40-50' h 40-50' w	PS/FS	M	F	D	Native. Acidic soil. Drought sensitive in confined spaces. Roots need room. Cultivars available. Zones 3B-9
Elm, lacebark <i>Ulmus parvifolia</i> 'Drake'	40-50' h 35-50' w	FS	H	F	D	Asia. Soil adaptable. Drought tolerant once established. Thin bark. Urban tolerant. Zones 5-9
Goldenraintree <i>Koelreuteria paniculata</i>	30-40' h 30-40' w	FS/PS	M	M	D	China. Soil adaptable. Salt, drought, urban tolerant. Bright yellow flowers in spring. Zones 5-8
Holly, East Palatka <i>Ilex x attenuata</i>	30-45' h 10-15' w	FS	M	M	E	Florida natural hybrid. Urban & drought tolerant once established. Red berries attract wildlife. Zones 7-9
Holly, American <i>Ilex opaca</i>	40-50' h 15-25' w	FS	M	S	E	Native. Salt and drought tolerant once established. Red berries attract birds, no litter. Zones 5-9
Holly, Nellie R. Stevens <i>Ilex x</i>	20-30' h 10-15' w	FS	H	M	E	Hybrid. Soil texture tolerant. Needs male and female plants for berries. Drought tolerant. Showy red berries & deep green leaves. Zones 6-9
Holly, Savannah <i>Ilex x attenuata</i>	30-45' h 6-10' w	FS	M	M	E	Hybrid. Acidic soil, urban tolerant. Red berries attract birds, no litter. Zones 6-9
<b>Medium Canopy Trees</b>						
<u>Common Name/Scientific Name</u>	<u>Height &amp; Width</u>	<u>Sun/ Shade</u>	<u>Insect &amp; Disease Resistance</u>	<u>Growth Rate</u>	<u>Deciduous Evergreen</u>	<u>Remarks</u>
Loquat <i>Eriobotrya japonica</i>	20-30' h 30-35' w	PS/FS	M	M	E	China. Southern range only. Texture tolerant. Well drained soil, afternoon shade. Orange or yellow fruit attracts wildlife, litter. Zones 8-10
Magnolia, sweetbay <i>Magnolia virginiana</i>	40-50' h 15-25' w	PS	M	M	D	Native. Acidic soil. Tolerates wetlands. Flood & drought tolerant. Showy, white, fragrant flowers. Zones 5-9

Magnolia, Southern <i>Magnolia grandiflora</i>	30-50'h 15-30'w	FS	H	M	E	Native. Soil adaptable. White showy blooms in summer & early fall. Smaller leaves than species. Zones 6-9
Maple, trident <i>Acer buergerianum</i>	30-40' h 25'w	PS/FS	H	M	D	China. Acidic, well drained soil. Urban, salt & wind tolerant. Attractive bark. Zones 5-8
Oak, overcup <i>Quercus lyrata</i>	35-50' h 35-50' w	FS	H	M	D	Native. Soil adaptable, wet & drought tolerant once established. Urban tolerant. Acorns attract wildlife, significant litter. Zones 5-9
Palm, cabbage <i>Sabal palmetto</i>	40-50'h 10-12' w	PS/FS	H	S	E	Native. Soil tolerant, frond and fruit litter messy. Needs irrigation until established as all cut roots die back. Southern region only. Zones 8B-11
Palm, windmill <i>Trachycarpus fortunei</i>	20-40' h 6-10' w	PS/FS	M	S	E	China. Soil texture adaptable. Drought tolerant once established. Protect from wind. Southern range of state only. Zones 8A-10B
<b>Medium Canopy Trees</b>						
<b><u>Common Name/Scientific Name</u></b>	<b><u>Height &amp; Width</u></b>	<b><u>Sun/ Shade</u></b>	<b><u>Insect &amp; Disease Resistance</u></b>	<b><u>Growth Rate</u></b>	<b><u>Deciduous Evergreen</u></b>	<b><u>Remarks</u></b>
Pistachio, Chinese <i>Pistachio chine sis</i>	25-35' h 25-35' w	FS/PS	H	M	D	China. Soil texture, pH, drought, urban tolerant. Fruit causes some litter. Zones 6-9
Redbud, eastern <i>Cerci's Canadensis</i> 'Forest Pansy'	20-30' h 15-30' w	PS	M	F	D	Native. Light, rich, moist soil, texture adaptable. Showy purple blooms in spring. Cultivar 'Texas White' good. Short lived. Zones 4-9
Silver bell, <i>Carolina Haleiwa Carolina</i>	20-40' h 15-30' w	PS/FS	H	M	D	Native. Acidic soil. Drought sensitive in full sun, roots need room. Showy white blooms in spring. Zones 5-8
Stewart, tall Stewart monadelphpha	25-35' h 15-25' w	PS/FS	H	S	D	Japan. Acidic soils. Thin bark, attractive bark. White, camellia-like blooms in summer. Part shade best in 8B. Zones 6-8
Yellowwood, American Cladastris kentukea	30-50' h 40-50' w	PS/FS	H	M	D	Native. Needs pruning while young. White fragrant blooms. Tolerates urban conditions. Zones 4-8

**KEY**

<b><u>Sun/shade exposure:</u></b>	<b><u>Growth rate:</u></b>	<b><u>Pest resistance:</u></b>	<b><u>Type:</u></b>
FS = Full sun	S = Slow (less than 1' per year)	H = High	D = Deciduous
PS = Part sun	M = Medium (1-2' per year)	M = Medium	E = Evergreen
S = Shade	F = Fast (more than 2' per year)	L = Low	SE = Semi Evergreen

**Small Canopy Trees – Under-story: (Count for 250 sq. ft. of area for planting – minimum 6” DBH)**

**Small Trees < 25’ Useful under utility lines; areas with < 100 sf of total planting area; a planting strip with a width of at least 4’.**

<u>Common Name/Scientific Name</u>	<u>Height &amp; Width</u>	<u>Sun/ Shade</u>	<u>Insect &amp; Disease Resistance</u>	<u>Growth Rate</u>	<u>Deciduous Evergreen</u>	<u>Remarks</u>
Chastetree <i>Vitex agnus-castus</i>	10-15' h 15-20' w	PS/FS	M	F	D	Europe. Soil & pH adaptable. Showy lavender blooms. Zones 7-8
Cherry, Okame <i>Prunus x incamp 'Okame'</i>	15-25' h 20' w	PS/FS	M	M	D	Hybrid. Soil texture and pH adaptable. Roots need room. Pink showy blooms. Fruit attracts birds. Zones 7-9
Crapemyrtle <i>Lagerstroemia indica</i>	15-30' h 15-25' w	FS	H	M	D	China. Soil adaptable, urban tolerant, drought tolerant once established. Showy summer blooms. Zones 7-9
Crapemyrtle, Japanese <i>Lagerstroemia fauriei</i>	35-50' h 25-35' w	FS	H	M	D	Japan. Soil adaptable. Urban tolerant. White showy flowers. Beautiful bark. May be resistant to powdery mildew. Zones 6-9
Dogwood, flowering <i>Cornus florida</i>	20-30' h 20' w	PS	M	M	D	Native. Part shade. Drought sensitive, low salt tolerance, needs good drainage. White showy flowers. Horizontal branching pattern. Zones 5-9
Dogwood, kousa <i>Cornus kousa</i>	15-20' h 15-20' w	PS/FS	M	S	D	Japan. Soil adaptable. Part shade, needs water. Roots need room. Showy white blooms in spring. Fruit attracts birds. Zones 5-8
Fringetree <i>Chionanthus virginicus</i>	12-15' h 10-15' w	PS/FS	M	S	D	Native. Acidic soil. Thin bark easily damaged. Urban tolerant. Showy white blooms in spring. Fruit attracts birds. Zones 4-9
<b>Small Canopy Trees</b>						
<u>Common Name/Scientific Name</u>	<u>Height &amp; Width</u>	<u>Sun/ Shade</u>	<u>Insect &amp; Disease Resistance</u>	<u>Growth Rate</u>	<u>Deciduous Evergreen</u>	<u>Remarks</u>
Holly, yaupon <i>Ilex vomitoria 'Pendula'</i>	15-20' h 15-20' w	S/FS	M	M	E	Native. Soil & pH greatly adaptable. Urban tolerant. Thin bark. Red berries attract wildlife. Zones 7-10
Maple, amur <i>Acer ginnala</i>	15-20' h 15-20' w	PS/FS	H	M	D	Japan. Soil adaptable. Drought tolerant once established. Showy white to yellow blooms in spring. Bright red fruit, some litter. Zones 3-8
Magnolia, star	15-20' h	PS/FS	M	S	D	Japan. Acidic rich soil, all

<i>Magnolia stellata</i>	10-15' w					textures. Not drought tolerant. White or pink showy blooms in spring. Zones 4-8
Magnolia, Southern <i>Magnolia grandiflora</i> 'Little Gem'	20-25' h 10-15' w	PS/FS	M	M	E	Native. Soil adaptable. Bark is thin, protect from mechanical injury. White showy blooms in summer and early fall. Zones 7-9
Palm, pindo <i>Butia capitata</i>	15-25' h 10-15' w	PS/FS	H	S	E	Brazil. Soil adaptable. Drought tolerant. Showy orange or yellow fruit attracts wildlife, significant litter. Southern range only. Zones 8B-11.
Redbud, Chinese <i>Cercis chinensis</i>	10-15' h 6-10' w	PS/FS	M	F	D	China. Light, rich, moist soil. Showy purple blooms in spring. Zones 6-9
Redbud, Oklahoma <i>Cercis reniformis</i> 'Oklahoma'	20-30' h 15-30' w	PS/FS	M	F	D	Native. Soil & pH adaptable, salt sensitive, showy thick leaves. Zones 5-9
Snowbell, Japanese <i>Styrax japonicus</i>	20-30' h 15-25' w	PS/FS	H	M	D	Japan. Acidic loamy soil. Afternoon shade, protect from wind. Attractive exfoliating bark. White showy blooms in spring. Zones 6-8
<b>Small Canopy Trees</b>						
<b><u>Common Name/Scientific Name</u></b>	<b><u>Height &amp; Width</u></b>	<b><u>Sun/ Shade</u></b>	<b><u>Insect &amp; Disease Resistance</u></b>	<b><u>Growth Rate</u></b>	<b><u>Deciduous Evergreen</u></b>	<b><u>Remarks</u></b>
Waxmyrtle <i>Myrica cerifera</i>	15-20' h 20-25' w	PS/FS	M	F	E	Native. Soil & pH adaptable, urban tolerant. Blue berries attract wildlife. Zones 8-11

**KEY**

<b><u>Sun/shade exposure:</u></b>	<b><u>Growth rate:</u></b>	<b><u>Pest resistance:</u></b>	<b><u>Type:</u></b>
FS = Full sun	S = Slow (less than 1' per year)	H = High	D = Deciduous
PS = Part sun	M = Medium (1-2' per year)	M = Medium	E = Evergreen
S = Shade	F = Fast (more than 2' per year)	L = Low	SE = Semi Evergreen

